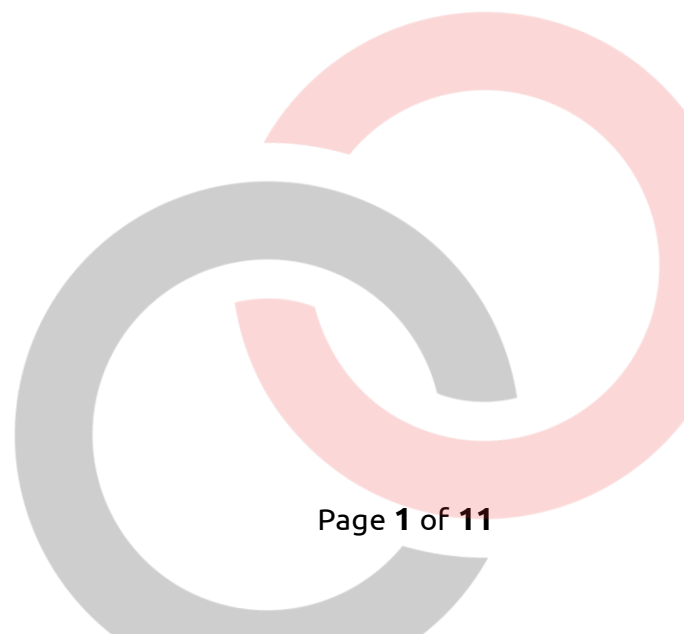




Australian Information Industry Association

Submission on

**Energy Efficiency of External Power Supplies
Consultation Regulation Impact Statement**



Introduction

The Australian Information Industry Association (AIIA) welcomes the opportunity to respond to the Energy Efficiency of External Power Supplies (EPS) Consultation Regulation Impact Statement (RIS). This submission outlines our feedback on the proposed changes to MEPS levels, scope, and testing methodologies, as well as broader implementation considerations. We support the objective of improving energy efficiency through greater alignment with overseas standards, where this can be achieved with minimal disruption to supply chains, design timelines, and regulatory compliance frameworks.

We thank the Department of Climate Change, Energy, the Environment and Water (the Department) for the opportunity to provide input and welcome further engagement to support a well-coordinated and practical transition to updated EPS requirements across the Australian and New Zealand markets.

A full list of acronyms used throughout this submission is provided in Appendix A.

Questions for Consultation

Do you support aligning the Australian and New Zealand EPS scope, MEPS, and nameplate requirements with international standards?

We support alignment with existing widely-used regional standards, particularly US DOE mark VI. The scope should be consistent with current US Federal Law and EU ErP Lot 7, and it should be clearly stated that products in EMC Class A are excluded. We also caution against dual compliance obligations where overseas standards diverge.

What are your views on increasing the MEPS requirements on EPS in New Zealand and Australia?

We support increasing MEPS to mark VI (Scenarios 3 and 4) as this aligns with global norms and presents minimal disruption. However, there appears to be a typo in the mark VI Average efficiency in active mode formula for multiple voltage EPS with 0 to 1W Nameplate output power. The DOE mark VI formula is $\geq 0.497 \times P_{no} + 0.067$, but the tables show $\geq 0.497 \times P_{no} + 0.1669$. Please correct the formula to reflect the current mark VI.

We caution against increasing to mark VII at this stage (Scenario 5) due to (1) unresolved technical issues (particularly for adaptive and multiple-voltage EPS), (2) lack of complete and robust modelling (especially by US DOE), and (3) recent necessary changes to test procedures. Not addressing these challenges risks supply shortages or unnecessary cost, as we discuss in sections of this document below.

Compliance

Do you have suggestions on how the compliance of EPS could be improved?

Support for purchasing products through official channels and accept internationally certified test reports to avoid redundant local certification.

We have assumed 1% of products will be check-tested. Is this sufficient to ensure compliance?

Yes, provided the products for check-testing are sourced from the open market.

Are there any specific products that will be unable to comply with mark VI or higher? If yes, please provide details whether this a technical issue.

Yes. The following products may face technical challenges in complying:

- Adaptive EPS >100W may struggle with no-load requirements.
- Wireless chargers are complex to test and should be excluded unless narrowly defined.
- Multiple-voltage/multi-port EPS face testing and efficiency challenges under mark VII proposals.

Issues with proposed Multiple-Voltage VII standards

While the revisions from Level VI to Level VII are not extraordinary for most single-port supplies¹, for multiple-voltage and multi-port power supplies the result is vastly different.

Our concerns are twofold.

- i) average efficiency requirements for multiple-voltage and multi-port power supplies at the lowest-voltage output are difficult to meet and, *if studied*, would likely prove to be expensive and not justified.

With respect to the average efficiency requirements at the lower-voltage output, it is important to highlight that for multiport USB-PD power supplies, these power supplies generally need to be tested twice, once at the highest voltage and once at the lowest-voltage. The average efficiency in either case would need to meet the proposed US DOE Level VII multiple-voltage/multi-port power supply energy efficiency requirements, which we believe would be difficult at the lowest-voltage output. Based on our review of the formulas it is not at all evident why the requirements for a multi-port USB-PD power supply at the lowest output voltage (5V) are much stricter than the requirements for a single-port USB-PD power supply at the lowest output voltage rail (5V).

Specifically, based on the proposed Level VII formulas the requirements for single-port output power supplies are

$$(1) \text{ average efficiency at LV} \geq 0.0834 * \ln \ln (P_{out}) - 0.0011 * P_{out} + 0.609$$

Substituting $P_{out} = 10W \text{ or } 5V * 2A$ as per the requirements² of Appendix Z yields:

$$(1) \text{ average efficiency at LV} = 0.0834 * \ln \ln (10) - 0.0011 * 10 + 0.609 = 79.1\%$$

¹ Despite this, there are some single-port USB-PD power supplies for which the new standards may be problematic, particularly for the no-load requirement for power supplies exceeding 240W for which the no-load requirements at the lowest-output voltage would seemingly require compliance with a limit of 75 mW.

² See generally, Appendix Z to SubPart B of 10 CFR 430 Section 6(a) which requires 100% = 5V, 2A or 10W when USB-PD power supplies are tested.

Meanwhile for a dual-port multiple-voltage external power supply both the formula, and the actual P_{out} to be used are different³. Specifically, where P_{out} for single-port USB-PD supplies is always 10W for the requirements at the Lowest Output Voltage, for multiple-voltage external power supplies the requirement is $10W * n$ where n is the number of ports. For n=2 this yields the following:

$$(2) \text{ average efficiency at LV (Dual port USB – PD supply)} \\ \geq 0.0782 * \ln(P_{out}) - 0.0013 * P_{out} + 0.643$$

$$(2) \text{ average efficiency at LV (Dual port USB – PD supply)} \\ \geq 0.0782 * \ln(20) - 0.0013 * 20 + 0.643$$

$$(2) \text{ average efficiency at LV (Dual port USB – PD supply)} \geq 85.13\%$$

- ii) No-load requirements for multiple-voltage and multi-port power supplies do not account for a per-port allowance, making compliance difficult for USB-PD multi-port power supplies with more than 2 ports and USB-PD controllers.

With respect to the no-load requirements, US DOE's proposed no-load limits for multi-port USB-PD adapters does not provide for a *per-port* allowance, something we believe is important to account for an increased number of controllers needed to conduct USB-PD negotiations as power supplies feature more than 2 ports.

Ultimately, as ITI (Information Technology Industry Council) explained in points (2)-(4) of their position paper, the anomalies likely stem from US DOE's lack of study of *adaptive* multiple-voltage power supplies, leading the US DOE to erroneously conclude that standards were appropriate.⁴

European Union Solution

Nonetheless, we acknowledge that the EU is planning to codify standards nearly equivalent⁵ to the proposed Level VII standards. The AIIA disagrees with this assessment and believes that the net effect of these standards will be to reduce the amount of multi-port power supplies in the EU instead of encouraging these versatile power supplies which use less materials than 2 equivalently sized single-port supplies.

Implementation

Do you agree with a 2-year transition timeline to further increase the MEPS to mark VII following international adoption (scenario 5)?

We do not support the adoption of the current US DOE VII proposal at this stage as detailed previously. However, if/when mark VII is adopted in the future, we strongly recommend a transition period of at least three years, consistent with the timeline currently proposed by the EU. A longer transition period is necessary to provide industry with adequate time to evaluate and adapt to the technical and compliance implications of

³ See Appendix Z to SubPart B of 10 CFR 430, Section 6(b)(iii)

⁴ See Appendix II – ITI March 29th 2024 Submission to US DOE. Available at <https://www.regulations.gov/document/EERE-2020-BT-STD-0006-0046>

⁵ The Europeans did add a per-port allowance for multi-port USB-PD power supplies.

mark VII, particularly in the Australian and New Zealand context where the standard testing voltage (230V) differs from the US (110V).

Do you agree with proposed expanded scope (scenario 4 and 5)?

We support expanding the scope to align with the current scope of US requirements, subject to clear definitions and exclusions for products such as fixed-wireless chargers and multiple-voltage EPS unless appropriate testing standards are adopted.

Do you think that fixed-wireless charging product should be included?

We seek to clarify that Fixed-Wireless Charging Products were never proposed to be included in the scope of the US DOE Level VII standards. Rather, Fixed-Wireless Battery Chargers were proposed to have been included as a new class of regulated battery chargers. The proposed requirements for regulated battery chargers were very different than that for external power supplies, specifically, the proposal regulated the efficiency of the entire charging process, from wall to battery in accordance with the test method in Appendix Y1, not Appendix Z (used for external power supplies).

Nonetheless, we would *not oppose* including fixed location wireless chargers in scope if a narrow definition of fixed-location wireless chargers were adopted and the requirements were appropriately tailored.

- A. Any no-load requirements for fixed-location wireless chargers must include a per charger allowance to allow manufacturers to sell wireless chargers that can charge multiple products at once.
 - a. The US DOE's former proposal on standards for fixed-location products had a single limit, 0.8W which would not allow for the design of a fixed-location charger product capable of charging 4 phones at once. We note that the EU adopted a no-load standard for wireless chargers in their recent revision of external power supply standards but this standard also does not provide an allowance for multiple chargers. This will inevitably lead to a shortage of wireless chargers in the EU market.
- B. Any efficiency standards for fixed-location wireless chargers must only apply to products that have *limited* functions beyond wireless charging.
 - a. The US DOE's former proposal for standards on fixed-location wireless chargers was fundamentally flawed because the DOE was attempting to regulate the energy efficiency of wireless chargers, but without having any control over the power consumed by other functions of the product. For example, the US DOE would have regulated the charging efficiency of a tablet and stylus combination, even though the tablet does more than just wirelessly charge a stylus. While the US DOE test method in Appendix Y includes provisions for putting products in their 'lowest power state' this is not sufficient as even the lowest power state of certain products which coincidentally double as wireless chargers (like a tablet which can incidentally charge a pencil), can consume too much power and therefore misrepresent the efficiency of the wireless charging mechanism.

- b. In light of this, if fixed-location wireless charging products are brought into scope, the standard must only apply to fixed-location wireless charging product combinations with limited functions *other than* wireless charging, for example, a toothbrush, or wireless phone chargers with no secondary functions, but not products like tablets and styluses.
- C. Any efficiency requirements for fixed-location wireless chargers must further define what combination would need to be tested, unlike the US DOE's proposal which was silent on the effect of certain accessories.
 - a. When the US DOE attempted to introduce efficiency standards for fixed-location wireless chargers, it did not consider the effect of accessories like phone cases on the charging efficiency. Indeed, certain phones which support fixed-location wireless charging can also support fixed-location wireless charging with or without a case. However, this case influences the efficiency of charging by varying the z-axis. If standards are to be included for these types of products, AUS/NZ must specify that the requirements apply only to products with as few optional accessories as possible.

Do you agree with the proposed family of models definition (scenario 4 and 5)?

We support but recommend removing reference to "standby power," which is not relevant to EPS and recommend further clarification for how adaptive EPS are classified within model families.

Do you agree with the proposed product classes (scenario 4 and 5)?

We support but recommend definitions for adaptive EPS should be clearer to avoid products falling into multiple classes.

Do you agree with the proposed alternative test Standards/methods (scenario 4 and 5)?

While the Department's proposal to permit testing using overseas test standards is welcomed, the identified EU and US test standards need important revisions to be relevant for the next decade. Instead, AIIA would support adopting Annex IV Point (3)-(5) of the proposed revision European Regulation on External Supplies to be published in the forthcoming months.⁶

Industry has long advocated for harmonised standards which help reduce trade-barriers and facilitate the entry of products in a variety of markets. We generally agree with the RIS's conclusion that adopting overseas testing standards will help reduce testing efforts. However, AIIA seeks to flag that for external power supplies specifically, the advance of USB-PD technology already calls for updates to the latest US DOE (2022) and EN (2013) standards.

More specifically, while the US DOE updated Appendix Z in 2022, the EU has adopted the Appendix as a transitional test method with provisions to test the power supply *without a*

⁶ See <https://ec.europa.eu/transparency/comitology-register/screen/documents/103547/2/consult?lang=en> for the voted on draft.

cable and to apply a standard cable correction factor. In the preamble of the latest revision of the EU's regulation, the EU explains:

“USB Type-C EPS are interoperable and can be used with USB cables with different properties that affect their overall energy efficiency to a varying extent. It is therefore important to ensure a level playing field for these EPS by considering a standardized and commonly used test cable with fixed parameters. Applying a correction factor to the results of the testing performed without a cable eliminates the need for such a physical USB cable at the test and reduces measurement uncertainty.”

AIIA endorses this position and would support specifying the Transitional Test Method specified in Annex IV Point 5 of Commission Regulation (EU) XXX⁷ as an alternative test method considering the applicable provisions of Annex IV Point 3.

Annex IV Point 3 also clarifies how to test dynamic external power supplies, a new type of power supply defined as “an EPS that is able to supply a maximum power only for a short period of time, in the order of several minutes, following by a lower power that can be indefinitely sustained, denoted as guaranteed power.”

Recommend promoting development of AS/NZS 4665

In Section 7, Conclusion, of the RIS, the policy option to allow products to be registered in accordance with EN standards or US DoE standards can be helpful optional alternatives to compliance with AS/NZS 4665.1 and AS/NZS 4665.2. If these overseas standards and test reports are accepted at face value when tested in a 230 V 50 Hz electrical mains environment and meets the Australian MEPS values, it should not be necessary to apply any ANZ national differences. Further, we encourage the Department in cooperation with EECA to work with Standards Australia to revise AS/NZS 4665.1 and AS/NZS 4665.2 to include the new energy efficiency ratings and test methods in these ANZ standards. These are needed so that domestic suppliers have a fallback standard to reference for locally-developed products, or for products that do not have EU or USA test reports. Note that the AS/NZS 4665 series was transferred to Committee TE-021 (from TE-001) some years ago.

Are products normally tested at both 110V and 230V for the US market?

In the US, products are tested only at 115V. But the same or similar SKU of products are tested at 230V and 127V for other markets including US, Mexico, Canada, China, South Korea, EU.

What are your views on requiring testing at 10% load (aligned with EU)?

We support testing at the 10% load level for reporting purposes only. We do not support including this in the active efficiency calculation or setting an individual 10% load limit.

Is there currently an additional cost for manufacturers/suppliers to re-test or re-certify products for registration in Australia or New Zealand?

Yes, re-registration, re-testing, and adapting products to expanded scope all involve cost and administrative burden.

⁷ The regulation will be published with a formal number this year (expected in July 2025).

EPS market dynamics

In this RIS, we have comprehensively outlined the market drivers influencing the EPS markets both domestically and internationally. Are international regulations driving the market, and if not, what is?

The evolving USB-PD standard is driving the market. It now allows power supplies up to 240W to use USB-PD Extended Power Range.

Do you have any feedback regarding the modelling approach and assumptions as detailed throughout this consultation paper? Further details can be found in Appendix One.

The US DOE's Technical Support Document incorporated in their February 2, 2023, proposal to propose new energy efficiency standards seemingly did not include any data related to adaptive power supplies, as highlighted by ITI in an ex-parte submission submitted in March 2024⁸, and includes incomplete data for simultaneous multiple-voltage devices. If the Department's goals are to bring these products in scope because they represent an overwhelming majority of the EPS market⁹, the Department must revise its study.

As the Department is aware, on February 3rd, 2023, the US DOE published proposed revisions for the Energy Efficiency of External Power Supplies. Alongside the publication, the US DOE published a Technical Support Document which was used as the basis for DOE's proposed changes. In February 2024, ITI [wrote](#)¹⁰ to the US DOE to flag key errors in the proposal, notably that the DOE seems to have only relied on a *single* database (one of two) in developing new standards for external power supplies. Of note was that the database that the US DOE seems to have used *did not include* any single-voltage adaptive power supplies or multiple-voltage adaptive power supplies. We would invite the Department to carefully review ITI's submission to US DOE, particularly Appendix II, points (1) – (5) and would welcome an opportunity to engage further on this topic with the Department.

The ramifications of this omission are great, most importantly they undercut the entire premise of the US DOE's study, i.e. that standards are technologically feasible and economically justified, because the proposal regulates a much larger scope of products (i.e. all power supplies, including adaptive power supplies) than those examined or studied (non-adaptive power supplies).

Particularly for Australia and New Zealand, the lack of inclusion of any adaptive power supplies within the US DOE's technical study is at odds with this Department's goal to expand the scope of EPS regulation to include adaptive power supplies and multiple-

⁸ See Appendix II – ITI March 29th 2024 Submission to US DOE. Available at <https://www.regulations.gov/document/EERE-2020-BT-STD-0006-0046>

⁹ Consultation RIS at Page 4.

¹⁰ See Appendix II – ITI March 29th 2024 Submission to US DOE. Available at <https://www.regulations.gov/document/EERE-2020-BT-STD-0006-0046>

voltage external power supplies, which, according to the Department’s study now make up a total of 87% of the market.¹¹

Additional Comments

Net Benefit Estimate

The RIS states a net benefit of \$28.8 million over 15 years from alignment with EU and US standards. This equates to approximately \$2 million per year — a modest figure that may not sufficiently justify the regulatory burden imposed.

Source of Imports

The RIS assumes minimal disruption due to alignment with EU and US standards. However, significant volumes of EPS products are imported from China and other Asia-Pacific economies. The impact on these supply chains is not adequately considered.

Definition of International Standards

The RIS refers to EN and US DOE standards as “international standards.” This is incorrect — they are regional standards. Australia and New Zealand have no input on their development or consensus for publication. True international standards are developed by ISO, IEC, or ITU. Adoption should not proceed on the basis that these are globally agreed norms.

Technical Consistency vs Equivalence

The RIS suggests products compliant with EN or US DOE standards will also comply with AS/NZS 4665. Technical consistency does not guarantee equivalence. AS/NZS 4665 is based on a now-outdated US EPA standard and differs in several respects.

Acceptance of Test Certificates

Acceptance of overseas test reports will only reduce compliance costs if reports are accepted without re-certification. In practice, Australia requires mutual recognition arrangements (MRAs) for this to occur, including recognition of test laboratories. Test reports should only be recognised if testing is performed based on the ANZ electrical environment.

Conclusion

The AIIA supports the adoption of updated MEPS requirements consistent with US DOE mark VI and, where appropriate, a carefully defined expansion of scope. However, we caution against premature adoption of mark VII or the inclusion of EPS types not yet adequately supported by overseas testing standards, including fixed-location wireless chargers and multiple-voltage products.

We encourage the Department to ensure that regulatory changes are grounded in finalised overseas standards, supported by sufficient transition periods, and informed by a complete understanding of local supply conditions.

¹¹ Consultation RIS at Page 8.

We welcome continued engagement with the Department to support a smooth transition to updated EPS standards and ensure consistency with both industry capability and global regulatory alignment.

Should you require further information, please contact Ms Siew Lee Seow, General Manager, Policy and Media, at siewlee@aiaa.com.au or 0435 620 406, or Mr David Makaryan, Advisor, Policy and Media, at david@aiaa.com.au.

Yours sincerely
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About the AIIA

The AIIA is Australia's peak representative body and advocacy group for those in the digital ecosystem. Since 1978, the AIIA has pursued activities to stimulate and grow the digital ecosystem, to create a favourable business environment for our members and to contribute to Australia's economic prosperity. We are a not-for-profit organisation to benefit members, which represents around 90% of the over one million employed in the technology sector in Australia. We are unique in that we represent the diversity of the technology ecosystem from small and medium businesses, start-ups, universities, and digital incubators through to large Australian companies, multinational software and hardware companies, data centres, telecommunications companies and technology consulting companies.

Appendix A: Acronyms

Acronym	Full Term
AIIA	Australian Information Industry Association
EPS	External Power Supply / Supplies
RIS	Regulation Impact Statement
MEPS	Minimum Energy Performance Standards
US DOE	United States Department of Energy
EU	European Union
ErP	Energy-related Products (Directive)
EN	European Norm (EU standard)
EMC	Electromagnetic Compatibility
USB-PD	USB Power Delivery
MRA	Mutual Recognition Agreement
AS/NZS	Australian/New Zealand Standard
ISO	International Organization for Standardization
IEC	International Electrotechnical Commission
ITU	International Telecommunication Union
APAC	Asia-Pacific
ANZ	Australia and New Zealand