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Australian Competition and Consumer Commission
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To whom it may concern,

Productivity Commission

The Total Environment Centre (TEC) welcomes the opportunity to engage with the Productivity Commission (PC) and provide an additional response to the draft recommendations and request for information on *household, consumer and emerging electronics* as outlined in the interim report *Australia's circular economy: Unlocking the opportunities.*

Since our initial submission a number of key documents have been released, including:

1. DCEEW's National Waste Action Plan 2024 (NWAP)[1]
2. DCEEW's *Australia's Circular Economy Framework; Doubling our circularity rate*.[2]
3. Circular Economy Ministerial Advisory Group's Final Report[3]
4. The Senate Environment and Communications Reference Committee report into waste reduction and recycling policies, *No time to waste.*[4]

In this time, voluntary stewardship schemes have continued to report dismally low collection rates for currently targeted items, while foreshadowing unrealistic plans to increase the range of products for collection and recycling, without any targets for waste reduction through improved design, repair or reuse.

Only NSW has made progress towards regulation with the introduction of the *Product Lifecycle Responsibility Act 2025.*[5] The NSW government has indicated an intent to regulate batteries under this Act[6] but are aiming for further action in 2025. The environmental risks, and the battery fire risk in particular, present nationwide problems. It is now more clear than ever that voluntary schemes in

[1] DCEEW (2024) National Waste Policy Action Plan. Available online.
[2] DCEEW (2024) *Australia's Circular Economy Framework; Doubling our circularity rate.* Available online.
[3] Circular Economy Ministerial Advisory Group (2024) The Circular Advantage: Unlocking innovation, environmental resilience, productivity and net zero opportunities through a uniquely Australian circular economy transition. Available online.
[4] Senate Environment and Communications Reference Committee (2025) *No time to waste - Waste reduction and recycling policies*. Commonwealth of Australia.
[5] https://legislation.nsw.gov.au/view/html/inforce/2025-04-09/act-2025-022
[6] NSW Government (2025) *Product Lifecycle Responsibility Bill (2025) Statement of Public Interest.* Available online

this area will not be able to achieve sufficient circular economy and safety outcomes to meet the targets of the NWAP.

We urge the PC to consider recommendations to:

1. Legislate a Circular Economy Act, in accordance with the recommendation of the Circular Economy Ministerial Advisory Group, and the recent report from the Senate Environment and Communications Reference Committee.[7]
2. Establish a cross-jurisdictional circular economy action taskforce[8]
3. Amend recommendation 9.2 of the interim report.
4. implement actions outlined under the heading *"Government role in reducing barriers to repair and reuse",* including, most relevantly:
    a. establishing a single national mandatory stewardship scheme for all household, consumer and emerging electronics
    b. adopting a French style repair voucher system, to reduce the consumer cost of repairs.

The recommendation to regulate a single mandatory stewardship scheme for all household, consumer and emerging electronics would be in line with the representations made by the state and federal Environment Ministers in November 2023, which indicated that regulation for a product stewardship scheme over electrical and electronic equipment was already progressing.[9] Such a model reduces consumer and producer confusion, avoids the duplication of administrative and logistic costs, and increases prospects for Australia to meet the targets of the NWAP. However, if individual action by states is necessary - then it should occur - with ongoing harmonisation efforts following.

This is an area with an embarrassingly long history of delays and substandard solutions. Expanding ineffective voluntary schemes is unlikely to yield any greater results and delays the real action required.

Recommendations 9.1 & 9.2

We thank the PC for the recommendations at 9.1 & 9.2 of the Interim Report. We would like to draw your attention to two omissions in 9.2 that ought to be addressed. Firstly, recommendation 9.2 did not include targets for waste or pollution reduction at the design phase. In terms of both the *Waste Hierarchy*[10] and the *Circularity Ladder*,[11] priority must be given to higher level actions given their greater capacity for waste reduction. The DCEEW rightly cites designing out waste and pollution as the first of the key principles of the circular economy,[12] and accordingly we would like to see the importance of this principle reflected in the recommendation.

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[7] Senate Environment and Communications Reference Committee (2025) *No time to waste - Waste reduction and recycling policies*. Commonwealth of Australia. page xi

[8] In line with recommendation 3 of the Senate Environment and Communications Reference Committee (2025) *No time to waste - Waste reduction and recycling policies*. Commonwealth of Australia. page xi and recommendation 5 of the Circular Economy Ministerial Advisory Group (2024) The Circular Advantage: Unlocking innovation, environmental resilience, productivity and net zero opportunities through a uniquely Australian circular economy transition. Page 108.

[9] Environment Ministers Joint Communique 10 November 2023. Available here.

[10] DCEEW (2024) National Waste Policy Action Plan, page 4.

[11] *Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle* (excluding *Recover*). Potting, J. et al. (2017), *Circular Economy: Measuring Innovation in the Product chain.* Online:

[12] DCEEW (2024) *Australia's Circular Economy Framework; Doubling our circularity rate.* page 7

Design targets could be linked to durability and repairability disclosures of recommendation 9.1 allowing schemes to demonstrate improvements in durability and repairability over time. Specific targets aimed at reducing reliance on toxic chemicals, when safer alternatives exist should also be included. In the absence of legislative change, schemes that cover electronic goods requiring software updates should be given targets to ensure producers extend the availability of updates for a reasonable time period after the product has been purchased.[13]

Secondly, we note recommendation 9.2 referred to the introduction of reuse and repair targets to the NTCRS alone, citing a previous PC recommendation following the *Right to Repair Inquiry*. We draw your attention to the specifics of recommendation 7.1 in that prior report, which urged that repair and reuse targets should be included for ***any*** future e-waste schemes.[14] If the intent of the PC was to recommend repair and reuse targets for federal stewardship schemes that cover household, consumer and emerging electronics, this recommendation should be extended to cover B-cycle and Mobile Muster.

In addition to mobile phones, Mobile Muster collects a range of other consumer electronics with repair and re-use potential, including; home modems/routers, small streaming devices, landline phones, small smart speakers, hubs, wearables and activity trackers.[15] Similarly, the Bcycle battery scheme has also slowly started to expand into larger battery types, including emobility battery packs. These new items have a far greater potential for repair, refurbishment or secondlife than their original target handheld batteries.[16] Replacing damaged cells from battery packs, or saving those intact cells for other uses, has huge potential to keep battery cells circulating in the community for longer, and avoid premature recycling. Currently these repair and refurbishment activities are undertaken by private enterprises, without support from Bcycle.[17]

Future of Bcycle

Bcycle is currently seeking approval from the Australian Competition and Consumer Commission to expand their authorised anti-competitive conduct, to include activities that would cover the following household consumer electronics; and to expand their framework:

- Vacuum Cleaners,
- Personal Care equipment (e.g. electric toothbrushes, hairdryers, vibrators, razors)
- Telecommunication equipment (e.g. cordless phones, answering machines)
- Small Consumer Electronics (e.g. headphones, remote controls),
- Portable Audio & Video (e.g. MP3, e-readers, car navigation),
- Music Instruments,
- Audio, Hi-Fi, speakers (incl. audio sets)
- Cameras (e.g. camcorders, photo & digital still cameras),
- Household Tools (e.g. drills, saws, high pressure cleaners, lawn mowers),
- Toys (e.g. car racing sets, electric trains, music toys, biking computers, drones),
- Game Consoles,

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[13] in line with recommendation 3.1 of the Productivity Commission (2021) *Right to Repair Inquiry Report.* Available here. We say that a reasonable time period should be at least as long as the estimated lifespan of that product when assessed for durability.

[14] See page 243 of Productivity Commission (2021) Right to Repair Inquiry Report. Available here. We assume this was not intended to be limited to the proposed amendment to r7 of the *Recycling and Waste Reduction (Product Stewardship—Televisions and Computers) Rules* 2021

[15] Mobile Muster (2024) *Annual report 2024*. page 28. Available online here.

[16] Andrea Söldi (2022) *A second life for e-bike batteries*. Online Article for Impact Zh Aw. Available here.

[17] For example, Second Life batteries Australia. See: slbatteries.com.au

- Leisure equipment (e.g. sports equipment, electric bikes)
- Household medical equipment (e.g. thermometers, blood pressure meters)
- Professional medical equipment (e.g. hospital, dentist, diagnostics)
- Household Monitoring & Control equipment (alarm, heat, smoke, excl. screens)
- Professional Monitoring & Control equipment (e.g. laboratory, control panels)
- Electronic Cigarettes (Vapes) [18]

Despite depicting itself as a successful scheme, Bcycle has dismally low collection rates for the batteries Bcycle, currently failing to capture around 85% of their target batteries,[19] with no plans to increase that collection rate to cover even half of the waste produced by that industry,[20] let alone reach the 80% resource recovery rate set by the National Waste Policy Action Plan.[21] Their high mark target of a 30% collection rate is well below the European targets.[22] We note that 23 of the 31 countries tracked by the European Portable Battery Association, had collection rates higher than 45% in the three years 2020, 2021 and 2022.[23]

Bcycle is an industry-led voluntary stewardship scheme, designed as a collection and recycling scheme only. They have no incentives for participants to work towards design improvements that would reduce waste, encourage the use of materials recovered from recycling, promote preferential use of less toxic alternative materials, improve longevity or allow greater ease and efficiency in repair, reuse or recycling.

Without government intervention and regulation, voluntary schemes like Mobile muster and Bcycle, cannot address the free rider issue and are unlikely to achieve sufficient reductions in waste and pollution to meet the targets of the NWAP.[24] Bcycle should be phased out and new mandatory product stewardship arrangements put in its place. We understand this is a view shared by key waste and recycling industry stakeholders, and even some state governments (further discussion below).

Information request 9.1

We understand the PC is interested in barriers to the supply of, and demand for, reuse and repair services.

Comparative costs is a well known barrier to demand. In relation to reuse, producer reluctance, unsuitable collection infrastructure and consumer cultural issues have been identified as barriers to demand in the UK.[25] Those same factors are also likely to impact repair and reuse in Australia.

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[18] Bcycle (2025) Application to ACCC. page 90. Available online.
[19] Bcycle (2024) Positive Charge Report. Page 7. With a collection rate of around ~15%, from which they recover 73% from those materials, they have a resource recovery rate of 10.95% of the total battery waste produced, being well short of the 80%
[20] The highest collection rate projected by Bcycle in their recent application to the ACCC was 30% of battery waste arising (See; Bcycle (2025) Application to ACCC. Page 82). Presently Bcycle's recycling efforts recover around 73% of materials from batteries collected. Should that continue for a 30% collection rate, the resource recovery rate f would be the equivalent of just under 22% of the total waste produced.
[21] Target set in both the 2019 and 2024 action plan, to be achieved by 2030. While this is an average target by weight across all waste streams, all stewardship schemes should strive to meet this target.
[22] 63% by 2027 and 73% of batteries placed on market by 2030. see EPBA website available here.
[23] Landbell & SargisEPR (2024) *The collection of waste portable batteries in Europe 2021-2022 data.* page 6 Available here. 45% of batteries are placed on the market.
[24] Page 7 of our initial submissions dated 31 October 2024 expands on the reasons why.
[25] C. Cole, A.Gnanapragasam, T. Cooper, J. Singh (2019) Assessing barriers to reuse of electrical and electronic equipment, a UK perspective. Resources, Conservation & Recycling: Volume 1, 2019. Available online.

As highlighted by Choice, replacing a microwave light can cost between $50-$100, whereas a new choice recommended microwave costs as little as $50.[26] Similarly, in July last year, the writer visited the Bower repair cafe in Sydney for an inspection and fix costing $30.[27] A new toaster from coles at the time cost only $25.[28] The producers of the toaster had chosen to use dome top screws, which could only be removed by drilling them out. As this would be a time consuming process, worth more in work-hours than the $30 fee would cover, before a proper inspection and diagnosis could be made, I was instead provided with a substitute toaster that had previously been repaired. This highlights the importance of design targets in stewardship programs, not only to eliminate built-in obsolescence, but to ensure ease of access to allow for repair.

Additional barriers to services may include the cost on community organisations to train and provide insurance for personnelle to carry out these repair activities. Many of those same barriers that were identified by the PC as impacting motor vehicles and agricultural machinery impact household, consumer and emerging electronics, particularly those relating to software updates, and the ability of repairs to run diagnostics, or access schematics, or obtain suitable replacement parts to undertake repairs.

Government role reducing barriers to repair and reuse

1. Legislative amendments to ensure electronic products remain serviceable and repairable for a reasonable period of time after purchase, and removal of unnecessary Copyright laws that prevent third-party repairers from accessing repair information required to carry out repairs. This would include:
    a. Amending the Australian Consumer Law to include a new consumer guarantee for manufacturers to provide necessary software updates for a reasonable time period after the product has been purchased, with no option to limit or exclude that guarantee.[29] This would increase the quantity of otherwise working devices in circulation, and increase the incentive for consumers to repair rather than replace older items, safe in the knowledge updates will continue for longer.
    b. Amend the technological protection measures (TPM) regime in the Copyright Act 1968 and Copyright Regulations 2017 to better facilitate repairers' access to embedded information protected by TPMs necessary for issue diagnosis and repair.[30]
    c. Introduce a new "fair use" exception to the copyright act, that allows for the reproduction and sharing of repair information.[31]
2. Undertaking analysis to determine which classes of products would be suitable for legislated *repair supplies obligations*.
3. Facilitating the promotion of repair services and sharing and reuse schemes like the *Library of Things*.[32]

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[26] G.Smith (2024) *Is Black Friday the right time to upgrade your kitchen appliances?* Online article for Choice.com.au available here.
[27] https://bower.org.au/fix/
[28] Coles online advertised price as of 23 April 2025. Online.
[29] Recommendation 3.1 of the Productivity Commission (2021) *Right to Repair Inquiry Report*. Available here.
[30] ibid. page 35. Recommendation 5.1
[31] ibid. page 35. Recommendation 5.2. To ensure these amendments are not undermined by private contract, additional provision(s) to prohibit contracting out by agreement would need to be included as noted in recommendation 5.3.
[32] Such facilities maintain a collection of useful but only occasionally used items that can be loaned out for a short period of time - see: https://thesydneylibraryofthings.org.au and the www.innerwesttoollibrary.com.au/

4. Consider circular economy principles when awarding grants[33]
5. Continue regulating the use of chemicals of concern used in household, consumer and emerging electronics, and make safe handling and best practice guidelines freely available to those working in the repair and re-use services industry.
6. Regulate a single product stewardship scheme over all household, consumer and emerging electronics, including products currently covered by the NTCRS, and the poorly performing Mobile Muster and Bcycle.[34] This regulated scheme should be designed to include a sorting and testing process before undesirable products progress to the recycling stage. As electronic and electrical goods contain problematic heavy metals and persistent organic pollutants, a portion of the levies collected should be redirected by government outside of the scheme to fund the following:
    a. The establishment of a repair voucher scheme, similar to the one in operation in France since 2022.[35] Under the French scheme, consumers take their broken appliances to registered repairers, who apply a discount to the cost of the repair (currently between €7 and €50).[36] A monetary sum, equivalent to that discount is then transferred to the repairer funded by an extended Producer Responsibility scheme,[37] which also promotes the location of the repair services.[38] In the Australian context, we would envisage repair cafes and charity stores, as well as commercial and trade services, being capable of qualifying for registration. For transparency, and to avoid perceived bias, the provision of vouchers should be administered by the government, independent of the scheme, using funds generated by the scheme. A voucher based model has the benefit of reducing the consumer costs of repair, providing financial support for the repair industry through increased use, and increasing acceptance of repair as the norm.
    b. Subsidising training and insurance costs for the repair service. Electronic and electrical goods contain problematic heavy metals and persistent organic pollutants, as well as electrocution risks. As a minimum, stewardship schemes should contribute to these costs for community and charitable services.
    c. Waste management and nature repair. All forms of uncaptured waste, including emissions, risk escape into the biosphere where they impact biogeochemical cycles and local ecosystems. Unless stewardship schemes are collecting 100% of the waste arising, their products are likely to be entering waste streams or the local environment. Poor performing stewardship schemes should be required to contribute a greater extent to cover these costs. This could be through the purchase of Biodiversity Credits, Treasury Green bonds, or direct contribution to the federal government Environment Restoration Fund.

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[33] Recommendation 2 of the Circular Economy Ministerial Advisory Group (2024) T*he Circular Advantage: Unlocking innovation, environmental resilience, productivity and net zero opportunities through a uniquely Australian circular economy transition.* Page 107. We note the federal DCEEW (2024) *Environmentally Sustainable Procurement Policy* embed circularity principles (available here). We note this policy does not have targets, and does not apply to State, Territory or local government. We note the recommendation to extend this cover by the *Senate Environment and Communications Reference Committee,* No time to waste.

[34] As envisaged by the DCEEW in the *Wired for Change* paper

[35] Art. L541-10-4 Loi anti-gaspillage pour une économie circulair (The Anti-waste and Circular Economy Law)

[36] Right to Repair News, A comprehensive overview of the current repair incentive systems: repair funds and vouchers, 11 March 2024

[37] At present, this scheme only covers household appliances, clothes and shoes

[38] See: https://pro.ecosystem.eco/en/

Information request 9.2 - Product stewardship for small electronics, including embedded lithium-ion batteries

The general public needs simple, convenient and safe drop off locations in order to increase compliance. Multiple schemes for different types of household, consumer and emerging electronics creates confusion. A single, regulated scheme, as previously outlined in the DCEEW *Wired for Change* paper, avoids this problem.[39]

The voluntary scheme Bcycle should not be expanded to include other small electronics. The Bcycle model was designed as a recycling scheme only, with no incentives or targets on any other rungs on the *Waste Hierarchy* and the *Circularity Ladder*. Bcycle has very low collection rates compared to European schemes and no public strategy to increase collection to anywhere near the levels needed to meet the 80% resource recovery rate set by the National Waste Policy Action Plan 2024.

The most impressive feature of Bcycle, is the availability of collection units in convenient locations. The provision and service of those units if conducted by third parties, who presumably would contract services to any paying scheme. While those collection units are demonstrably capable of collecting small products for both the bcycle scheme and mobile muster scheme, as seen JB hi fi locations, [40] the working definition of "*small electrical and electronic equipment*" adopted by the DCEEW, includes products up to 20kg, and all items covered under the NTCRS,[41] which would require considerable space or extremely regular service to avoid overflow. Supermarkets do not appear to be an ideal location to collect or temporarily store larger ewaste.

Bcycle reports more than 5,300 drop off points across Australia.[42] While this initially sounds impressive, it translates to roughly one collection unit for every 5000 people,[43] and can be contrasted with the more successful lead acid battery collection model from the automotive industry, which had an estimated 15,500 collection points across Australia.[44]

We strongly recommend against a staged approach for implementing regulation or expanded stewardship schemes. The delays in this area should be a matter of public shame. A staged approach not only affords some producers a temporary reprieve from accountability, but will create additional confusion for the general public.

Producers and importers are well aware of the federal government's plans to regulate if they did not address the issues arising from their waste.

TEC has been calling for product stewardship in the form of extended producer responsibility (EPR) for e-waste for more than 20 years.[45] While there was hope NSW would enact legislation in the early 2000s following review of EPR under the *Waste Avoidance and Resource Recovery Act* 2001, industry opposition and debate stagnated progress. It was not until 2009 that State and Federal environment ministers came together to regulate televisions and computers under a formal federal scheme, now covered by the NTCRS. The *Product Stewardship Act of 2011* (now repealed), the legislation establishing the NTCRS in 2011, and the accreditation of *Mobile Muster* in 2014, gave hope that other industries contributing to the rise of e-waste would be compelled to take responsibility for

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[39] DCCEEW (2023) *Wired for Change: Small Electrical Products and Solar PV Systems Discussion paper.*
[40] see TEC(2024) Battery Crisis Update. page 9.
[41] DCCEEW (2023) *Wired for Change*
[42] Bcycle (2024) Positive Charge Annual Report. Page 7. Available here.
[43]Based on a population of 26.66m
[44] Wakefield-Rann, R., Florin, N., Jazbec, M., (2018) *Characterisation of battery collection channels in Australia*. Prepared for the Battery Stewardship Council, November, 2018, as cited by the battery Stewardship Council (2020) Application to the ACCC, page 59. Available here.
[45] NSW Government (2004) *Report on the Extended Producer Responsibility Preliminary Consultation Program*; page 2,16 & 33

their waste. Unfortunately, this piecemeal approach of establishing single schemes for cohorts of e-waste, has meant the majority of e-waste has not had accredited stewardship programs in place.[46]

Electrical and electronic products, beyond those already covered by the NTCRS, were added to the Ministers priority list on 30 June 2016.[47]

In December 2021, the then Department of Agriculture, Water and the Environment published the Stewardship for Consumer and Other Electrical and Electronic Products Discussion Paper. Thirty public submissions were received, the vast majority supportive of formal stewardship, but no regulatory interventions were made. In June 2023, the federal DCEEW released a further discussion paper proposing a much needed regulated scheme to cover PV and small electrical products. Sixty six submissions were published, the majority of which supported intervention to ensure stewardship over PV and small electrical products occurred. On 10 November 2023, the State and Federal Environment Ministers joint communique reported the government would regulate a product stewardship scheme over electrical and electronic equipment.[48] Subsequently, in light of the government commitment to develop a mandatory product stewardship scheme, the minister removed this category of waste from the 2023-2024 priority list.

Since then however, the department indicated progress on that proposed scheme has been delayed indefinitely, and that a recycling scheme for PV alone was their priority.[49] While PV waste is increasing rapidly, it's increasing from a low starting point. PV solar waste represented 0.96% of the total global e-waste arising in 2022.[50] Small electrical products make up the largest category of e-waste globally by weight.[51]

A staged approach to implementation, or expansions of voluntary schemes, delays the urgent action that is needed. A single national regulated stewardship scheme capable of covering all household, consumer and emerging electronics to ensure all producers contribute their fair share to the costs needed to mitigate the environmental impacts from these problematic products. However, if individual action by states is necessary - then it should occur - with ongoing harmonisation efforts following (as has successfully occurred with container refund schemes).

TEC thanks you for the opportunity to engage with the Productivity Commission on this occasion.

Kind regards,

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[46] As noted in our previous submissions.
[47] Minister Priority List 2016-2017. Available here.
[48] https://www.dcceew.gov.au/sites/default/files/documents/emm-communique-10-nov-2023.pdf
[49] Hansard (2024) Senate Inquiry into the effectiveness of the Albanese Labor Government's waste reduction and recycling policies in delivering a circular economy. Public hearing 29 May 2024:
[50] Baldé, et al (2024) *Global E-waste Monitor report*, page 27. 0.6bkgs, however, it should be noted that figure is expected to grow exponentially to 2.4b kgs by 2030. It's been estimated that Australia will produce 100,000 tonnes of PV panel waste by 2035; See: Equilibrium (2019) *PV Systems Stewardship Options Assessment Second Phase Stage Eight – Final Report p.20*
[51] Baldé, et al (2024) Global E-waste Monitor report, page 10

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