**[6450-01-P]**

**DEPARTMENT OF ENERGY**

**Office of Energy Efficiency and Renewable Energy**

**[Case Numbers EPS-001, EPS-002, EPS-003, and EPS-004]**

# Notice of Decision and Order Granting Individual Waivers to Apple Inc., Microsoft Corporation, Poin2 Lab and Hefei Bitland Information Technology Co., from the Department of Energy External Power Supplies Test Procedure

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy (DOE).

**ACTION:** Notice of decision and order.

**SUMMARY:** This notice announces a Decision and Order granting Apple, Inc. ("Apple"), Microsoft Corporation ("Microsoft"), Poin2 Lab ("Poin2") and Hefei Bitland Information Technology Co. Ltd. ("Bitland") individual waivers from specified portions of the DOE test procedure for determining the energy efficiency of external power supplies. The petitioners are required to test and rate specifically identified external power supply basic models in accordance with the alternate test procedure described in the Decision and Order.

**DATES:** The Decision and Order is effective on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

**FOR FURTHER INFORMATION CONTACT:**

Ms. Lucy deButts, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-1604. E-mail: *AS_Waiver_Requests@ee.doe.gov*.

Mr. Michael Kido, U.S. Department of Energy, Office of the General Counsel, Mail Stop GC-33, Forrestal Building, 1000 Independence Avenue SW., Washington, DC 20585-0103. Telephone: (202) 586-8145. Email: *Michael.Kido@hq.doe.gov*.

**SUPPLEMENTARY INFORMATION:**

On June 8, 2017 and June 22, 2017, the Information Technology Industry Council ("ITI"), on behalf of four petitioners Apple, Microsoft, Poin2, and Bitland -- filed individual petitions for waiver under 10 CFR 430.27 from the current DOE test procedure for EPSs for several basic models of adaptive EPSs. On July 24, 2017, DOE published a notice announcing its receipt of the petitions for waiver, which also granted the petitioners interim waivers.

In that notice, DOE also solicited comments from interested parties on all aspects of the petition and specified an alternate test procedure that must be followed for testing and certifying the specific basic models for which the petitioners requested a waiver. 82 FR 34294.

On **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**, DOE publishes the notice announcing a Decision and Order granting a waiver to the petitioners.

Issued in Washington, DC, on March 9, 2018.

Kathleen B. Hogan, Ph.D.
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy

**Case #EPS-001, EPS-002, EPS-003, EPS-004**
**Decision and Order**

## I. Background and Authority

The Energy Policy and Conservation Act of 1975, as amended ("EPCA" or "the Act"),[1] Public Law 94-163 (42 U.S.C. 6291–6317, as codified), among other things, authorizes DOE to regulate the energy efficiency of a number of consumer products and industrial equipment. Title III, Part B[2] of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles, a program that includes external power supplies ("EPSs"), which are the subject of this Order. (42 U.S.C. 6291(36); 42 U.S.C. 6295(u)) Under EPCA, DOE's energy conservation program consists essentially of four parts: (1) testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures.

The Federal testing requirements consist of test procedures that manufacturers of covered products must use as the basis for: (1) certifying to DOE that their products comply with the applicable energy conservation standards adopted pursuant to EPCA (42 U.S.C. 6295(s)), and (2) making representations about the efficiency of those products (42 U.S.C. 6293(c)). Similarly, DOE must use these test procedures to determine whether a product complies with relevant standards promulgated under EPCA. (42 U.S.C. 6295(s))

Under 42 U.S.C. 6293, EPCA sets forth the criteria and procedures DOE is required to follow when prescribing or amending test procedures for covered products. EPCA requires that

[1] All references to EPCA in this document refer to the statute as amended through the Energy Efficiency Improvement Act of 2015, Public Law 114–11 (April 30, 2015).
[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated as Part A.

test procedures prescribed or amended under this section must be reasonably designed to produce test results which reflect the energy efficiency, energy use or estimated annual operating cost of covered products during a representative average use cycle or period of use and requires that test procedures not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3)) The test procedure for external power supplies is contained in the Code of Federal Regulations ("CFR") at 10 CFR part 430, subpart B, appendix Z, "Uniform Test Method for Measuring the Energy Consumption of External Power Supplies" ("Appendix Z").

Under 10 CFR 430.27, any interested person may submit a petition for waiver from DOE's test procedure requirements. DOE will grant a waiver from the test procedure requirements if DOE determines either that the basic model for which the waiver was requested contains a design characteristic that prevents testing of the basic model according to the prescribed test procedures, or that the prescribed test procedures evaluate the basic model in a manner so unrepresentative of its true energy or water consumption characteristics as to provide materially inaccurate comparative data. 10 CFR 430.27(f)(2). DOE may grant the waiver subject to conditions, including adherence to alternate test procedures. *Id.*

## II. Petition for Waiver: Assertions and Determinations

On June 8, 2017 and June 22, 2017, the Information Technology Industry Council ("ITI"), on behalf of four petitioners – Apple, Microsoft, Poin2, and Bitland -- filed individual petitions for waiver under 10 CFR 430.27 from the current DOE test procedure for EPSs for

several basic models of adaptive EPSs.[3] The petitioners stated that the specified basic models meet the provisions of the International Electrotechincal Commission's "Universal serial bus interfaces for data and power - Part 1-2: Common components - USB Power Delivery" ("IEC 62680-1-2:2017") specification.[4] All four waiver petitions were nearly identical in that they focused on each company's respective basic models of adaptive EPSs that utilize the IEC 62680–1–2:2017 specification and provided the same rationale for why the waiver and the suggested alternative test method detailed in each petition is necessary.[5] The IEC specification describes the particular architecture, protocols, power supply behavior, connectors, and cabling necessary for managing power delivery over a universal serial bus ("USB") connection at power levels of up to 100 watts ("W"). The purpose behind this specification is to help provide a standardized approach for power supply and peripheral developers to ensure backward compatibility while retaining product design and marketing flexibility. See generally, IEC 62680–1–2:2017 (Abstract) (describing the standard's general provisions and purpose).

In the view of the petitioners, applying the DOE test procedure to the adaptive EPS basic models identified in their individual petitions would yield results that would be unrepresentative of the active-mode efficiency of those products. The DOE test procedure requires that the average active-mode efficiency for adaptive EPSs[6] be measured by testing the unit twice—once at the highest achievable output voltage ("V") and once at the lowest. The test procedure

[3] The following are the basic models for which the petitioners seeks a waiver: Apple - A1718, A1719, A1540; Microsoft - AC-100; Poin2 - A16-045N1A; Bitland - A045R053L.
[4] International Electrotechnical Commission Universal serial bus interfaces for data and power— Part 1–2: Common components—USB Power Delivery specification, available *at https://webstore.iec.ch/publication/26174/*.
[5] The petitions are available at *https://www.regulations.gov/docket?D=EERE-2017-BT-WAV-0043*.
[6] An adaptive EPS is an EPS that can alter its output voltage during active-mode based on an established digital communication protocol with the end-use application without user-generated action. 10 CFR 430.2.

requires that active-mode efficiency be measured at four loading conditions relative to the nameplate output current of the EPS. See generally 10 CFR 430.23(bb) and Appendix Z. The lowest achievable output voltage supported by the IEC 62680–1–2:2017 specification is 5V and the nameplate current at this voltage output is 3 amps ("A"), resulting in a power output of 15W. The petitioners contend that while the IEC 62680–1–2:2017 specification requires the tested EPS to support this power output, the 15W at 5V condition will be rarely used and only for brief periods of time. Accordingly, the petitioners assert that the DOE test procedure's measurement of efficiency at this power level is unrepresentative of the true energy consumption of these EPSs.

Consequently, the petitioners seek a waiver from DOE to permit them to use an alternative test procedure to measure the energy efficiency of the specified adaptive EPSs by testing these devices at the lowest voltage, 5V, at an output power of 10W instead of 15W.

Under the current test procedure, when testing an adaptive EPS at the lowest achievable output voltage, the measured average active mode efficiency is equal to the average efficiency of the EPS tested at 100%, 75%, 50%, and 25% of the nameplate output current of the EPS at that voltage. Appendix Z, sections 2.f and 4(a)(i)(E), and Table 1. Thus, for an adaptive EPS with a lowest output voltage of 5V and a nameplate output current of 3A (resulting in a 15W output at 100% of the nameplate output current), the average active mode efficiency at the lowest output voltage would be equal to the average of the efficiencies when testing at 15W, 11.25W, 7.5W, and 3.75W. The petitioners suggested that these requirements be modified for their products when calculating the average active mode efficiency—namely, by using the average of four

loading conditions representing the same respective percentages of an output current of 2A. Doing so would mean that the average active mode efficiency would equal the average of the efficiencies when testing at 10W, 7.5W, 5W, and 2.5W. The petitioners suggested taking the results from this alternative approach and comparing them against the DOE efficiency requirements at 10W.

The petitioners assert that the test procedure for the lowest voltage level does not reflect actual field usage of these products. The IEC 62680–1–2:2017 specification requires USB-compliant products to support 15W at 5V but, according to the petitioners, adaptive EPSs operating at 5V do not exceed 10W for almost all usage conditions. Petitioners state that when charging a product that supports the USB power delivery requirements and is sold or intended to be used with the EPS, the IEC 62680–1–2:2017-compliant EPS charges at 5V only with a dead battery or fully charged battery (and then at 0.5A or less). At other times when more power is needed, petitioners state that the EPS will use a higher voltage rail (greater than 5V). (A "voltage rail" refers to a single voltage provided by the relevant power supply unit through a dedicated circuit/wire used for that voltage.) The petitioners also state that the same holds true for other end-use products that support the USB power delivery requirements manufactured by each of the respective manufacturers. The petitioners provided data to demonstrate that when using an adaptive EPS that supports the IEC 62680–1–2:2017 specification to charge an end-use product of a manufacturer different from the one who manufactured the EPS, it is likely that the product would charge at less than 10W at 5V, or may even be capable of exploiting the ability of an adaptive EPS to provide higher voltages for faster charging. The only occurrence where the adaptive EPS would be used at the full 15W at 5V is in the rare instance when used with an end-

use product that does not support the USB power delivery requirements, but instead supports the ability to draw 3.0A at 5V. Accordingly, the petitioners assert that the current DOE test procedure, which requires that efficiency be measured above 10W at the lowest voltage condition, results in a measurement that is grossly unrepresentative of the actual energy consumption characteristics of the adaptive EPS being tested.

On July 24, 2017, DOE published a notice announcing its receipt of the petitions for waiver, which also granted the petitioners interim waivers, solicited comments from interested parties on all aspects of the petition and specified an alternate test procedure that must be followed for testing and certifying the specific basic models for which the petitioners requested a waiver. 82 FR 34294. DOE did not receive any comments on the notice of petitions for waiver.

Based on the information provided by the petitioners, DOE has determined that the current test procedure at Appendix Z would evaluate the specified adaptive EPS basic models in a manner so unrepresentative of their true energy consumption characteristics as to provide materially inaccurate comparative data. This Decision and Order specifies that each petitioner test and rate these basic models in a manner identical to that which was provided in the interim waiver.

Each petitioner sought a test procedure waiver for certain basic models. This Decision and Order applies only to the basic models listed within this document and does not extend to any other basic models.

Consistent with 10 CFR 430.27(j), not later than 60 days after **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]** any manufacturer currently distributing in commerce in the United States a product employing a technology or characteristic that results in the same need for a waiver from the applicable test procedure must submit a petition for waiver.

Manufacturers not currently distributing such a product in commerce in the United States must petition for and be granted a waiver prior to the distribution in commerce of that product in the United States. Manufacturers may also submit a request for interim waiver pursuant to the requirements of 10 CFR 430.27.

## III. Consultations with Other Agencies

In accordance with 10 CFR 430.27(f)(2), DOE consulted with the Federal Trade Commission ("FTC") staff concerning the petitioners' petition for waiver. The FTC staff did not have any objections to granting waivers to petitioners.

## IV. Order

After careful consideration of all the material that was submitted by and on behalf of Apple, Inc. ("Apple"), Microsoft Corporation ("Microsoft"), Poin2 Lab ("Poin2"), and Hefei Bitland Information Technology Co. Ltd. ("Bitland") in this matter, DOE grants a waiver regarding the below specified basic models. Therefore, in accordance with 10 CFR 430.27, it is **ORDERED** that:

(1) Apple, Microsoft, Poin2, and Bitland must test and rate the external power supply basic models listed in paragraphs (1)(A) through (1)(D) of this section in accordance with the alternate test procedure set forth in paragraph (2) of this section.

(A) Apple must test and rate the EPSs of Apple brand basic models A1718, A1719, A1540 as set forth in paragraph (2) of this section.

(B) Microsoft must test and rate the EPSs of Microsoft brand basic model AC-100 as set forth in paragraph (2) of this section.

(C) Poin2 must test and rate the EPSs of Chicony brand basic model A16-045N1A as set forth in paragraph (2) of this section.

(D) Bitland must test and rate the EPSs of Chicony brand basic model A045R053L as set forth in paragraph (2) of this section.

(2) The alternate test procedure for the basic models listed in paragraphs (1)(A) through (1)(D) of this section is the test procedure for EPSs prescribed by DOE at 10 CFR part 430, subpart B, appendix Z, except that under section 4(a)(i)(E) and Table 1 of Appendix Z, the adaptive EPSs must be tested such that when testing at the lowest achievable output voltage (i.e., 5V), the Nameplate Output Current shall be 2A (which corresponds to an output power of 10W at the 100% loading condition). The 75%, 50%, and 25% loading conditions shall be scaled

accordingly and the nameplate output power of such an EPS, at the lowest output voltage, shall be equal to 10W.

(3) Representations. Apple, Microsoft, Poin2, and Bitland must make representations about the energy use of the adaptive external power supply basic models identified in paragraph (1) of this section for compliance, marketing, or other purposes only to the extent that such products have been tested in accordance with the provisions outlined above and such representations fairly disclose the results of such testing in accordance with 10 CFR part 430, subpart B, appendix Z and 10 CFR 429.37.

(4) These waivers shall remain in effect consistent with the provisions of 10 CFR 430.27.

(5) These waivers are issued on the condition that the statements, representations, and documentation provided on behalf of and by the petitioners are valid. DOE may revoke or modify these waivers at any time if it determines the factual basis underlying the petitions for waiver is incorrect, or the results from the alternate test procedure are unrepresentative of the basic models' true energy consumption characteristics. 10 CFR 430.27(k)(1). Likewise, any of the petitioners may request that DOE rescind or modify the waiver if the petitioner discovers an error in the information provided to DOE as part of its petition, determines that the waiver is no longer needed, or for other appropriate reasons. 10 CFR 430.27(k)(2)

(6) Granting of these waivers does not release Apple, Microsoft, Poin2, or Bitland from the certification requirements set forth at 10 CFR part 429.

Signed in Washington, DC, on March 9, 2018.

Kathleen B. Hogan, Ph.D.
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy