

# Battery Stewardship Council



## Regulatory Options Assessment

A Report by MRA Consulting Group

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## Regulatory Options Assessment

A Submission to Battery Stewardship Council (ABN 56 631 941 341)

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## Glossary of terms

<b>ACCC</b>	Australian Competition & Consumer Commission
<b>BESS</b>	Battery energy storage system
<b>BIWG</b>	Battery Industry Working Group
<b>BSC</b>	Battery Stewardship Council
<b>DCCEEW</b>	Department of Climate Change, Energy, the Environment and Water
<b>EBU</b>	Equivalent battery unit (24g)
<b>EV</b>	Electric vehicle
<b>FY</b>	Financial year
<b>FY23, FY24</b>	Financial years 2023 and 2024 - The Australian tax year starts from the 1 <sup>st</sup> of July and runs through to the 30 <sup>th</sup> June of the following year
<b>IWG</b>	Implementation Working Group
<b>PSO</b>	Product Stewardship Organisation
<b>RAWR Act</b>	Recycling and Waste Reduction Act 2020
<b>RVM</b>	Reverse vending machine

# 1. Executive summary

The Battery Stewardship Council (BSC or “the Council”) was established in 2018 to bring stakeholders from across the battery supply chain together to create a circular economy for batteries. BSC launched a national voluntary industry-led scheme named B-cycle in 2022. B-cycle participants are required to comply with a set of commitments aimed at securing funding, enabling education, improving safety, and delivering transparency across the battery lifecycle. Rebates funded by a levy imposed on consumers of batteries at the point of sale are provided to B-cycle participants to help achieve these commitments.

The exponential growth of lithium-ion batteries and EV batteries, as well as changing market landscapes with new products such as vapes, drones, and residential Battery Energy Storage System continue to alter the risk profiles of batteries. As such, BSC is currently imposed with several challenges in relation to delivering product stewardship for batteries in Australia. These challenges include geographically dispersed collections and costly transportation, expanding waste streams and risks, insufficient volumes to motivate investment, burden on local communities, difficulties implementing stewardship processes to online sales, loss of valuable resources, and costs of service delivery being higher than authorised rebates. To address these challenges BSC, has identified three solutions involving a change in levy structure model based on battery chemistry and product type, a review of rebates to address costs and geographical variation, and a regulatory reform to the RAWR act 2020. This paper investigates provides a comparison and analysis of potential options for the regulatory reform.

Options are equally weighed against evaluation criteria adapted from the Battery Recycling Industry’s Preliminary Feasibility Assessment. Outcomes from the evaluation are delivered through the traffic light system where green equates to positive impacts, yellow to some positive impacts with trade-offs present, and red to negative impacts against the criteria. The assessment identified instruments 8, 7, and 5 as key instruments for consideration, in order.

Instrument 8 has performed well in the national coverage, brand building ability, community awareness and ease of implementation assessment criteria’s and has therefore been prioritised as the key recommendation in this report. Instrument 8 also supports the funding model where liable parties fund the scheme resulting in industry bearing operational costs and government with administrative costs.

# BATTERY STEWARDSHIP REGULATORY OPTIONS ASSESSMENT

Table 1: Options Summary Table

Instrument	Scheme operator	Scheme type	Feasible funding options	Cost to Industry & Government	Ease of deployment	Ease of implementation	Performance measures	National coverage	Ability to define scope in regulation	Ability to build brand/community awareness & engagement	Impact on infrastructure development & best practice	Impact on resource recovery	Impact on risk reduction	Accessibility	Summary
1. State Battery Stewardship Regulation	State governments, PSO	Voluntary or co-regulatory	Participants pay	●	●	●	●	●	●	●	●	●	●	●	●
2. Battery Refund Scheme	State governments, scheme coordinator	Voluntary or co-regulated	Participants pay	●	●	●	●	●	●	●	●	●	●	●	●
3. State Based Landfill Bans	State governments	Regulatory	Levy	●	●	●	●	●	●	●	●	●	●	●	●
4. NTCRS - Existing Framework	Federal government, co-regulatory arrangements	Co-regulatory	Liabe parties fund scheme	●	●	●	●	●	●	●	●	●	●	●	●
5. Expansion of B-cycle as a voluntary scheme	PSO (BSC)	Voluntary	Levy	●	●	●	●	●	●	●	●	●	●	●	●
6. NTCRS - New Dedicated Battery Stewardship Arrangement	Federal government, new product stewardship arrangement	Co-regulatory	Liabe parties fund scheme	●	●	●	●	●	●	●	●	●	●	●	●
7. Washington State Model	PSO	Mandatory	Industry funds scheme	●	●	●	●	●	●	●	●	●	●	●	●
8. BSC Proposed National Regulatory Model targeting free riders	Scheme participants and administrator	Co-regulatory	Liabe parties fund scheme	●	●	●	●	●	●	●	●	●	●	●	●

## 2. BSC structure and scope

The Battery Stewardship Council (BSC or “the Council”) was established in 2018 to bring stakeholders from across the battery supply chain together to create a circular economy for batteries. The Council launched B-cycle (“the Scheme”) in 2022, which is a national voluntary industry-led scheme authorised by the Australian Competition and Consumer Commission (ACCC) and accredited by the Australian Federal Government.

B-cycle participants, spanning across importers, retailers, drop off points, collectors, sorters, and recyclers, agree to comply with the Battery Stewardship Commitment, which places specific obligations to secure funding, enable education, improve safety, and deliver transparency across the battery life cycle. As demonstrated in Figure 1, a levy is imposed on imported batteries, which is then passed on to consumers in battery prices. The levy is used to fund rebates for B-cycle-accredited collectors, processors, and recyclers of used batteries. This also includes independent audits used to verify conformance with Scheme criteria.

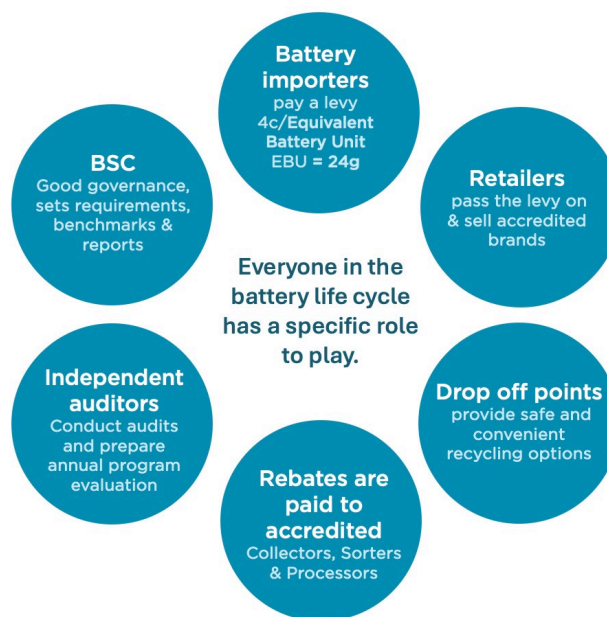


Figure 1: B-cycle participants and their role within the scheme

The current in-scope batteries include loose and easily removable batteries weighing less than 5 kilograms. This includes both single-use and rechargeable batteries, regardless of their chemistries (chemistries refers to what materials make up the chemical composition of the battery system, for example, Li-ion or lead acid). Figure 2 illustrates the scope of Scheme batteries in greater detail and provides a summary of in and out-of-scope batteries, to portray the span of batteries both currently covered, and yet to be included in the battery stewardship scheme.

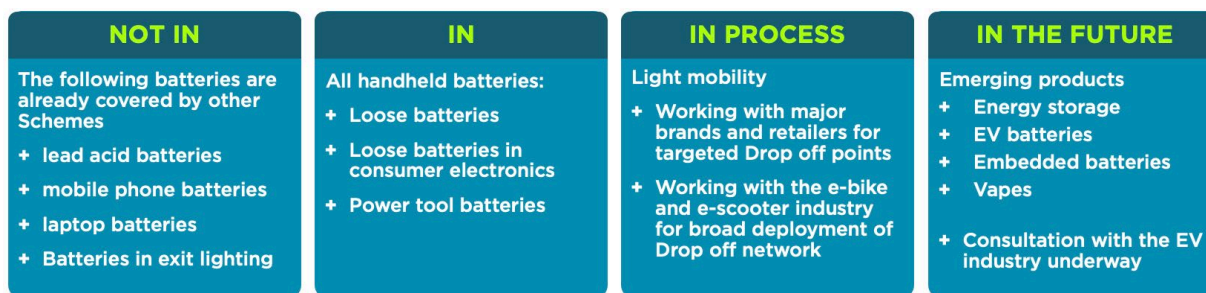


Figure 2: B-cycle's product scope

### 3. Current situation

A summary of B-cycle participants in FY23 is provided in Figure 3 below. According to the BSC's Positive Charge<sup>1</sup> report, these participants represent 90% of the loose battery market and 55% of the power tool battery market.



Figure 3: Number of B-cycle participants in FY23

#### 3.1 Battery Sales in Australia

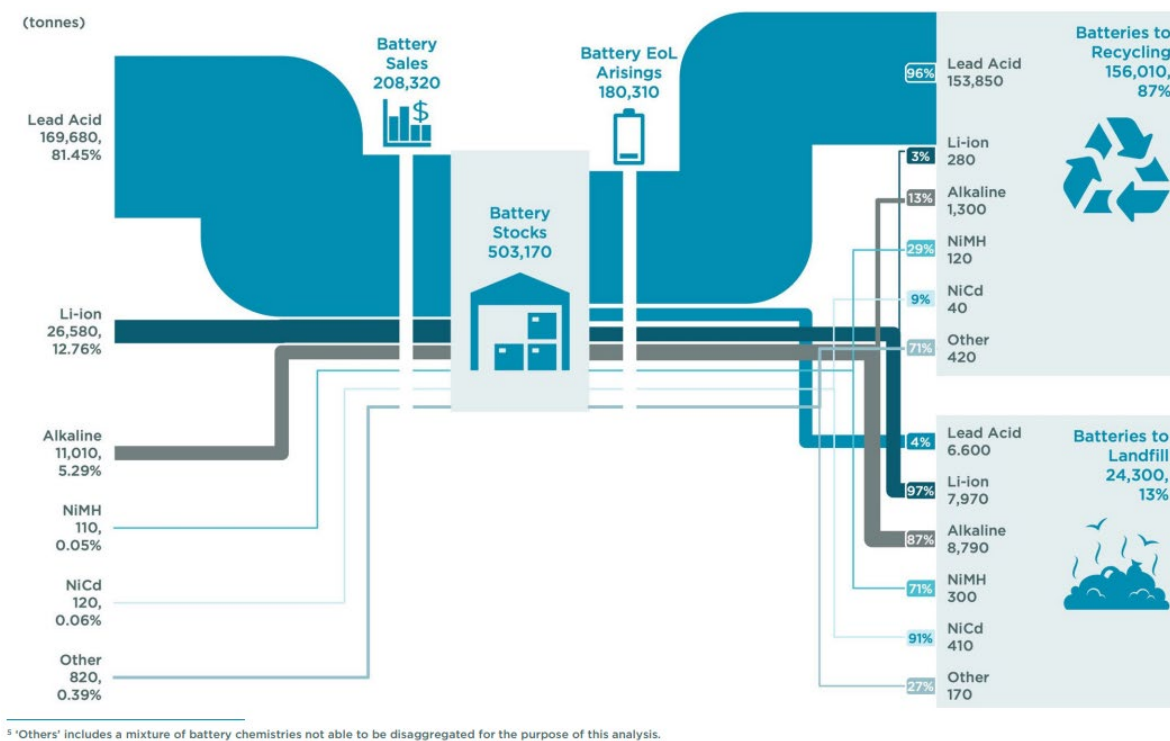
In 2021, Australian battery sales totalled 737 million individual batteries, or 8.313 billion units when standardised to Equivalent Battery Units (EBUs), equating to more than 200,000 tonnes. The estimated weight of in-use batteries was approximately 500,000 tonnes, and over 180,000 tonnes of batteries were considered end-of-life (EOL). Of the EOL batteries, approximately 156,000 tonnes were collected for recycling, indicating an overall recycling rate of 87% across all battery sizes. (Figure 4).

Of the total 737 million sold, 545 million batteries, or 74%, fall within B-cycle scope. These batteries accounted for just over 10% of the total weight of batteries sold in the country,

<sup>1</sup> <https://bcycle.com.au/wp-content/uploads/2023/12/B-cycle-Positive-Charge-Report-20231207.pdf>



amounting to 21,785 tonnes. Out of this quantity, it is estimated that 1,258 tonnes were collected for recycling, leading to a recycling collection rate of 7.2%.



**Figure 4: Australian Battery Flows in 2021. Source: BSC**

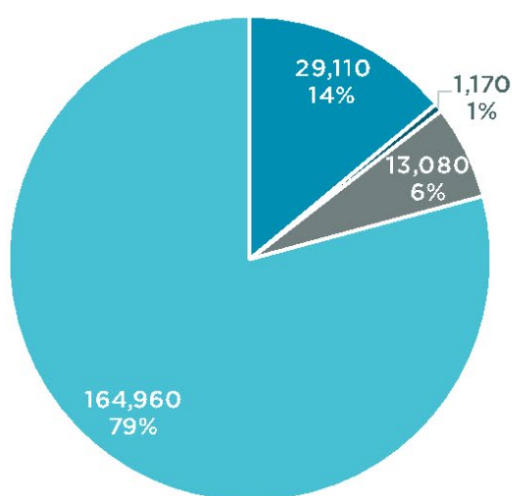
During FY23, the first full year of Scheme operations, the Scheme saw a 12% collection rate, of which 71% of used batteries were recovered. However, despite the scheme’s effectiveness in recovering waste batteries, a proportion of in-scope batteries still end up in landfill, which cause an average of three fires per day in waste and recycling infrastructure.

2021 Australian battery sales are characterised by the heavy weight of SLI (Starting, Lighting, and Ignition) and other industrial batteries > 5kg, which, despite only selling around 8 million units, equate to approximately 164,960 tonnes, due to their high weight per unit share. In contrast, handheld batteries account for 99% of battery unit sales (approximately 728 million), but only comprise 14% of sales by weight (29,110 tonnes). The market for Battery Energy Storage Systems (BESS) remained small with 10,000 units sold but is projected to grow significantly in the next 25 years. Electric Vehicle (EV) batteries comprised a minor portion of the total sales volume (less than 1% or 100,000 units) but were more substantial by weight (6% or 13,080 tonnes), indicating the heavier weight per battery in this segment (Figure 5).

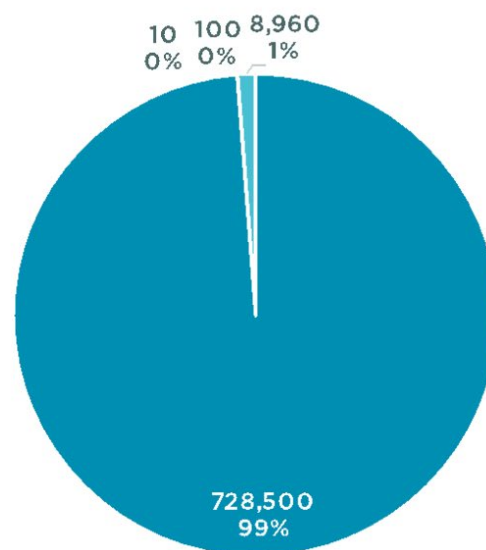
Approximately 29,000 tonnes of batteries under 5kg were sold into the Australian battery market in 2021. Of that, batteries covered under B-cycle scope represent 75% (or 21,785 tonnes) of handheld batteries sold that year (Figure 5).

- + Lithium-ion batteries constituted the largest portion of sales within this group, accounting for 43%, indicating increasing dominance of Li-ion batteries in the rechargeable battery market.
- + Alkaline battery sales were also significant, comprising 38% of sales. Alkaline batteries continue to be prevalent for single-use, standalone battery applications<sup>2</sup>.

**By Weight (tonnes)**



**By Number ('000)**



■ Handheld (<5kg) ■ BESS ■ EVs ■ SLIs and Other Industrial

**Figure 5: Total battery sales by market segment by weight, and by unit number in 2021.**

Source: [BSC](#)

## 3.2 Scheme Levy

Of the \$13.8 million levy collected in FY23, around 80% was paid out in rebates to battery collectors, sorters, and recyclers. The remaining 20% was spread across operational costs, levy and rebate management, communication and education, auditing and verification activities, and improved safeties. With the levy increasing from 3c to 4c from 15 January 2024, the BSC is expected to raise \$16.5 million by the end of FY24. The additional funding will be used to pay for the increase in collections, improving verification and audit processes, implementing the button battery safety strategy, and covering increasing operational expenses to ensure B-cycle remains a self-sustaining operation.

## 3.3 Current Situation - Conclusion

Promoting and increasing the number of B-cycle drop off points have significantly changed Australians' battery recycling behaviour. The BSC's consumer research in 2021 and 2023 showed

<sup>2</sup> <https://bcycle.com.au/wp-content/uploads/2023/05/Battery-MA-Report-FINAL-20230927.pdf>

an 8% increase in consumers reporting that they took used batteries to a collection point instead of placing them in the household rubbish or recycling bin. While B-cycle has demonstrated strong performance since its launch in early 2022 compared to that of European countries at a similar stage of their stewardship lifecycle, preparations must be made to respond to changing risk profile of batteries, primarily arising from the exponential growth of lithium-ion batteries and EV batteries, as well as changing market landscapes, with relatively new/emerging products such as vapes, drones, and residential BESS. This leads to rapidly expanding risks, including an increasing number of free riders.

Free riders pose a significant threat to the success of product stewardship schemes. By avoiding paying a levy, they undermine the market position of companies who participate in voluntary industry-led schemes, like B-cycle, by under-pricing their products. Leaving Governments and the community to shoulder the costs of their products' adverse impacts. Unregulated online sales of batteries, particularly embedded batteries, have been highlighted as one of the main channels for free riders although there is limited data on the size of the market. Considering that 24% of power tools—which commonly include embedded batteries—are purchased online, online sales must be considered in order to deliver effective battery stewardship outcomes. Additionally, BSC faces several challenges with delivering product stewardship for batteries in Australia. BSC identified these challenges as including:

- + Geographically dispersed collections, and rising costs of transport;
- + Rapidly expanding waste streams;
- + Volumes insufficient to motivate investment;
- + Rapidly expanding risks;
- + Burden on local communities;
- + Difficulties implementing stewardship processes to online sales;
- + Loss of valuable resources; and
- + Service delivery costs being higher than the authorised rebate.

To address these challenges, BSC has recommended the consideration of three main pathways moving forward:

- 1. A change to scheme levy structure with a differentiated model, based on battery chemistry and product type;**
- 2. A review of the rebate to address costs and geographical variation; and**
- 3. A regulatory reform to the Recycling and Waste Reduction Act 2020 (RAWR Act). The reform proposal is discussed in more detail in the Stewardship Reform Issues Paper.**

To explore these pathways, BSC is conducting a scheme review in 2024 to address the identified issues with a key focus on regulating free riders. The purpose of this paper is to investigate regulatory options that will address the challenges facing Australian battery stewardship and align with the BSC's regulatory reform agenda.

## 4. Regulatory options assessment

This section is comprised of a high-level review of regulatory options and possible governance models for battery stewardship in Australia. The options, from here onwards referred to as ‘instruments’, were either recommended for investigation by the BSC or derived from the BSC preliminary feasibility options assessment conducted in 2018. Additionally, the review was conducted with consideration of the RAWR Act effectively replacing the repealed Product Stewardship Act 2011, of which the options proposed by the BSC’s preliminary assessment were considered against.

### 4.1 Evaluation criteria

This analysis used a methodology consistent with the Battery Recycling Industry’s preliminary feasibility assessment to preserve consistency between the current and preliminary assessments. Each instrument is described and assessed against the previously established set of criteria from the preliminary feasibility assessment. This analysis incorporates three additional criteria into the assessment: performance measures, accessibility, and transparency. To represent the outcomes of the analysis, a traffic light system is used to indicate the performance of each instrument against the criteria:

- **Green:** Positive performance against criteria
- **Yellow:** Some positive performance against criteria, but with trade-offs or other considerations.
- **Red:** Negative performance against criteria

The criteria are as follows:

- + **Scheme operator** – identifies the party responsible for scheme operations
- + **Scheme type** – mandatory, co-regulatory or voluntary
- + **Feasible funding options** – describes how the instrument could be funded
- + **Cost to industry and government** – outlines the level of financial investment required from industry and government for the instrument
- + **Ease of deployment of instrument** – the feasibility with which the instrument could be brought into action
- + **Ease of implementation** – how easy/straightforward it would be to operate the instrument
- + **Performance measures** – what tools exist to evaluate the performance of the instrument
- + **National Coverage** – the extent to which the instrument can be implemented Australia-wide
- + **Ability to define scope in the regulation** – whether the desired scope of BSC could be easily defined in the regulation of the instrument
- + **Ability to build brand/community awareness and engagement** – how well the instrument allows for brand recognition to be developed, and for community engagement to be raised

- + **Impact on infrastructure development and best practice** – The impact the instrument has on encouraging infrastructure development and best practice
- + **Impact on resource recovery** – whether the implementation of the instrument would improve resource recovery rates
- + **Impact on risk reduction**– whether the implementation of the instrument would reduce risks to human and/or environmental health
- + **Accessibility** – how easily accessible are the services provided by the instrument to the Australian public
- + **Transparency** – considerations for scheme reporting, traceability, and transparency (Transparency is addressed in Table 1 at the end of Section 4).

## 5. High Level Review of Additional Instruments

The instruments reviewed are:

- + Instrument 1: State Battery Stewardship Regulation
- + Instrument 2: Battery Refund Scheme
- + Instrument 3: State Based Landfill Bans
- + Instrument 4: NTCRS – Existing Framework
- + Instrument 5: Expansion of B-cycle as a Voluntary Scheme
- + Instrument 6: NTCRS - New Dedicated Battery Stewardship Arrangement
- + Instrument 7: Washington State Model
- + Instrument 8: BSC Proposed National Regulatory Model


The following tables outline each instrument’s performance against the assessment criteria. The original ratings are the outcomes of the Battery Industry Working Group’s *Preliminary Feasibility Assessment of Regulatory Options for Achieving Battery Stewardship in Australia*. The review ratings are the outcomes of this assessment, which considers the current situation of battery stewardship in Australia. Where table cells have been greyed out, a rating is not applicable, either because the criteria is descriptive (such as scheme type), or where new criteria have been assessed.

## 5.1 Instrument 1: BSC State Regulatory Model

Instrument 1	BSC Proposed State Regulatory Model	Review Rating
Description	<ul style="list-style-type: none"> <li>+ Whilst the Recycling and Waste Reduction Act 2020 (RAWR Act) provides a framework that can be used to establish product stewardship arrangements across the country, States have implemented their-own legislative instruments for product stewardship arrangements within their jurisdiction, and not directly linked to the RAWR Act.</li> <li>+ State-level Instruments include:                             <ul style="list-style-type: none"> <li>+ QLD: Waste Reduction and Recycling Act 2011</li> <li>+ NSW: Waste Avoidance &amp; Resource Recovery Act 2001</li> <li>+ VIC: Environment Protection Act 2017, Circular Economy (Waste Reduction and Recycling) Act 2021</li> <li>+ WA: Waste Avoidance and Resource Recovery Act 2007</li> <li>+ SA: Environment Protection Act 1993</li> <li>+ TAS: Environmental Management and Pollution Control Act 1994</li> <li>+ ACT: Waste Management and Resource Recovery Act 2016</li> <li>+ NT: Environment Protection Act 2019.</li> </ul> </li> </ul>	
Scheme operator	<ul style="list-style-type: none"> <li>+ State Governments</li> <li>+ Product Stewardship Organisations (scheme coordinators, and network operators)</li> </ul>	
Scheme type	<ul style="list-style-type: none"> <li>+ As not established under the RAWR Act, schemes can share attributes from voluntary, co-regulatory, and mandatory scheme types dependent on state legislation, but may not fit strictly into the definitions provided under the RAWR Act.</li> </ul>	
Feasible funding options	<ul style="list-style-type: none"> <li>+ PSOs can establish cost-recovery schemes to contribute to the funding of scheme operations. Most state legislation does not provide examples for what these could be.</li> <li>+ The determination of who is a liable party, and which liable parties would fund scheme operations and/or administration is dependent on state-legislation.                             <ul style="list-style-type: none"> <li>+ For example, under the Victoria Circular Economy (Waste Reduction and Recycling) (Container Deposit Scheme) Amendment Regulations 2023, first suppliers are required to make payments at a level that maintains sufficient scheme liquidity over time, allowing the Scheme Coordinator to pay scheme costs as they become due.</li> </ul> </li> </ul>	

Instrument 1	BSC Proposed State Regulatory Model	Review Rating
	<ul style="list-style-type: none"> <li>+ Liable parties could contribute to the funding of operating the arrangement, which can be made mandatory. Dependent on state legislation.                             <ul style="list-style-type: none"> <li>+ Payments directly to scheme administrator or operations</li> <li>+ Potential Joining fees for PSOs.</li> <li>+ Retailers to be held accountable, and suppliers required to join scheme.</li> </ul> </li> <li>+ Registration fees for members: cost borne by state governments and industry via a registration fee. Fee could be periodical (i.e. annual).                             <ul style="list-style-type: none"> <li>+ Liable parties could pay registration fee to assist in covering scheme administration, monitoring, and enforcement.</li> <li>+ Who liable parties are, is dependent on state legislation.</li> </ul> </li> <li>+ Where states have Container Refund Schemes described in their legislation, it may be possible to implement similar schemes for batteries using the framework provided by the container scheme.                             <ul style="list-style-type: none"> <li>+ For example, NSW, ACT, SA, and VIC each have legislation supporting container refund schemes for beverage containers.</li> </ul> </li> <li>+ Funding via tracking through transporters/collectors.                             <ul style="list-style-type: none"> <li>+ Liability could be verified via tracking and brand identification at the point of recycling.</li> <li>+ Consider linking tracking of collection and delivery to approved recyclers to a rebate administered by PSO that could assist in covering handling costs.</li> </ul> </li> <li>+ Some states may be able to leverage an environment protection levy or similar fund to assist in scheme establishment or battery stewardship operations.                             <ul style="list-style-type: none"> <li>+ For example, the Northern Territory Environment Protection Act 2019 establishes such a levy, to provide funding for carrying out of works for the remediation of environmental harm and other activities relating to protecting or enhancing the environment.</li> </ul> </li> </ul>	
<p><b>Cost to Industry and Government</b></p>	<ul style="list-style-type: none"> <li>+ Cost of recycling operations and infrastructure would be paid to local and state government. However, scheme members could fund the recycling operations at these facilities.                             <ul style="list-style-type: none"> <li>+ For example, the NSW Waste Avoidance &amp; Resource Recovery Act 2001 states that some agreements may require scheme coordinators to refund material recovery facility operators for waste that is processed by the facility.</li> </ul> </li> <li>+ Cost of scheme operations can be shared amongst industry participants, dependent on state regulation.                             <ul style="list-style-type: none"> <li>+ For example, the NSW Waste Avoidance &amp; Resource Recovery Act 2001 stipulates that a producer’s responsibility for a product (including financial responsibility) extends to the post-consumer stage of the</li> </ul> </li> </ul>	●



Instrument 1	BSC Proposed State Regulatory Model	Review Rating
	<p>product’s life cycle. Producers in this specific context include suppliers of the product in this State or a person having a proprietary interest in the name under which the product is supplied in NSW.</p> <ul style="list-style-type: none"> <li>+ State governments can charge a fee to PSOs for applications and agreement/approval processes.                             <ul style="list-style-type: none"> <li>+ Cost of establishment, maintenance, and verification of an accreditation process for recyclers.</li> </ul> </li> <li>+ Industry may incur additional administrative costs for compliance with multiple government systems, across states.</li> <li>+ Recyclers, transfer stations/transporters and other operational stakeholders may incur costs for the establishment and maintenance of an accreditation process.                             <ul style="list-style-type: none"> <li>+ For example, in the ACT, scheme coordinators and network operators must apply for approval for any agreements concerning network arrangements and collection point arrangements under the Waste Management and Resource Recovery Act 2016.</li> </ul> </li> <li>+ State level arrangements could be more expensive pro-rata than a national arrangement, as administrative infrastructure would have to be set up to manage the arrangement in each state.</li> <li>+ State level arrangements add the risk of state leakage.</li> </ul>	
<p><b>Ease of deployment</b></p>	<ul style="list-style-type: none"> <li>+ Challenging - The national level RAWR Act only deals with imports. State based arrangements would need to deal with state level retailers and distributors.</li> <li>+ State based regulation can be quicker to establish in comparison to national level regulations, but with challenges associated with disharmonised approaches.</li> <li>+ Deploying an arrangement for battery stewardship would require government support, and the creation of new regulation to cover targeted batteries.                             <ul style="list-style-type: none"> <li>+ For example, rolling an arrangement out in the ACT would require implementation of a Code of Practice (potentially multiple) by/to the ACT Government, as per the Waste Management and Resource Recovery Act 2016.</li> </ul> </li> <li>+ Different accreditation/approval processes for each state could be costly and effort intensive for industry, especially if industry was participating in multiple schemes across states.</li> <li>+ Collection channels would likely need to be developed. Establishment of collection channels may require approvals from government dependent on state. This might require input from both Government and industry depending on state regulation.                             <ul style="list-style-type: none"> <li>+ For example, a code of practice for collection, handling and treatment of wastes might be necessary and require approval from the minister under the ACT’s Waste Management and Resource Recovery Act 2016.</li> </ul> </li> </ul>	



Instrument 1	BSC Proposed State Regulatory Model	Review Rating
	<ul style="list-style-type: none"> <li>+ Larger retailers/brands may be required to participate in different arrangements per state, which could be difficult and expensive to administrate.</li> <li>+ Possibility for retailers/brands would be required to only engage in commerce with other accredited/signatory parties. Potential for state level differences to create difficulties for retailers/brands, causing reluctance to participate in arrangements.</li> </ul>	
Ease of implementation	<ul style="list-style-type: none"> <li>+ Government: Administrative costs usually fall to government.</li> <li>+ Industry: Challenging for industry to implement and operate multiple state schemes, each of which may require different participation and reporting requirements.</li> <li>+ Industry: State regulation can require industry to be responsible for scheme operations, including organising scheme funding, administration, management, and operation.</li> <li>+ Community: Local improvements likely, but continued uncertainty and ongoing lack of access to recycling options.</li> </ul>	●
Performance measures	<ul style="list-style-type: none"> <li>+ States can require product stewardship arrangements to include the creation of specific performance measures in their design.                             <ul style="list-style-type: none"> <li>+ For example, the Western Australia Waste Avoidance and Resource Recovery Act 2007 stipulates that product stewardship plans created by producers must include <i>targets and timeframes for avoidance, reduction, reuse, and recycling of waste</i>. This includes details on how this information <i>will be collected, assessed, and audited to ascertain whether the targets and timeframes specified in the plan have been met</i>.</li> </ul> </li> <li>+ Potential for reporting overlaps from state schemes when considering performance on a national level.</li> </ul>	●
National coverage	<ul style="list-style-type: none"> <li>+ Likely low national coverage. All states would have to successfully enact their own legislation for battery stewardship arrangements for coverage to be high on a national level. Discrepancies in scheme operations and establishment requirement across states makes this unlikely.</li> </ul>	●
Ability to define scope in regulation	<ul style="list-style-type: none"> <li>+ Scope could be defined in most state legislation; however, it is likely that state governments would choose a broader scope.</li> <li>+ Minister's priority list would likely influence what is selected in scope on the national and state levels. If the targeted batteries are not on the list, this may impact the likelihood of them being defined in scope.</li> <li>+ Some state regulation permits the implementation product stewardship arrangements or container deposit schemes for different products in the state.</li> </ul>	●

Instrument 1	BSC Proposed State Regulatory Model	Review Rating
	<ul style="list-style-type: none"> <li>+ For example, in NSW, the Waste Avoidance and Resource Recovery Act 2001 allows for the development of EPR schemes for different products in the state. If prioritised by the state, batteries could be specifically defined in the scope of proposed EPRs.</li> </ul>	
<p><b>Ability to build brand / community Awareness &amp; engagement</b></p>	<ul style="list-style-type: none"> <li>+ Multiple state programs could create difficulties in delivering a national brand thought to be important for significant resource recovery.</li> <li>+ Investment would be required to build brand awareness and community awareness &amp; engagement. It is likely this would not have much impact at the national level, as each state would be building brands largely independent of one another.</li> <li>+ State priorities would likely influence the level of community awareness and engagement for a waste product.                             <ul style="list-style-type: none"> <li>+ For example, The NSW Waste Avoidance and Resource Recovery Act requires the EPA to publish a priority statement each year regarding proposed EPR schemes. This suggests that the inclusion of batteries in such schemes would depend on their prioritisation by the EPA.</li> </ul> </li> <li>+ States could leverage pre-existing Container Refund Scheme marketing for increased awareness and engagement.</li> </ul>	●
<p><b>Impact on infrastructure development &amp; best practice</b></p>	<ul style="list-style-type: none"> <li>+ Minimal impact on infrastructure development and best practice.</li> <li>+ Some state regulation does not provide specific details on infrastructure development and best practices relating to product stewardship arrangements.                             <ul style="list-style-type: none"> <li>+ For example, the NSW The Waste Avoidance and Resource Recovery Act does not provide specific details on infrastructure development and best practices.</li> </ul> </li> </ul>	●
<p><b>Impact on resource recovery / risk reduction</b></p>	<ul style="list-style-type: none"> <li>+ Minimal impact on national resource recovery rates.</li> </ul>	●
<p><b>Impact on risk reduction</b></p>	<ul style="list-style-type: none"> <li>+ Minimal potential to reduce risk.</li> </ul>	●
<p><b>Accessibility</b></p>	<ul style="list-style-type: none"> <li>+ Due to the need for collection channels to be established in many states, this is difficult to determine. Unless government and industry both endeavour to provide convenient collection services to consumers, accessibility will be low, but may vary state to state.</li> </ul>	●

## 5.2 Instrument 2: Battery Refund Scheme

Instrument 2	Battery Refund Scheme	Review Rating
Description	<ul style="list-style-type: none"> <li>+ Battery Refund Schemes (BRS) could be established under the various state governments acts which cover deposit/refund schemes and other forms of product stewardship.                             <ul style="list-style-type: none"> <li>+ QLD: Waste Reduction and Recycling Act 2011</li> <li>+ NSW: Waste Avoidance &amp; Resource Recovery Act 2001</li> <li>+ VIC: Environment Protection Act 2017</li> <li>+ WA: Waste Avoidance and Resource Recovery Act 2007</li> <li>+ SA: Environment Protection Act 1993</li> <li>+ TAS: Environmental Management and Pollution Control Act 1994</li> <li>+ ACT: Waste Management and Resource Recovery Act 2016</li> <li>+ NT: Environment Protection Act 2019.</li> </ul> </li> <li>+ Consumers provided with drop-off facilities at which point they would receive a refund per battery.</li> <li>+ Scheme may be able to leverage existing container deposit/refund schemes, through use of locations or community awareness of how they function. If existing container deposit schemes are leveraged, consideration must be given to the differences between container and battery disposal. Unlike containers, batteries are dangerous and must be treated as such. The two streams must not be combined.</li> </ul>	
Scheme operator	<ul style="list-style-type: none"> <li>+ State government</li> <li>+ Scheme coordinator</li> </ul>	
Scheme type	<ul style="list-style-type: none"> <li>+ Mandatory. Current state-based container deposit scheme models identify eligible waste products, and assign responsibility to their suppliers.</li> <li>+ As with previous state-based model, refund schemes are usually legislated on the state-level under state legislation, and do not strictly fit the scheme types from the RAWR Act (voluntary, co-regulated, mandatory). Scheme responsibilities and operations can be divided between industry and government dependent on state legislation.</li> </ul>	
Feasible funding options	<ul style="list-style-type: none"> <li>+ Suppliers enter Supply Arrangement with Scheme Coordinator and make contributions to scheme. Contributions proportionate to market share of batteries participating suppliers sell in each state.</li> </ul>	
Cost to Industry and Government	<ul style="list-style-type: none"> <li>+ Cost to industry: Contribute towards the refund cost per battery. This would be calculated to cover ongoing scheme costs.</li> </ul>	●

Instrument 2	Battery Refund Scheme	Review Rating
	<ul style="list-style-type: none"> <li>+ The initial cost to ensure safe battery disposal is expected to be significant. A standalone fire safe container, which costs around \$17,000, would be required at each container drop off point. Additionally, the indicative cost to provide smaller storage containers to all households in Australia ranges from at least \$670 million to upwards of \$2.2 billion, depending on the capacity of the containers provided. Further detail is provided in Appendix B.</li> <li>+ In order to track the number of batteries for refund, new battery reverse vending machines (RVM) are required. While this technology existed in Europe, it is not currently a viable option as the companies producing the RVMs have since ceased operating. The type of batteries RVMs can accept is limited to consumer batteries only and no assessment has been made as to suitability for managing risks in the Australian environment. More information on RVMs is available in Appendix A.</li> <li>+ Industry would also borne the cost of finding a solution for button batteries, which lack the space for product barcodes for RVMs.</li> <li>+ First three months of fees could be estimated, and then modified as necessary based on subsequent invoicing periods reflective of actual redemption rates.</li> <li>+ Cost of establishing new scheme, returns database, and any associated infrastructure. Dependent on scheme structure, cost will be shared between state and local governments and industry.</li> <li>+ The economics are generally not sound compared to beverage containers. Typically, a \$15 refund per transaction is required to justify the administrative costs. However, the household battery weight that would equate to \$15 would be a huge fire risk (3.6kg at 10c refund/EBU). That is, unless every household is provided a firesafe container, the cost of which would be prohibitive.</li> <li>+ Additionally, for every 10c/container refund, CDS participants pay around 12.5c/container to partake in the scheme. This fee covers the collection infrastructure, transport, recycling, administration, and other operational costs. As batteries are dangerous goods that possess greater product variability in terms of materials and chemistries, they require much more complicated recovery processes than beverage containers. This will consequently drive up the cost to participate in the scheme, which will likely be passed on to consumers.</li> </ul>	
Ease of deployment	<ul style="list-style-type: none"> <li>+ Government impact                             <ul style="list-style-type: none"> <li>+ State required to implement or establish applicable regulations.</li> <li>+ Ideally, state, and local government would also calculate required redemption rates to align with national, state, and other targets. For example, the 80% resource recovery rate from all waste streams by 2030, set by the National Waste Policy Action Plan 2019.</li> </ul> </li> <li>+ Industry impact</li> </ul>	●

Instrument 2	Battery Refund Scheme	Review Rating
	<ul style="list-style-type: none"> <li>+ Requires state by state engagement, agreements, and reporting.</li> <li>+ Requires a tracking process to appropriately attribute responsibility across suppliers.</li> <li>+ Scheme establishment                             <ul style="list-style-type: none"> <li>+ New schemes would be required in each state.</li> </ul> </li> <li>+ Collection channels                             <ul style="list-style-type: none"> <li>+ Establishment or expansion of currently available collection channels.</li> <li>+ Potential to leverage currently existing drop-off/collection/transport infrastructure.</li> </ul> </li> </ul>	
<b>Ease of implementation</b>	<ul style="list-style-type: none"> <li>+ Government impact                             <ul style="list-style-type: none"> <li>+ Administrative burden borne by state governments.</li> </ul> </li> <li>+ Industry impact                             <ul style="list-style-type: none"> <li>+ Difficult for industry to implement multiple state schemes that may be based on different participation and reporting requirements.</li> </ul> </li> <li>+ Non-accredited batteries/battery products likely to free ride at drop-off points unless consumers are better educated, drop-off point staff are sufficiently trained.</li> </ul>	●
<b>Performance measures</b>	<ul style="list-style-type: none"> <li>+ Would require proficient tracking and reporting mechanisms to accurately measure performance.</li> <li>+ Redemption rates are a primary performance indicator</li> </ul>	●
<b>National coverage</b>	<ul style="list-style-type: none"> <li>+ Low, each scheme would be state level.</li> </ul>	●
<b>Ability to define scope in regulation</b>	<ul style="list-style-type: none"> <li>+ Legislation could define the scope of battery management for the refund scheme, but the diversity in battery sizes and chemistries complicates standardisation. State governments would likely favour a broad scope, but varying management requirements for different battery types may constrain the ability to deliver a refund scheme with a broad scope. For instance, while lead-acid batteries can be monitored through barcode scanning, similar to existing container deposit schemes, smaller batteries like button cells, lacking space for barcodes, would require alternative management methods and potentially infrastructure.</li> </ul>	●
<b>Ability to build brand / community awareness &amp; engagement</b>	<ul style="list-style-type: none"> <li>+ State based programs would vary by state. Difficult to create consistent brand and consumer.</li> </ul>	●
<b>Impact on infrastructure development &amp; best practice</b>	<ul style="list-style-type: none"> <li>+ May require the establishment expansion of drop-off/collection/transport infrastructure.</li> <li>+ Exploration and implementation of infrastructure to deliver refund scheme would be cost prohibitive. Minimal impact on infrastructure development &amp; best practice.</li> </ul>	●

Instrument 2	Battery Refund Scheme	Review Rating
	<ul style="list-style-type: none"> <li>+ As above, reverse vending machines with barcode scanners currently used for container deposit schemes would be able to facilitate refunds for consumer batteries only with barcodes on each unit, but alternative methods would be required for batteries without this capability. Due to the wide variety in size and chemistry of batteries, it is likely that exploring and implementing different infrastructure to allow for refund schemes to operate would be too expensive and not feasible to pursue.</li> </ul>	
<p><b>Impact on resource recovery</b></p>	<ul style="list-style-type: none"> <li>+ Increase to resource recovery rates per state, multiple state programs</li> <li>+ Increased diversion from landfill due to incentives-based program.</li> </ul>	●
<p><b>Impact on risk reduction</b></p>	<ul style="list-style-type: none"> <li>+ Risk is increased due to consumers storing increased quantities of batteries:                             <ul style="list-style-type: none"> <li>+ Dependent on scheme implementation, if batteries are stockpiled by consumers, then safety risks increase with potential for home fires, or swallowing of batteries by children and infants.</li> <li>+ It is important that the refund scheme does not encourage stockpiling, as this can increase human health risks, i.e. fires, swallowing of batteries by children, etc.</li> </ul> </li> <li>+ Battery terminals need to be taped up prior to disposal to avoid them touching inside the RVM and causing a fire</li> </ul>	●
<p><b>Accessibility</b></p>	<ul style="list-style-type: none"> <li>+ Potential for good consumer accessibility, dependent on the nature and availability of drop-off points.</li> <li>+ ALDI, Officeworks, Battery World and Bunnings stores are key battery recycling points in Australia. There are over 1,250 of these stores combined nation-wide. This is excluding smaller community, business, and government owned recycling centres.</li> </ul>	●

## 5.3 Instrument 3: State Based Landfill Bans

Instrument 3	State Based Landfill Bans	Review Rating
Description	<ul style="list-style-type: none"> <li>+ States would voluntarily implement landfill bans on batteries.</li> <li>+ In July 2019, Victoria implemented a landfill ban for e-waste and batteries.</li> <li>+ The 2022 Annexure to the 2019 National Waste Policy Action Plan announced that by 2024, all governments are to develop a common approach to restrict the landfilling of primary products, starting with lithium ion batteries and e-waste.</li> </ul>	
Scheme operator	<ul style="list-style-type: none"> <li>+ State governments</li> </ul>	
Scheme type	<ul style="list-style-type: none"> <li>+ Mandatory</li> </ul>	
Feasible funding options	<ul style="list-style-type: none"> <li>+ Levy at the point of drop-off</li> </ul>	
Cost to Industry and Government	<ul style="list-style-type: none"> <li>+ Transfer stations and drop-off locations will need investment and development. State and local governments would bear this cost.</li> </ul>	●
Ease of deployment	<ul style="list-style-type: none"> <li>+ Government Impact                             <ul style="list-style-type: none"> <li>+ State-level bans, no direct involvement from federal government</li> <li>+ State governments to conduct regulatory impact statements and will be responsible for the establishment of drop-off/collection infrastructure.</li> </ul> </li> <li>+ Additional collection channels would need to be developed.</li> <li>+ No involvement from industry</li> <li>+ States required to enact it's own landfill ban for batteries, and subsequently to manage the new stream of batteries.</li> </ul>	●
Ease of implementation	<ul style="list-style-type: none"> <li>+ Government Impact                             <ul style="list-style-type: none"> <li>+ State and local government responsible for implementation.</li> <li>+ Little to no responsibility for federal government</li> </ul> </li> <li>+ No involvement from industry.</li> <li>+ Improvements from increased collection channels for batteries, and diversion of batteries from landfill but does not guarantee access for recycling options.</li> </ul>	●
Performance measures	<ul style="list-style-type: none"> <li>+ State governments to conduct regulatory impact statements.</li> <li>+ Tracking of batteries collected in drop-off points</li> </ul>	●

Instrument 3	State Based Landfill Bans	Review Rating
National coverage	<ul style="list-style-type: none"> <li>+ National coverage would require each state to implement battery bans to landfill.</li> <li>+ Measures would need to be in place across state governments to prevent leakage.</li> </ul>	●
Ability to define scope in regulation	<ul style="list-style-type: none"> <li>+ Most landfill bans cover all battery types, not limited to rechargeable batteries.</li> <li>+ Scope would either be very broad: i.e., all batteries, or shorter and focused specifically on problem battery types such as lead-acid. Likely that government would prefer broader scope.</li> </ul>	●
Ability to build brand / community awareness & engagement	<ul style="list-style-type: none"> <li>+ Community awareness of battery bans to landfill could be overshadowed unless the ban was specific to batteries themselves, likely to be included under broader e-waste to landfill ban.</li> <li>+ Does not permit creation of national branding scheme for a PSO</li> </ul>	●
Impact on infrastructure development & best practice	<ul style="list-style-type: none"> <li>+ Some incentive for industry but does not solely enable the creation of PSO for infrastructure development.</li> <li>+ No opportunity for investment in best practice unless part of government upgrades to transfer stations.</li> <li>+ Unlikely to deliver new standards or best practices.</li> </ul>	●
Impact on resource recovery	<ul style="list-style-type: none"> <li>+ Does not directly encourage battery recycling</li> <li>+ Potential for increased illegal dumping, leakage to states without battery bans.</li> <li>+ Limited application to consumers.</li> <li>+ Lack of enforcement.</li> <li>+ Landfill ban will not work in isolation of other recycling mechanisms.</li> </ul>	●
Impact on risk reduction	<ul style="list-style-type: none"> <li>+ Potential to decrease likelihood of battery related fire incidents at landfill.</li> <li>+ Potential for increased illegal dumping, leakage to states without battery bans. May correspond to potential to increase risk of battery related fires from illegal dumping sites.</li> </ul>	●
Accessibility	<ul style="list-style-type: none"> <li>+ Dependent on the level of infrastructure (transfer stations/drop-off points) accompanied by the ban, state to state variation.</li> </ul>	●



## 5.4 Instrument 4: NTCRS - Existing Framework

Instrument 4	NTCRS - Existing Framework	Review Rating
<p><b>Description</b></p>	<ul style="list-style-type: none"> <li>+ The NTCRS provides collection and recycling services to households and small businesses for waste televisions, computers, and other computer peripherals. The RAWR Act and Recycling and Waste Reduction (Product Stewardship—Televisions and Computers) Rules 2021 provide the legislative framework for the scheme. The legislation requires certain liable parties to become members of co-regulatory arrangements and requires them to take all reasonable steps towards outcomes specified under the RAWR Act.</li> <li>+ Expansion and revision of scope of the current NTCRS Product Stewardship (currently only covers Televisions and Computers) Regulation to include:                             <ul style="list-style-type: none"> <li>+ Rechargeable batteries under 5kg</li> <li>+ Electronic equipment containing batteries, e.g. power tools, toys, model aircrafts and remote-control items etc.</li> <li>+ Online sales.</li> </ul> </li> </ul>	
<p><b>Scheme operator</b></p>	<ul style="list-style-type: none"> <li>+ Regulated by Federal Government</li> <li>+ Implemented by Approved Co-regulatory arrangements.</li> <li>+ Liable parties have the option to set up and run their own arrangement.</li> </ul>	
<p><b>Scheme type</b></p>	<ul style="list-style-type: none"> <li>+ Co-regulatory</li> </ul>	
<p><b>Feasible funding options</b></p>	<ul style="list-style-type: none"> <li>+ Liable parties: Battery importers obligation to pay the Arrangement to which it is a member, a rate per battery collected based on their specific imports in the prior year multiplied by the current year target.</li> <li>+ Liable parties: Retailers obligated to provide a free drop off service to customers at no cost to the scheme and take back batteries for collection by accredited arrangements.</li> <li>+ Important to consider mechanism for capturing importers involved in online sales.</li> </ul>	
<p><b>Cost to Industry and Government</b></p>	<ul style="list-style-type: none"> <li>+ Federal Government                             <ul style="list-style-type: none"> <li>+ Administration/enforcement costs. Would not be a significant addition to current administrative costs.</li> </ul> </li> <li>+ Co-regulatory arrangements                             <ul style="list-style-type: none"> <li>+ Responsible for all financial arrangements and funding to achieve the outcomes and requirements in the Rules</li> <li>+ Cost of scheme operation and expansion of collection and processing channels</li> </ul> </li> <li>+ Industry: Liable Parties</li> </ul>	●

Instrument 4	NTCRS – Existing Framework	Review Rating
	<ul style="list-style-type: none"> <li>+ The Rules would need to be updated to include batteries/battery containing products within scope, but once this is done then Liable parties for batteries must be a member of an approved co-regulatory arrangement in relation to that product, Under the RAWR act.</li> <li>+ Importers and manufacturers part of co-regulatory arrangements are responsible for funding the arrangement. This can extend to retailers, dependent on the rules.</li> <li>+ Importers               <ul style="list-style-type: none"> <li>+ Cost of setting up an arrangement or the membership cost of joining an existing one.</li> </ul> </li> <li>+ Retailers               <ul style="list-style-type: none"> <li>+ Cost of establishing collection services and/or cost of membership.</li> <li>+ They are liable parties if they are a constitutional corporation and manufacture, import, distribute or use the product in Australia.</li> </ul> </li> <li>+ State &amp; local government               <ul style="list-style-type: none"> <li>+ Cost of managing the proportion of the available e-waste not covered by product stewardship targets</li> </ul> </li> </ul>	
Ease of deployment	<ul style="list-style-type: none"> <li>+ Federal Government               <ul style="list-style-type: none"> <li>+ Regulation amendment – Use of an existing instrument easier to deploy</li> <li>+ Expansion of scope                   <ul style="list-style-type: none"> <li>+ Products with embedded batteries not easily removed by the customer e.g. power tools, toys, etc.</li> <li>+ Addition of loose batteries &gt;5kgs</li> </ul> </li> <li>+ Expansion of NTCRS Liable Parties                   <ul style="list-style-type: none"> <li>+ Battery importers, manufacturers, and retailers</li> <li>+ Need to identify import codes, including online sales</li> <li>+ Collection of custom code data would require validation</li> </ul> </li> </ul> </li> <li>+ Scheme establishment               <ul style="list-style-type: none"> <li>+ Adaptation of target setting and reporting to include expanded scope</li> <li>+ Build public awareness</li> </ul> </li> <li>+ Collection channels               <ul style="list-style-type: none"> <li>+ Would require additional collection channels specific to batteries.</li> <li>+ Greater access to drop off points, but additional costs to ensure current drop-off points:                   <ul style="list-style-type: none"> <li>+ Have appropriate fire safe containers</li> <li>+ Have operators given additional education to ensure safe handling</li> </ul> </li> </ul> </li> </ul>	●

Instrument 4	NTCRS – Existing Framework	Review Rating
	<ul style="list-style-type: none"> <li>+ Distributors need to be targeted in order to effectively capture sales. Setting a threshold number of batteries sold/manufactured (as per the existing NTCRS) is insufficient for the attribution liability to online battery/embedded battery sales.</li> <li>+ Difficult to track online sales, and import/customs data.</li> <li>+ Difficult to report if there are overlaps, particularly for products with embedded batteries.</li> </ul>	
<b>Ease of implementation</b>	<ul style="list-style-type: none"> <li>+ Government impact                             <ul style="list-style-type: none"> <li>+ Administration of the scheme largely incorporated into existing federal compliance activities related to the NTCRS</li> </ul> </li> <li>+ Industry impact                             <ul style="list-style-type: none"> <li>+ OEM Brands already participating in NTCRS would see minor addition based on scope expansion.</li> <li>+ Battery brands not party to the NTCRS would have expanded responsibilities.</li> </ul> </li> <li>+ Community improvement                             <ul style="list-style-type: none"> <li>+ Increased access to recycling options</li> </ul> </li> <li>+ Existing NTCRS Drop-off sites would require retrofitting to accommodate acceptance of batteries.</li> </ul>	●
<b>Performance measures</b>	<ul style="list-style-type: none"> <li>+ Among other reports, approved co-regulatory arrangements are required to provide annual audit reports to the government.                             <ul style="list-style-type: none"> <li>+ Under the Recycling and Waste Reduction (Product Stewardship—Televisions and Computers) Rules 2021, the audit report must include:                                     <ul style="list-style-type: none"> <li>(a) an audit of the financial statements setting out the revenue and expenditure of the approved co-regulatory arrangement; and</li> <li>(b) an audit of the performance of the approved co-regulatory arrangement in relation to each outcome to be achieved</li> </ul> </li> </ul> </li> <li>+ Outcomes for arrangements must be achieved each year for co-regulatory arrangements to continue their status as approved                             <ul style="list-style-type: none"> <li>+ Recycling targets</li> <li>+ Material recovery targets</li> <li>+ Current targets are set as per AS NZ 5377. AS 5377:2013 is below international best practice. The 2022 update, whilst yet to be adopted by government, would serve to improve the accountability of the targets if implemented. However, even the 2022 update to AS NZ 5377 falls below international best practice standards, such as the e-Stewards standard currently implemented in the United States.</li> </ul> </li> </ul>	●

Instrument 4	NTCRS – Existing Framework	Review Rating
National coverage	<ul style="list-style-type: none"> <li>+ The NTCRS is implemented nationally, it has high coverage.</li> </ul>	●
Ability to define scope in regulation	<ul style="list-style-type: none"> <li>+ Battery management differs significantly from e-waste.</li> <li>+ Dangerous goods requirements for batteries</li> <li>+ Physical scale of batteries, and scale of batteries as waste different from e-waste.</li> <li>+ Scope would have to be expanded to include:                             <ul style="list-style-type: none"> <li>+ Loose batteries &gt;5kg</li> <li>+ Electronics not currently included in the scope of the NTCRS, but which contain large volumes of batteries.</li> </ul> </li> <li>+ Scope would also need to be revised as it currently includes embedded batteries that can be easily removed from the product.</li> <li>+ It is likely the federal government would prefer a larger scope.</li> <li>+ It is likely that the Minister’s priority list would influence the extent and ability for batteries to be defined in regulation.</li> </ul>	●
Ability to build brand / community awareness & engagement	<ul style="list-style-type: none"> <li>+ Batteries likely to be overshadowed amongst the broader e-waste scheme.</li> <li>+ Additional public awareness and education efforts would likely be necessary to raise awareness among consumers</li> </ul>	●
Impact on infrastructure development & best practice	<ul style="list-style-type: none"> <li>+ Processing capacity                             <ul style="list-style-type: none"> <li>+ Would provide some certainty to the recycling sector to engage in infrastructure investment, however possibly not as much as if there was a focused arrangement on batteries.</li> </ul> </li> <li>+ Best practice                             <ul style="list-style-type: none"> <li>+ Arrangements responsible for contracting and auditing adherence to AS NZ 5377, and environment, health and safety requirements, noting that AS 5377:2013 is far below international best practice. The 2022 update, whilst not adopted by government, represents a better accountability structure. However, even the 2022 update to AS NZ 5377 still falls below international best practice standards, such as the e-Stewards standard currently implemented in the United States.</li> </ul> </li> </ul>	●
Impact on resource recovery	<ul style="list-style-type: none"> <li>+ Potential for impact on resource recovery: Medium                             <ul style="list-style-type: none"> <li>+ Likely to increase significantly, but possibly not as much as if there was a focused arrangement on batteries.</li> <li>+ Involves enforcement of collection targets.</li> </ul> </li> </ul>	●

Instrument 4	NTCRS – Existing Framework	Review Rating
	<ul style="list-style-type: none"> <li>+ Opportunity to leverage existing infrastructure for collection.</li> </ul>	
Impact on risk reduction	<ul style="list-style-type: none"> <li>+ Potential to reduce risk: Medium</li> <li>+ Due to diversion of potentially flammable lithium-ion batteries from the landfill waste stream.</li> </ul>	●
Accessibility	<ul style="list-style-type: none"> <li>+ NTCRS supposedly has provided 98% of Australian population with reasonable access to drop off points. Very high coverage with over 1,180 collection points nation-wide.</li> <li>+ By comparison, B-cycle has 5,100 drop off points or 4.3 times higher than NTCRS. Sustainable Product Stewards (NTCRS co-regulator) figures were unavailable, however appears to have low reporting and accountability.</li> <li>+ Access to current NTCRS collection channels would greatly increase drop off options for consumers.</li> </ul>	●

## 5.5 Instrument 5: Expansion of B-cycle as a Voluntary Scheme

Instrument 5	Expansion of B-cycle as a Voluntary Scheme	Review Rating
Description	<ul style="list-style-type: none"> <li>+ The aim of the expansion would be to include a greater number of products into the scope of the scheme, specifically to products with embedded batteries.</li> <li>+ ACCC authorisation would provide immunity from court action for conduct that might be otherwise considered to involve collusion.</li> </ul>	
Scheme operator	<ul style="list-style-type: none"> <li>+ Regulated by the ACCC via an independent audit process to verify that signatories are complying with obligations.</li> <li>+ Operated by the BSC</li> <li>+ Led by scheme participants</li> </ul>	
Scheme type	<ul style="list-style-type: none"> <li>+ Voluntary accredited scheme</li> <li>+ Enforced through ACCC review of obligations and by market pressure (Member to Member agreements).</li> </ul>	
Feasible funding options	<ul style="list-style-type: none"> <li>+ Industry importers charged with levy                             <ul style="list-style-type: none"> <li>+ Based on member estimates of imports, verified by independent audits</li> </ul> </li> </ul>	
Cost to Industry and Government	<ul style="list-style-type: none"> <li>+ Government                             <ul style="list-style-type: none"> <li>+ Federal government (ACCC) responsible for the oversight of the accreditation process.</li> <li>+ State, territory and local government responsible for the collection and recycling of batteries outside the scope of the scheme.</li> </ul> </li> <li>+ Industry                             <ul style="list-style-type: none"> <li>+ Importers charged with paying scheme levy to fund scheme operations.</li> <li>+ Current ACCC authorisation prohibits BSC to adjust the scheme rebate according to market fluctuations.</li> <li>+ Retailers/high users provide drop off points.</li> <li>+ Scheme expansion design and application costs fall to industry</li> </ul> </li> </ul>	●
Ease of deployment	<ul style="list-style-type: none"> <li>+ Section 188 of the RAWR Act permits the creation of new rules for existing product stewardship schemes, which could provide a mechanism to require industry to pay a levy.</li> <li>+ Government responsible for the accreditation of voluntary product stewardship schemes under the RAWR Act.</li> <li>+ ACCC may grant authorisation to scheme when it is satisfied that public benefit outweighs any public detriment.</li> </ul>	●

Instrument 5	Expansion of B-cycle as a Voluntary Scheme	Review Rating
	<ul style="list-style-type: none"> <li>+ Scheme                             <ul style="list-style-type: none"> <li>+ Time and effort required to engage signatories.</li> <li>+ Additional cost associated with ACCC application.</li> <li>+ Would operate under existing stewardship organisation, but would require the development of sector specific guidelines.</li> <li>+ Additional collection channels to capture embedded batteries</li> </ul> </li> <li>+ Embedded batteries are very hard to pinpoint and track from an import perspective, with only import codes and customs data.</li> <li>+ Industry to design and create application (to ACCC) for scheme expansion to cover broader scope of items.</li> <li>+ Additional collection channels would need to be established to accommodate the expanded scope of accepted items.</li> </ul>	
<b>Ease of implementation</b>	<ul style="list-style-type: none"> <li>+ Government                             <ul style="list-style-type: none"> <li>+ Some level of administration from the federal government (ACCC)</li> </ul> </li> <li>+ Industry can tailor scheme design to fit needs and capacity.</li> <li>+ BSC already accredited and functioning. Rapid expansion since implementation.</li> </ul>	●
<b>Performance measures</b>	<ul style="list-style-type: none"> <li>+ Drop-off points report to B-cycle, providing performance estimates.</li> <li>+ B-cycle publishes annual performance reports, with details on collection rates, recovery processes, financial performance, etc.</li> <li>+ Annual reports compare scheme performance to international benchmarks</li> </ul>	●
<b>National coverage</b>	<ul style="list-style-type: none"> <li>+ High, currently BSC has coverage across Australia.</li> </ul>	●
<b>Ability to define scope in regulation</b>	<ul style="list-style-type: none"> <li>+ The scope would be expanded to include embedded batteries, which is very broad. Scope could be defined by industry to suit needs and capacity.</li> <li>+ Ideally, rebate from scheme would be adjustable. However current ACCC authorisation limits the flexibility of the rebate, restricting the flow of funding that can be distributed throughout the scheme. New ACCC authorisation required to enable this.</li> <li>+ Capture of online sales inhibited by current ACCC authorisation.</li> </ul>	●
<b>Ability to build brand / community awareness &amp; engagement</b>	<ul style="list-style-type: none"> <li>+ High</li> <li>+ Well established scheme with a single coordinating body.</li> </ul>	●

Instrument 5	Expansion of B-cycle as a Voluntary Scheme	Review Rating
Impact on infrastructure development & best practice	<ul style="list-style-type: none"> <li>+ Would provide certainty to industry and encourage investment in infrastructure needed to meet increasing volumes from expanded scope of accepted items.</li> </ul>	●
Impact on resource recovery	<ul style="list-style-type: none"> <li>+ Potential to impact resource recovery:                             <ul style="list-style-type: none"> <li>+ High due to enforcement element of the ACCC authorisation process which audits compliance with signatory obligations.</li> </ul> </li> </ul>	●
Impact on risk reduction	<ul style="list-style-type: none"> <li>+ Potential to reduce risk: High                             <ul style="list-style-type: none"> <li>+ Decreases the risk to human health and environment imposed by embedded batteries</li> </ul> </li> </ul>	●
Accessibility	<ul style="list-style-type: none"> <li>+ High, numerous drop-off points are already established across Australia. It is likely that scope expansion would increase the number of drop-off points.</li> </ul>	●



## 5.6 Instrument 6: NTCRS - New Dedicated Battery Stewardship Arrangement

Instrument 6	NTCRS - New Dedicated Battery Stewardship Arrangement	Review Rating
Description	<ul style="list-style-type: none"> <li>+ Using the existing NTCRS product stewardship framework, however establishing a separate Arrangement that would be responsible for scheme implementation</li> </ul>	
Scheme operator	<ul style="list-style-type: none"> <li>+ Administered by Federal Government</li> <li>+ Managed by a new non-profit Product Stewardship Arrangement</li> </ul>	
Scheme type	<ul style="list-style-type: none"> <li>+ Co-regulatory</li> </ul>	
Feasible funding options	<ul style="list-style-type: none"> <li>+ The same as the NTCRS model with a separate target for batteries (outlined in instrument 4)</li> </ul>	
Cost to Industry and Government	<ul style="list-style-type: none"> <li>+ Some additional cost of administration would be borne by the federal government - DCCEE to administer an additional regulation under the NTCRS.                             <ul style="list-style-type: none"> <li>+ Critical to have government support to maximise scheme participation.</li> </ul> </li> <li>+ Operational costs borne by the New Product Stewardship Arrangement and liable parties, including the cost of processing batteries.                             <ul style="list-style-type: none"> <li>+ Likely to include costs associated with processing out of scope batteries</li> </ul> </li> <li>+ Co-regulatory arrangements                             <ul style="list-style-type: none"> <li>+ Responsible for all financial arrangements and funding to achieve the outcomes and requirements in the Rules</li> <li>+ Cost of scheme operation and expansion of collection and processing channels</li> </ul> </li> <li>+ Industry: Liable Parties                             <ul style="list-style-type: none"> <li>+ Liable parties for batteries must be a member of an approved co-regulatory arrangement in relation to that product, Under the RAWR act.</li> <li>+ Liable parties of co-regulatory arrangements are responsible for funding of the arrangement.</li> </ul> </li> <li>+ Local &amp; State Gov't: would bear the cost of managing batteries not collected under the scheme</li> </ul>	●
Ease of deployment	<ul style="list-style-type: none"> <li>+ Federal Government impact                             <ul style="list-style-type: none"> <li>+ Extra time needed to change regulations to enable single battery arrangement.</li> <li>+ Would require the Minister to approve establishment of an Arrangement specifically for batteries - unlikely to occur without significant pressure.</li> <li>+ May need to obtain ACCC approval for single arrangement.</li> <li>+ Would need to confirm that a single arrangement be approved under the Products Stewardship Act.</li> </ul> </li> </ul>	●

Instrument 6	NTCRS - New Dedicated Battery Stewardship Arrangement	Review Rating
	<ul style="list-style-type: none"> <li>+ Scheme establishment                             <ul style="list-style-type: none"> <li>+ Would require establishment of new arrangement, governance, contracts, oversight process for recyclers.</li> <li>+ Would require development of battery specific performance measures.                                     <ul style="list-style-type: none"> <li>+ Current collection targets do not include batteries.</li> <li>+ Options for performance measures (material recovery efficiency) could be included.</li> <li>+ Similar to NTCRS.</li> <li>+ Reporting on recovery rates.</li> </ul> </li> </ul> </li> <li>+ Collection channels                             <ul style="list-style-type: none"> <li>+ New collection channels would need to be established, incurring cost.</li> <li>+ Potential to create channels focused on scheme scope, such as ensuring drop-off points that have:                                     <ul style="list-style-type: none"> <li>+ appropriate fire safe containers</li> <li>+ have operators given additional education to ensure safe handling</li> </ul> </li> </ul> </li> <li>+ Industry impact                             <ul style="list-style-type: none"> <li>+ Some battery liable parties already party to the scheme for other products (e.g. Canon, Panasonic, etc.) will be reluctant to have multiple schemes.</li> </ul> </li> <li>+ Very difficult to track online sales, and import/customs data, especially for embedded batteries.</li> <li>+ Difficult to report if there are overlaps, particularly for products with embedded batteries.</li> </ul>	
Ease of implementation	<ul style="list-style-type: none"> <li>+ Government impact                             <ul style="list-style-type: none"> <li>+ Some additional ongoing enforcement would be required.</li> </ul> </li> <li>+ Industry impact                             <ul style="list-style-type: none"> <li>+ Would not address current limitations of the NTCRS regarding targets and reporting.</li> <li>+ May require brands to participate in multiple schemes.</li> </ul> </li> <li>+ Community impact                             <ul style="list-style-type: none"> <li>+ Improved access to battery recycling options.</li> </ul> </li> <li>+ Existing NTCRS Drop-off sites would require retrofitting to accommodate acceptance of batteries.</li> </ul>	●
Performance measures	<ul style="list-style-type: none"> <li>+ Among other reports, approved co-regulatory arrangements are required to provide annual audit reports to the government                             <ul style="list-style-type: none"> <li>+ Varying levels of quality in reporting, level of independent verification is uncertain.</li> </ul> </li> <li>+ Audit reports: Under the Recycling and Waste Reduction (Product Stewardship—Televisions and Computers) Rules 2021, the audit report must include:</li> </ul>	●

Instrument 6	NTCRS - New Dedicated Battery Stewardship Arrangement	Review Rating
	<p>(a) an audit of the financial statements setting out the revenue and expenditure of the approved co-regulatory arrangement; and</p> <p>(b) an audit of the performance of the approved co-regulatory arrangement in relation to each outcome to be achieved</p> <ul style="list-style-type: none"> <li>+ Outcomes for arrangements must be achieved each year for co-regulatory arrangements to continue their status as approved.</li> <li>+ Recycling targets</li> <li>+ Pre-determined material recovery targets</li> </ul>	
National coverage	<ul style="list-style-type: none"> <li>+ The NTCRS is implemented nationally, it has high coverage.</li> </ul>	●
Ability to define scope in regulation	<ul style="list-style-type: none"> <li>+ Could be specifically defined with potential for expanding scope to broader range of batteries e.g. &gt; 5kg in the future, however:                             <ul style="list-style-type: none"> <li>+ It is possible the Federal Government would prefer a broader scope.</li> <li>+ Would require a process for addressing batteries collected by other NTCRS Arrangements and schemes.</li> </ul> </li> </ul>	●
Ability to build brand / community awareness & engagement	<ul style="list-style-type: none"> <li>+ Dedicated arrangement will allow for focused marketing and brand creation.</li> </ul>	●
Impact on infrastructure development & best practice	<ul style="list-style-type: none"> <li>+ Processing capacity                             <ul style="list-style-type: none"> <li>+ NTCRS currently has 1,180 collection points nation-wide (potentially inclusive of other materials) with reasonable access benchmarks in place to provide 98% nation-wide accessibility.</li> <li>+ In comparison, B-cycle has over 5,100 collection points across eight states and territories. It is likely that B-cycle already meets or exceeds the NTCRS coverage requirement and may even be able to reduce the number of drop off points in metropolitan areas.</li> <li>+ Would provide certainty to the recycling sector to invest in infrastructure.</li> </ul> </li> <li>+ Best practice                             <ul style="list-style-type: none"> <li>+ Arrangement would be responsible for contracting and auditing in adherence to EH&amp;S requirements, noting that AS 5377:2013 is a low standard and makes no mention of batteries. As the existing standard is not applicable, it would require development a new and more rigorous standard. BSC currently has protocols that are more robust than the existing standard. Single scheme would enable easy development of battery specific standards.</li> </ul> </li> </ul>	●

Instrument 6	NTCRS - New Dedicated Battery Stewardship Arrangement	Review Rating
Impact on resource recovery	<ul style="list-style-type: none"> <li>+ Potential to impact resource recovery:</li> <li>+ Resource recovery likely to increase significantly given the sole focus on batteries and the ability for enforcement of collection performance measures.</li> </ul>	●
Impact on risk reduction	<ul style="list-style-type: none"> <li>+ Potential to reduce risk: High</li> <li>+ Dedicated arrangement would allow for a focus on battery safety standards and best practices to reduce risk.</li> <li>+ Arrangements responsible for contracting and auditing adherence to AS NZ 5377 and EH&amp;S requirements</li> </ul>	●
Accessibility	<ul style="list-style-type: none"> <li>+ NTCRS supposedly has provided 98% of Australian population with reasonable access to drop off points. Very high coverage with over 1,180 collection points nation-wide.</li> <li>+ By comparison, B-cycle has 5,100 drop off points or 4.3 times higher than NTCRS. Sustainable Product Stewards (NTCRS co-regulator) figures were unavailable, however appears to have low reporting and accountability.</li> <li>+ NTCRS access benchmark exceeded with expanded battery specific channels increasing drop off options for consumers.</li> </ul>	●

## 5.7 Instrument 7: Washington State Model

Instrument 7	Washington State Model	Review Rating
Description	<ul style="list-style-type: none"> <li>+ The Washington State Battery Stewardship Law RCW 70A.555-5 establishes guidelines for responsible battery management. It mandates battery producers to develop and implement stewardship plans for the collection, recycling, and disposal of batteries. The law sets out specific requirements for collection rates, recycling efficiency, public awareness, and funding for these programs. It also outlines the roles and responsibilities of retailers, producers, and battery stewardship organisations (BSO) in managing battery waste, aiming to promote environmental sustainability and reduce the impact of battery disposal. The Washington State Model was selected over the EU Batteries Regulation as a mandatory scheme. Further detail is provided in Appendix C.</li> </ul>	
Scheme operator	<ul style="list-style-type: none"> <li>+ PSOs, either directly by industry through a non-profit designated by a producer or group of producers.</li> </ul>	
Scheme type	<ul style="list-style-type: none"> <li>+ Mandatory                             <ul style="list-style-type: none"> <li>+ Producers selling or distributing covered batteries or products with batteries in Washington must join and fund an approved battery stewardship plan. Producers who do not participate in such a plan are barred from selling these items in/into Washington.</li> </ul> </li> </ul>	
Feasible funding options	<ul style="list-style-type: none"> <li>+ Producers (industry) are defined under the legislation, and if found liable to pay, must make contributions to scheme in order to continue business. Legislation allows for liability to be applied to different levels of industry stakeholders.</li> <li>+ Producer Charges: BSOs to develop systems for collecting fees from producers to cover costs. Examples include eco-modulated fees to:                             <ul style="list-style-type: none"> <li>+ Promote reusable and recyclable design.</li> <li>+ Encourage recycled material use.</li> <li>+ Discourage problematic materials which increase costs of managing covered batteries.</li> <li>+ Encourage other design attributes which reduce the environmental impact of covered batteries.</li> </ul> </li> <li>+ Retailers, producers, and battery stewardship organisations are prohibited from charging consumers a specific point-of-sale fee for the administrative or operational costs of the battery stewardship organisation or stewardship program.</li> </ul>	
Cost to Industry and Government	<ul style="list-style-type: none"> <li>+ High cost to industry, however regulation stipulates that programs should aim to equitably share costs among producers from participating BSOs.</li> <li>+ State gov't required to review and approve battery stewardship plans.</li> </ul>	●

Instrument 7	Washington State Model	Review Rating
	<ul style="list-style-type: none"> <li>+ State gov't charges fees for the implementation, administration, and enforcement of the regulation. These fees are to be paid by annually by BSOs.</li> <li>+ Reimbursement to Local Governments                             <ul style="list-style-type: none"> <li>+ BSOs must reimburse local governments for costs incurred due to their facilities serving as collection sites.</li> <li>+ BSOs are to provide collection sites with containers, training, signage, safety guidance, and educational materials free of charge.</li> <li>+ BSOs are to include a service agreement template in their plan, developed with local government input, for distributing reimbursements</li> </ul> </li> </ul>	
Ease of deployment	<ul style="list-style-type: none"> <li>+ High cost to industry compared to government: Liable producers are mandated by law to participate in and adequately fund a BSO and stewardship program, including operations.                             <ul style="list-style-type: none"> <li>+ BSOs required to establish and administer full funding for stewardship programs, in a manner that equitably distributes the costs among producers party to the BSO.</li> </ul> </li> <li>+ BSOs are responsible for:                             <ul style="list-style-type: none"> <li>+ Covering costs for collection, transportation, processing, education, administration, agency reimbursement, recycling, and end-of-life management.</li> <li>+ Meeting collection goals.</li> <li>+ Continuously conducting collection and outreach activities regardless of performance goal achievement.</li> <li>+ Payment of administrative fees to the state gov't (Department of Ecology).</li> </ul> </li> <li>+ State Gov't responsible for:                             <ul style="list-style-type: none"> <li>+ Approval and reviewing process for stewardship program plans;</li> <li>+ Review of annual program performance reports submitted by BSOs</li> <li>+ Providing technical assistance to producers and retailers surrounding the requirements of the regulation</li> <li>+ Issuing orders or imposing penalties to producers or retailers.</li> </ul> </li> </ul>	●
Ease of implementation	<ul style="list-style-type: none"> <li>+ Requires significant effort and resources from industry. However, commitments required by industry do not differ significantly from other schemes.</li> <li>+ It is noted that BSC currently provides most of the following scheme functions. BSOs would be required to provide:                             <ul style="list-style-type: none"> <li>+ Collections for all covered batteries on a free, continuous, convenient, visible, and accessible basis to any person, business, government agency, or nonprofit organisation.</li> <li>+ Proposed performance goals for the next three calendar years.</li> </ul> </li> </ul>	●

Instrument 7	Washington State Model	Review Rating
	<ul style="list-style-type: none"> <li>+ Retailer awareness strategies regarding only selling approved plan products from participating producers.</li> <li>+ Education and communication strategies for program participation.</li> <li>+ Information/promotional materials about end-of-life battery management for retailers to provide to customers.</li> <li>+ Promotional activities and consumer awareness strategies.</li> <li>+ Collection site safety training and emergency protocols.</li> <li>+ Equitable funding methods among producers.</li> <li>+ Financing methods</li> <li>+ Collection methods for all battery types, locations, and accessibility details.</li> <li>+ Criteria for collection site eligibility.</li> <li>+ Collection goals based on sold battery weights.</li> <li>+ Details on brokers, transporters, processors, and final disposition facilities.</li> <li>+ Recycling efficiency rate goals.</li> <li>+ Public awareness goals, especially in vulnerable and overburdened communities.</li> <li>+ Local government coordination procedures.</li> <li>+ Annual reports on program performance.</li> <li>+ Retailers can only sell, offer, or distribute relevant batteries or products containing batteries if the producer is certified by a battery stewardship organisation approved by the department.</li> </ul>	
<b>Performance measures</b>	<ul style="list-style-type: none"> <li>+ Battery stewardship plans must set annual goals for programs to continuously and significantly improve:                             <ul style="list-style-type: none"> <li>+ The collection rate for recycling batteries.</li> <li>+ The program’s recycling efficiency.</li> <li>+ Public awareness of the program.</li> </ul> </li> <li>+ The goals must include, but are not limited to:                             <ul style="list-style-type: none"> <li>+ Specific collection rate targets.</li> <li>+ Recycling efficiency targets of at least 60% for rechargeable batteries and 70% for primary batteries.</li> <li>+ Public awareness, convenience, and accessibility goals that meet or exceed minimum requirements set in the regulation.</li> </ul> </li> </ul>	●
<b>National coverage</b>	<ul style="list-style-type: none"> <li>+ Low - the Washington example is on a state level. However, the model could be extrapolated for implementation at the national level, albeit at a much greater effort and cost.</li> </ul>	●



Instrument 7	Washington State Model	Review Rating
Ability to define scope in regulation	<ul style="list-style-type: none"> <li>+ The scope covers a broad range of batteries and battery related products, including:                             <ul style="list-style-type: none"> <li>+ Battery-Containing Product: A product with or packaged with rechargeable or primary covered batteries.</li> <li>+ Covered Battery: Portable or medium format batteries, excluding certain medical device batteries, liquid electrolyte batteries, heavy lead-acid batteries, specific RCW-regulated batteries, and non-removable batteries in products.</li> <li>+ Large Format Battery: Rechargeable batteries over 25 pounds or 2,000 watt-hours, or primary batteries over 25 pounds.</li> <li>+ Medium Format Battery: Defined weights and watt-hours for rechargeable and primary batteries between portable and large format sizes.</li> <li>+ Portable Battery: Defined weights and watt-hours for smaller rechargeable and primary batteries.</li> <li>+ Primary Battery: Non-rechargeable batteries.</li> <li>+ Rechargeable Battery: A battery with cells designed to be recharged.</li> </ul> </li> </ul>	●
Ability to build brand / community awareness & engagement	<ul style="list-style-type: none"> <li>+ Retailers can use and provide information from battery stewardship organizations to customers about end-of-life management options for covered batteries. This information, which the stewardship organisations must supply to retailers, can include in-store signage, written materials, and other promotional content about disposal and recycling options for batteries they collect.</li> </ul>	●
Impact on infrastructure development & best practice	<ul style="list-style-type: none"> <li>+ Programs could utilise current waste collection services and facilities where feasible.</li> <li>+ Retailers, wholesalers, municipalities, and other entities can request to serve as collection sites or host collection events.</li> <li>+ May require development of infrastructure for scheme operations (collection/transport/processing, etc.) if necessary.</li> <li>+ Arrangements responsible for contracting and auditing adherence to AS NZ 5377 and EH&amp;S requirements</li> </ul>	●
Impact on resource recovery	<ul style="list-style-type: none"> <li>+ High - the regulation proposes a mandatory arrangement for all batteries covered under the scheme and prohibits the sale or otherwise of any covered batteries/battery containing products in the state if their producers do not participate, enforced by civil penalties. Provision of scheme collection services etc. promotes capture and recycling of waste batteries.</li> </ul>	●
Impact on risk reduction	<ul style="list-style-type: none"> <li>+ High - Mandating the inclusion of waste batteries into the scheme increases the capture rate of waste batteries. This promotes the shift of batteries from consumer hands (where safety controls are challenging) and enter controlled scheme operations. Ideally scheme operations would be equipped with appropriate safety measures such as handling by trained staff and fire-safe containers, reducing environmental and human health risks.</li> </ul>	●



Instrument 7	Washington State Model	Review Rating
Accessibility	<ul style="list-style-type: none"> <li>+ State level law, in the United States. In an Australian Context, there is a possibility for expansion of a similar regulation to the national level, but would require effort from federal government.</li> <li>+ The RAWR act defines any constitutional corporation that has at any time manufactured, imported, distributed or used the product in Australia as a liable party.</li> <li>+ Liable parties are subjected to rules that ensures regulation of products including taking actions that relate to managing products throughout their lifecycle.</li> </ul>	●

## 5.8 Instrument 8: BSC Proposed National Regulatory Model targeting free riders

Instrument 8	BSC Proposed National Regulatory Model targeting free riders	Review Rating
Description	<ul style="list-style-type: none"> <li>+ The creation of a battery rule, under the Recycling and Waste Reduction Act 2020 (RAWR Act) would provide the regulation to facilitate a co-regulatory battery stewardship scheme.</li> <li>+ Would require establishment of a Co-regulatory Battery Stewardship arrangements under RAWR Act.</li> <li>+ If a co-regulatory scheme was established, liable parties in relation to batteries and embedded battery products are bound to be a member of an approved co-regulatory arrangement in relation to that product.</li> </ul>	
Scheme operator	<ul style="list-style-type: none"> <li>+ Regulated by federal government (DCCEE and ACCC).</li> <li>+ Operated by members of the arrangement, comprised of “liable parties” of the arrangement. A liable party is defined as constitutional corporations that have at any time either manufactured, imported, distributed, or used a product in Australia.</li> <li>+ Administrated by a body corporate “administrator”, which may also be a member of the arrangement.</li> </ul>	
Scheme type	<ul style="list-style-type: none"> <li>+ Co-regulatory</li> </ul>	
Feasible funding options	<ul style="list-style-type: none"> <li>+ Levies paid by liable parties could be based on:                             <ul style="list-style-type: none"> <li>+ Imports, distribution and production rates;</li> <li>+ Imports in the first year, then recovery rates in subsequent years; and,</li> <li>+ Estimates validated at the end of each period</li> <li>+ Change in accordance with CPI</li> </ul> </li> <li>+ While the RAWR Act doesn’t provide specific guidance on possible funding mechanisms for a co-regulatory product stewardship arrangement, it does allow for fees relating to activities carried out by or on behalf of the Commonwealth to be charged in the performance of functions or the exercise of powers under the Act.</li> <li>+ Membership fees                             <ul style="list-style-type: none"> <li>+ Current BSC members must either pay the levy, or a membership fee or be appointed as independent Directors to be eligible to vote on BSC board.</li> <li>+ However, not all members are liable parties. Full life-cycle representation is important for decision making.</li> <li>+ As such, whilst all members pay, not all members are liable to pay the levy.</li> </ul> </li> </ul>	

Instrument 8	BSC Proposed National Regulatory Model targeting free riders	Review Rating
<p><b>Cost to Industry and Government</b></p>	<ul style="list-style-type: none"> <li>+ Liable parties would bear the operational costs of the arrangement, including the cost of processing batteries.                             <ul style="list-style-type: none"> <li>+ Likely to include costs associated with processing out of scope batteries.</li> </ul> </li> <li>+ The Cost of managing batteries not collected under the scheme would fall to state and local governments.</li> <li>+ Administration costs would be spread amongst the members of the arrangement, including the administrator if they are also a member.</li> <li>+ Federal government administration (ACCC) required, government would pay some cost for administration of co-regulatory arrangements.</li> </ul>	
<p><b>Ease of deployment</b></p>	<ul style="list-style-type: none"> <li>+ Would require the establishment of new rules under the RAWR Act</li> <li>+ New co-regulatory arrangements need approval by the Minister under the RAWR Act.</li> <li>+ Cost to industry: Collection channels:                             <ul style="list-style-type: none"> <li>+ Co-regulatory arrangements are expected to achieve provision of reasonable access to collection services in metropolitan, regional and remote areas.</li> <li>+ Would likely require establishment of new collection channels to expand drop off locations to meet consumer convenience and preferences.</li> <li>+ It is likely that B-cycle currently meets the reasonable access requirements compared to NTCRS with approximately 3,720 (73%) drop-off locations dispersed across metro areas (Adelaide, Brisbane, Canberra, Melbourne, Newcastle/Lake Macquarie, Sydney, the Gold Coast, the Sunshine Coast, and Wollongong/Illawarra).</li> <li>+ There are approximately 1,377 (27%) B-cycle drop-off locations across regional/remote areas in Australia. Given the extended land mass of these areas and lack of evidence displaying the clusters of drop-off locations, further analysis is required to confirm whether B-cycle meets regional/remote NTCRS access requirements.</li> </ul> </li> <li>+ Industry impact                             <ul style="list-style-type: none"> <li>+ Liable parties currently party to the NTCRS have indicated that they would find it onerous to participate in multiple schemes.</li> </ul> </li> <li>+ Cost to government:                             <ul style="list-style-type: none"> <li>+ Minister would be required to approve establishment of new arrangement for any batteries which are not rechargeable handheld batteries weighing less than 5kg. It is unlikely the federal government would support a new scheme in the short term due to the cost and administrative burden it would likely represent.</li> </ul> </li> </ul>	

Instrument 8	BSC Proposed National Regulatory Model targeting free riders	Review Rating
Ease of implementation	<ul style="list-style-type: none"> <li>+ Government impact                             <ul style="list-style-type: none"> <li>+ Being industry-led, the administrative effort is expected to be lower for government compared to NTCRS</li> </ul> </li> <li>+ Industry impact                             <ul style="list-style-type: none"> <li>+ Would require some brands to participate in multiple schemes.</li> </ul> </li> <li>+ Community impact                             <ul style="list-style-type: none"> <li>+ Improved access to drop-off options would be required.</li> </ul> </li> <li>+ Distributors need to be targeted in order to effectively capture sales. Setting a threshold number of batteries sold/manufactured (as per NTCRS rules) is not sufficient enough to attribute liability from online sales.</li> <li>+ Ideally, rebate from scheme would be adjustable. However current ACCC authorisation limits the flexibility of the rebate, restricting the flow of funding that can be distributed throughout the scheme.</li> </ul>	●
Performance measures	<ul style="list-style-type: none"> <li>+ Co regulatory arrangements are required to achieve specific targets relating to:                             <ul style="list-style-type: none"> <li>+ Collection targets</li> <li>+ Reasonable access</li> <li>+ Annual recycling targets</li> <li>+ A material recovery target.</li> </ul> </li> <li>+ Work would be required to address industry concerns and ensure appropriate performance measures are established.</li> </ul>	●
National coverage	<ul style="list-style-type: none"> <li>+ High</li> </ul>	●
Ability to define scope in regulation	<ul style="list-style-type: none"> <li>+ Ideal for scope to cover all batteries, and battery containing products (embedded batteries) subject to market failure.</li> <li>+ Scope of arrangement could be specifically defined with potential for expanding scope in the future, however:                             <ul style="list-style-type: none"> <li>+ It is possible the Federal Government would prefer a broader scope.</li> <li>+ It would be important to stipulate reporting of recovery of embedded batteries collected by related Product Stewardship Arrangements such as NTCRS, Mobile Muster and Exitcycle.</li> </ul> </li> <li>+ Potential scope overlap with other battery schemes.</li> </ul>	●
Ability to build brand / community awareness & engagement	<ul style="list-style-type: none"> <li>+ Dedicated program would focus branding and messaging. Operating at a national level brings higher potential for brand and community awareness &amp; engagement.</li> </ul>	●
Impact on infrastructure development & best practice	<ul style="list-style-type: none"> <li>+ Would provide certainty to industry and encourage investment in infrastructure needed to meet rapidly increasing volumes.</li> <li>+ Improvement to best practice: Co-regulatory arrangements are to only undertake recycling at facilities that are certified to AS-5377, however currently BSC operates with protocol that is much stricter than AS-5377.</li> </ul>	●

Instrument 8	BSC Proposed National Regulatory Model targeting free riders	Review Rating
Impact on resource recovery	<ul style="list-style-type: none"> <li>+ Potential to impact resource recovery:                             <ul style="list-style-type: none"> <li>+ Would be high due to enforcement element of the Product Stewardship Act and due to the recommended changes to the accreditation process which requires collection rates and recycling rates to be agreed with government and industry stakeholders in the 5-year plan with annual reporting.</li> </ul> </li> </ul>	●
Impact on risk reduction	<ul style="list-style-type: none"> <li>+ Potential to reduce risk:                             <ul style="list-style-type: none"> <li>+ Dedicated arrangement would allow for a focus on battery safety standards and best practices to reduce risk.</li> </ul> </li> </ul>	●
Accessibility	<ul style="list-style-type: none"> <li>+ Under the Recycling and Waste Reduction Act 2020, Co-regulatory arrangements are expected to achieve provision of reasonable access to collection services in metropolitan, regional and remote areas. If this is successfully provided by a scheme, accessibility would be high.</li> <li>+ B-cycle’s existing drop off points (approx. 5100) could be leveraged to assist with collection accessibility.</li> </ul>	●

## 6. Transparency Assessment

A transparency assessment was conducted for three of the instruments identified by BSC: The BSC Proposed National Regulatory Model (recommended model, see Section 5: Summary), the NTCRS Models, and the Battery Refund Scheme. The NTCRS and Refund Scheme instruments have pre-existing reporting systems in place which allow for their transparency to be analysed. The transparency assessment presented in Table 1. below, considers:

- + Who is responsible for scheme reporting
- + Whether or not a framework exists that encourages transparency in scheme reporting
- + Consistency in scheme reporting.

Table 2: Transparency assessment by instrument

Instrument/Scheme	Transparency
<p><b>BSC Proposed National Regulatory Model targeting free riders</b></p> <ul style="list-style-type: none"> <li>+ Reporting conducted by BSC (scheme operator)</li> <li>+ Reporting requirements are supported in legislation under the RAWR Act. A new set of rules for the scheme could stipulate the requirements in more detail (auditing, reporting requirements, etc.)</li> <li>+ Reporting to be conducted on an annual basis.</li> </ul>	<ul style="list-style-type: none"> <li>+ Ideally scheme structure would be designed to support a high level of transparency and reporting through the following measures:</li> <li>+ Use of a performance measurement process consistent with national and/or international standards</li> <li>+ Publishing an annual report detailing scheme achievements, outcomes, and financial metrics</li> <li>+ Research to confirm market participation, life cycle impacts, circularity outcomes.</li> <li>+ Professional development to ensure access to latest in safety, circularity, and stewardship best practices.</li> </ul>
<p><b>NTCRS</b></p> <ul style="list-style-type: none"> <li>+ NTCRS reporting requirements are supported in legislation under the RAWR Act and relevant Rules</li> <li>+ Liable parties are required to join co-regulatory arrangements.</li> <li>+ Arrangements are required to submit annual reports to the Department of the Environment and Energy.</li> <li>+ Arrangements responsible for contracting and auditing adherence to AS NZ 5377, noting that AS 5377:2013 is below international best practice. AS 5377:2022, whilst not yet adopted by government, represents a better accountability structure. However, even the 2022 update to AS NZ 5377 falls below international best practice standards, such as the e-Stewards standard currently implemented in the United States.</li> </ul>	<ul style="list-style-type: none"> <li>+ NTCRS reporting suffers in consistency due to the number of reports, and reporters.</li> <li>+ NTCRS reports are published by the Department to allow the public to access information on scheme operations.</li> <li>+ Reports would include detailed information about recycling methods, collection, and recycling activities, and estimates of the quantities of batteries processed by the scheme.</li> <li>+ Arrangements are subject to independent auditing.</li> <li>+ Arrangements can be required to provide reports and/or education materials to the public.</li> <li>+ Low accountability in AS 5377:2013 with limited oversight and ability to track, impacting on the capacity to accurately report on collection and recycling outcomes.</li> </ul>
<p><b>Battery Refund Scheme</b></p> <ul style="list-style-type: none"> <li>+ Refund scheme reporting done by state and scheme coordinator (i.e. Exchange for Change coordinates the NSW Return and Earn scheme).</li> <li>+ Reporting includes information on the number of individual units of waste collected, the amount of money made for refunds, and the financial status of the scheme.</li> <li>+ Reporting requirements would vary state by state.</li> </ul>	<ul style="list-style-type: none"> <li>+ Refund schemes are well established under legislation in Australia, and mandated reporting requirements create transparency.</li> <li>+ Dependent on State, some recycling facilities might report directly to the government, whilst others would report to a scheme coordinator.</li> <li>+ Reporting likely be inconsistent due to different state reporting requirements, differences in the types containers covered under scheme, and method of reporting (some reports are per container basis, others by tonnage).</li> </ul>

## 7. Summary

Table 3 organises the instruments examined in the high-level review by the order of how well each instrument was described against the assessment criteria.

**Table 3: Summary of instrument review**

Instrument	Scheme operator	Scheme type	Feasible funding options	Cost to Industry & Government	Ease of deployment	Ease of implementation	Performance measures	National coverage	Ability to define scope in regulation	Ability to build brand/ community awareness & engagement	Impact on infrastructure development & best practice	Impact on resource recovery	Impact on risk reduction	Accessibility
1: BSC Proposed State Regulatory Model	State governments, PSO	Voluntary or co-regulatory	Participants pay	●	●	●	●	●	●	●	●	●	●	●
2: Battery Refund Scheme	State governments, scheme coordinator	Voluntary or co-regulated	Participants pay	●	●	●	●	●	●	●	●	●	●	●
3: State Based Landfill Bans	State governments	Regulatory	Levy	●	●	●	●	●	●	●	●	●	●	●
4: NTCRS - Existing Framework	Federal government, co-regulatory arrangements	Co-regulatory	Liable parties fund scheme	●	●	●	●	●	●	●	●	●	●	●
5: Expansion of B-cycle as a voluntary scheme	PSO (BSC)	Voluntary	Levy	●	●	●	●	●	●	●	●	●	●	●
6: NTCRS - New Dedicated Battery Stewardship Arrangement	Federal government, new product stewardship arrangement	Co-regulatory	Liable parties fund scheme	●	●	●	●	●	●	●	●	●	●	●
7: Washington State Model	PSO	Mandatory	Industry funds scheme	●	●	●	●	●	●	●	●	●	●	●
8: BSC Proposed National Regulatory Model targeting free riders	Scheme participants and administrator	Co-regulatory	Liable parties fund scheme	●	●	●	●	●	●	●	●	●	●	●

## 8. Recommendations

- 1. Instrument 8 (BSC Proposed National Regulatory Model):** This instrument aligns with BSC's preference of a co-regulatory scheme with broad national coverage and effective performance measures. The funding model, where liable parties fund the scheme, means that industry would bear the cost for scheme operations, whilst the government, having more control on the scheme itself, would bear more of the administrative costs. This instrument performed well against assessment criteria in key areas such as national coverage, the ability to build brand/community awareness, and ease of implementation.
- 2. Instrument 7 (Washington State Model):** Instrument 7 could facilitate significant outcomes in risk reduction and resource recovery; its mandatory nature means that industry has minimal control over scheme governance. The government's significant role in establishing and administering the scheme will likely make it difficult for the scheme to be deployed and implemented. The government would also likely need to prioritise and recognise batteries as a problem waste before a mandatory approach would be put into action. However, its strengths in several performance measures cannot be overlooked, and it may serve as a valuable model for specific aspects of a national scheme.
- 3. Instrument 5 (Expansion of B-cycle as a Voluntary Scheme):** The current voluntary scheme has demonstrated good success by bringing battery and waste industries together to establish a national network to recover used batteries. Expanding it to cover more products, including those with embedded batteries, would continue to increase the collection rate (currently 12%) and recovery rate (currently 8.5%). New ACCC authorisation should seek to amend the frequency by which BSC can change the rebate amount to ensure that operational costs are sufficiently covered.

The remaining instruments, comprised of mainly state based approaches, despite having benefits for resource recovery / risk reduction, as well as pose significant challenges for a national-level scheme. As BSC is an already established national-level product stewardship scheme, the implementation of state based regulatory approaches/measures would complicate the pre-existing structure of the scheme operations. This is due to the differences in state regulations, the likelihood of industry reluctance to join multiple state schemes, and the challenges in building a consistent nationally recognisable brand make these instruments less viable.

In conclusion, while Instrument 8 aligns most closely with the client's objectives and presents a coherent, national approach, it is also important to consider elements of Instruments 7 and 6, which could enhance the effectiveness of regulatory reforms to a battery product stewardship approach.



## 9. Appendix A – Reverse Vending Machines

Desktop research identified two companies who had previously conducted trials with reverse vending machines (RVMs) for batteries. Unfortunately, both companies are no longer trading and have since closed their company websites. All information pertaining to their use of battery vending machines was gathered from internet archives or other websites reporting on the trials. The companies were Refind Technologies, based out of Sweden, and Volkswagen in partnership with DDB Russia.

### Refind Technologies

Refind's RVMs were introduced at selected supermarkets in Norway, on Earth Day, April 22<sup>nd</sup>, 2017<sup>3</sup>. The trial was conducted through a partnership between retailer Coop Norway, and Energizer, who initiated and funded the trial.

Refind's RVM accepted AA, AAA, C, D, and 9V batteries, paying out one Norwegian Krone (NOK) per battery, equivalent to about 10 Euro cents, or 15 Australian cents at the time. The RVM only accepted loose consumer batteries and did not accept products containing batteries. It was not designed to handle embedded batteries such as those found in vapes, or products with purpose-built batteries, such as those in power tools, or light mobility devices, which pose a greater fire risk than the household batteries accepted by the machine.

Refind's RVM accepted AA, AAA, C, D and 9V batteries. RVMs paid out one Norwegian Krone (NOK) per battery, which was around 10 Euro cents or 15 Australian cents at the time<sup>4</sup>). Compared to current Container Deposit Schemes (CDS) in Australia, where the baseline refund is 10 cents per container, the refund for batteries through reverse vending machines would need to be significantly higher. This is because batteries contain hazardous materials and are inherently more difficult to store and transport as they pose a fire risk. Compounding this, battery recycling costs are also made greater due to the different chemistries of batteries; They are not as easily recycled as aluminium drink cans or PET bottles. Therefore, a refund greater than the 10c CDS baseline would be necessary to cover the complexities and costs involved in recycling batteries via RVMs.

The Refind RVM did not accept any batteries beyond loose consumer batteries, or products containing batteries. The RVM was not designed to embedded batteries such as vape batteries, power tools batteries, or light mobility batteries, all of which pose a greater fire risk than the household batteries accepted by the RVM.

The RVM identified the size of the battery, counted them, and returned a refund receipt. The logic behind the refund was programmable and could be modified to provide any kind of written

<sup>3</sup> <https://circulareconomy.europa.eu/platform/en/good-practices/refinds-battery-refund-machine-old-batteries-coupons-new-batteries-out>

<sup>4</sup> In April 2017, 1 AUD ≈ 6.5 NOK

receipt format, such as a discount coupon. Battery types were recognised through optical size sensors and could accept a total capacity of 50kg. The cost of the RVMs was unable to be identified. The machine was stated to be fireproof and especially developed for being able to contain batteries.

The machine was designed for implementation at battery collection points such as retail stores and battery manufacturers. Enabling collection points such as retail stores to introduce incentives while collecting statistics on returned batteries.

Due to the lack of information available, the RVM price, weight, and dimensions could not be ascertained during the desktop research.

### **Volkswagen and DDB Russia**

Volkswagen, in partnership with marketing agency DDB-Russia, implemented battery RVMs in different parts of Russia. The RVMs were rolled out under Volkswagen's Think Blue campaign, in April 2015<sup>5</sup>. The campaign was a marketing exercise and not a genuine product stewardship scheme. The machines were installed at local community shops, where consumers were able to deposit used batteries into the RVMs and receive small goods such as stress toys, water bottles, and t-shirts. The machines were said to be able to collect around 1,000 batteries per month<sup>6</sup>. The specifications for the machines used during the campaign could not be verified during desktop research.

The above findings indicate that there are currently no RVMs accepting batteries anywhere in the world. As such, RVMs are not recommended as a viable avenue for B-cycle battery collections.

<sup>5</sup> <https://www.famouscampaigns.com/2015/04/volkswagen-create-vending-machine-that-uses-old-batteries-as-payment/>

<sup>6</sup> <https://www.adforum.com/case-studies/vw-think-blue-vending-machine-converts-old-batteries-into-gifts>



## 10. Appendix B – Cost to Provide Fireproof Storage Containers to Households

The indicative cost to provide storage containers to all households in Australia ranges from at least \$670 million to upwards of \$2.2 billion, depending on the capacity of the containers provided.

Desktop research into suitable containers that households can use to as temporary storage for used batteries was conducted. 5 example containers were selected and are listed below (Table 4). In order to determine the most suitable fireproof household battery storage containers for B-cycle implementation, results from desktop research were analysed via the following criteria.

- + Volume – the storage capacity of the container;
- + Weight – the mass per unit of the storage container;
- + Price per unit – the price of one storage container;
- + Fire rating – the product’s advertised fire resistance where applicable; and,
- + Safety – the product’s advertised safety features, such as locking mechanisms.

**Table 4: Fireproof household storage containers comparison**

Container	Volume	Weight	Price per Unit	Fire Rating	Safety Features
 <p>First Alert Fire Safe and Waterproof Protection Chest<sup>7</sup></p>	5.4L	9kg	\$72 per unit \$13.3/L	30 minutes at 843°C	Lock and key. Waterproof, fully submersible.
 <p>SentrySafe Fireproof Safe Box<sup>8</sup></p>	S – 5.16L M – 7.8L L – 10.2L	S – 5.7kg M – 9.3kg L – 13kg	Per unit prices: S: \$30 - \$75 M: \$75 - \$90 L: \$100 - \$150  \$/L: S: \$5.8 - \$14.5 M: \$9.6 - \$11.5 L: \$9.8 - \$14.7	30 minutes at 843°C	Lock and key. Water resistant for up to 72 hours.

<sup>7</sup> Bunnings

<sup>8</sup> SentrySafe

 <p><b>Roloway Fireproof Bag<sup>9</sup></b></p>	19.4L or 4.5kg	0.76kg	\$25 - \$40 per unit  \$/L \$1.3 - \$2.1	Can withstand a <b>maximum of 1094°C for 10 seconds.</b>	Zipper with holes for suitcase style padlock
 <p><b>Generic fireproof bag<sup>10</sup></b></p>	9.7 litres	0.15kg	\$5 - \$8 per unit  \$/L: \$0.5 0 \$0.8	Service temperature of 800°C	Zipper with holes for suitcase style padlock

### Assumptions

- + One container for every household in Australia, i.e. 9.275 million<sup>11</sup> households.
- + Cost of one small (5L) container: \$72<sup>12</sup>.
- + Cost of one large (10L) container: \$244<sup>13</sup>.
- + The containers considered in this calculation were rated to withstand 843°C for 30 minutes and are equipped with lock and key mechanisms.
- + Price per container (AUD) collected from publicly available online retail websites in June 2024.

The costs presented do not consider other expenses such as logistics.

### Battery Fires

The starting temperature, duration, and maximum temperature of battery fires are dependent on battery chemistry, size, and material components. Battery fires can burn extremely hot, due to thermal runaway of internal components. Thermal runaway is an uncontrollable exothermic reaction within a battery, leading to rapid temperature increase, component breakdown, and potential fire or explosion.

<sup>9</sup> [Amazon](#)

<sup>10</sup> [MadeinChina](#)

<sup>11</sup> 2021 Australian National Census

<sup>12</sup> [https://www.bunnings.com.au/first-alert-fire-safe-and-waterproof-protection-chest\\_p4211221](https://www.bunnings.com.au/first-alert-fire-safe-and-waterproof-protection-chest_p4211221)

<sup>13</sup> <https://www.officeworks.com.au/shop/officeworks/p/sentry-safe-10-2l-fire-and-water-resistant-chest-ssfkw10>

Using high nickel lithium-ion batteries as an example:

- + The thermal runaway onset temperature is approximately 95°C.
- + The thermal runaway trigger temperature is approximately 230°C.
- + Once the thermal runaway process begins, maximum temperatures can reach approximately 640°C on the battery surface, and approximately 1,120°C internally.
- + Onset of thermal runaway for other battery chemistries, such as nickel cadmium, may occur at as low as 54°C.

Containers shortlisted in Table 1 may provide adequate protection against battery fires for a short period of time. However, safety risks increase as the containers get filled up due to the internal temperatures being significantly higher compared to the surface in a thermal runaway.

# 11. Appendix C – EU Batteries Regulation

During the Regulatory Options Assessment, Washington State’s (USA) mandatory regulations were included in the analysis over the European Union (EU) regulation, as it is smaller size, simpler in scope, and more applicable in scale. The EU Batteries Regulation was not considered in the regulatory options assessment as the differences between the broader European and Australian contexts make it difficult to apply the implications of the regulation directly to the lens of Australian battery product stewardship.

## Context

The first EU legislation on batteries and waste batteries was the EU Directive on Batteries and Accumulators, effective since 2006. To update the directive, the European Commission proposed a new battery regulation aligned with the European Green Deal and the EU’s Circular Economy Action Plan. The European Parliament adopted the Batteries Regulation 2023/1542 on July 12, 2023, replacing the old EU Batteries Directive. The pre-existing directive will be repealed in 2025 by the new Batteries Regulation. The regulations are binding in their entirety and are directly applicable in EU member states, whereas the previous Batteries Directive are not, and had to be first transposed into national law by all member states of the EU.

## Objectives

The objective of the EU Batteries Regulation is to make batteries sustainable throughout their entire life cycle – from the sourcing of materials to their collection, recycling and repurposing. The regulations also aim to encourage the growth of a competitive and sustainable battery industry, aiding Europe’s transition to clean energy and reducing reliance on fuel imports<sup>14</sup>. The regulation is the first EU legislation that takes a full life-cycle approach to managing the environmental impacts of batteries, where sourcing, manufacturing, use and recycling are all addressed within a single law<sup>15</sup>.

## Applicability

A summary of the key aspects concerning the applicability of the EU Batteries Regulation is as follows:

- + The regulation is mandatory and is fully controlled by government. Unlike the previous battery directive where EU Member States could choose the methods by which the directive’s targets were to be met, the regulation’s binding articles prevent Member States from implementing the legislation in their own ways. Strong mandatory approaches such as this significantly remove the ability of the organisations like the Battery Stewardship Council to manage and administer a battery stewardship scheme.

<sup>14</sup> [https://environment.ec.europa.eu/topics/waste-and-recycling/batteries\\_en#overview](https://environment.ec.europa.eu/topics/waste-and-recycling/batteries_en#overview)

<sup>15</sup> [https://environment.ec.europa.eu/news/new-law-more-sustainable-circular-and-safe-batteries-enters-force-2023-08-17\\_en](https://environment.ec.europa.eu/news/new-law-more-sustainable-circular-and-safe-batteries-enters-force-2023-08-17_en)

- + Not only is the EU regulation mandatory, but it is also legally binding across all 27 EU Member States. For comparison, there are no mandatory product stewardships schemes established under the federal Recycling and Waste Reduction Act 2020<sup>16</sup>.
- + The scope of the EU regulation is much larger due to the law being made under the European Green Deal, which aims to achieve goals of globally significant scale, including:
  - + No net emissions of greenhouse gases by 2050; and,
  - + The decoupling of economic growth from resource use.

Additionally, the regulation covers a greater scope of batteries, dividing batteries into different types by their application and weight, i.e.: portable batteries, electric vehicle batteries, industrial batteries, with a sub-category: stationary battery energy storage systems, light means of transport batteries, and starting, lighting and ignition batteries. Different battery types are affected by different requirements.

- + The Regulation introduces specific obligations for numerous battery stakeholders, from producers, importers, distributors, to authorised EU representatives, and recyclers. For example, the rules set out obligations for manufacturers such as carbon footprint declaration, recycled content requirements for produced batteries, performance and durability requirements, removability and replaceability obligations, etc. On top of this, the specific requirements for stakeholders vary depending on the type of batteries concerned.
- + The regulation is designed to support the EU single market. The single market is a trade bloc with distinct common rules and standards to ensure free movement of goods, capital, services, and people that all participating EU states are legally committed to follow.
- + Differences between Australia's and the EU's overarching contextual differences, such as logistical requirements, infrastructure availability, and economies would likely make several aspects of the EU regulation more challenging to implement in Australia.
- + EU regulation is interlinked and reliant on broader supporting legislative frameworks of the EU itself. This compounds the complexity of assessing the feasibility of the regulation in an Australian context.
- + The EU regulation includes elements which could be adopted in Australia to improve product stewardship and waste battery management. These include:
  - + Digital product passports: Mandatory labelling on batteries and associated packaging, allowing anyone to access clear information on battery capacity, origin, lifecycle, and hazardous substances.
  - + Carbon footprint declarations: Batteries placed on the market are accompanied by a carbon footprint declaration, enabling the batteries with the lowest carbon footprints to be identified.
  - + Recycled content requirements for batteries placed on the market, ensuring that a minimum level of recovered materials are incorporated into new battery production.
  - + Performance and durability requirements for batteries.
  - + Removability and replaceability standards: products incorporating batteries must allow for the batteries to be readily removed and replaced at any time during the lifecycle of the product.

<sup>16</sup> Currently the only mandatory product stewardship scheme in Australia is for used oil, established under the Product Stewardship (Oil) Act 2000. This scheme is not related to the RAWR Act 2020, which currently governs product stewardship in Australia. As the scheme was established under a separate framework to B-cycle, it is not applicable for comparison.

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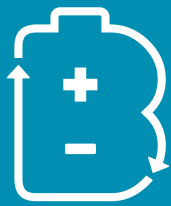
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# Battery Stewardship Council



**B-cycle**  
Battery  
Recycling

## Regulatory Options Analysis

A Report by MRA Consulting Group



This Scheme is authorised by the Australian Competition & Consumer Commission (ACCC), accredited by the Australian Government, and has received financial support from the Australian Government and industry.