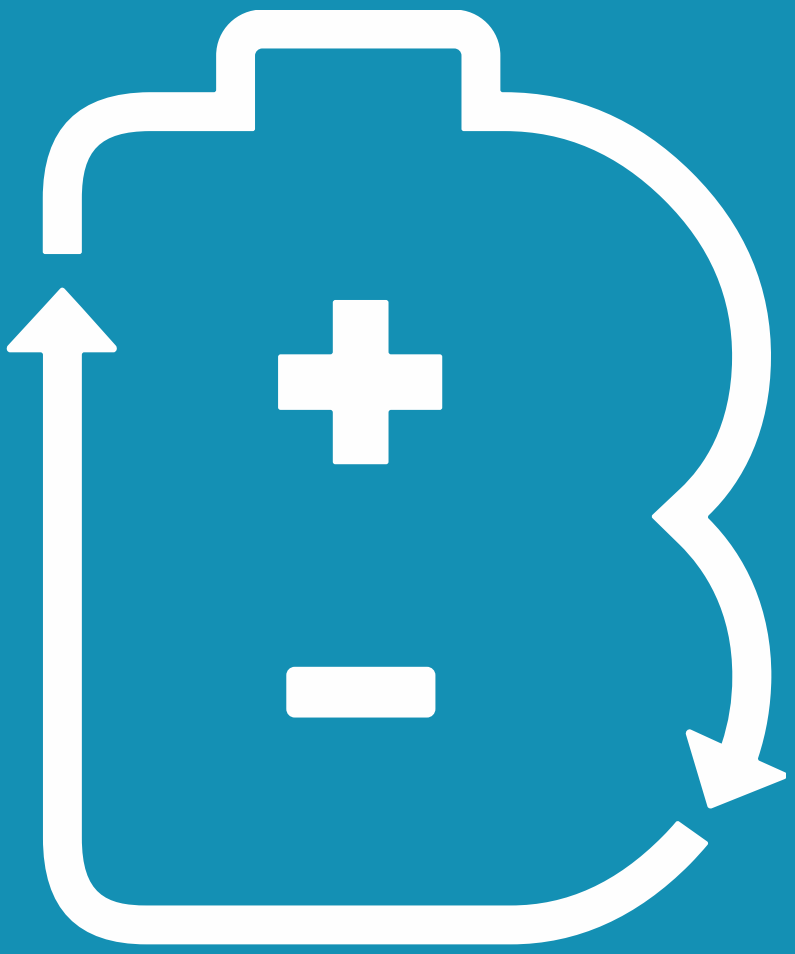

B-cycle 2.0 Design

February 2025

B-cycle Battery Recycling

Battery Stewardship Council

Australian Government Accredited Product Stewardship Scheme

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FOREWORD

This paper represents the culmination of 12 months of iterative modelling, planning and consultation to provide a **Scheme Design** for B-cycle 2.0 that can future proof battery stewardship for years to come.

The Scheme Design proposed in this paper will form the basis for our ACCC re-authorisation scheduled for lodgement in December 2024 to be active from 1 July 2025 to 30 June 2030.

The most significant change from B-cycle 1.0 to B-cycle 2.0 is the ability for the BSC to adapt and change the funding model in response to changes in the risk profile and economic conditions. The revised approach is intended to enable BSC to accelerate behavioural change, reduce risk, increase diversion and facilitate circularity outcomes.

This document outlines the key elements of B-cycle 2.0 and uses scenarios to illustrate how the revised Scheme Design would be implemented in FY2026. These scenarios consider variables such as forecasted collection rates, participation levels and expanded scope, all of which will be subject to government decisions on regulatory reform, particularly to address free riders.

In preparing this paper, it is acknowledged that this consultation is occurring at both a complex and pivotal time, with an Environment Ministers Meeting held in early December 2024, anticipated to result in the establishment of model legislation in 2025. In this context, the BSC believed it important to advance decisively, recognising both the urgency of addressing current Scheme limitations and the strategic importance of securing full ACCC re-authorisation to initiate Scheme re-design, development, and implementation in FY2026.

In this context, each scenario has been rigorously modelled based on independent research and direct input from Scheme participants, ensuring a robust, data-driven foundation for understanding how the Scheme will evolve over time.

It is important to note that the modelling presented in the various scenarios contained within this consultation paper does not reflect BSC's operational budget or determine the final Scheme delivery framework. Rather, it seeks to demonstrate how the Scheme Design will enable BSC to better respond to market conditions and evolve the various "elements" of the scheme, once the Scheme Design is re-authorised by the ACCC. At that point, a detailed financial budget will be prepared, guided by continued stakeholder engagement, strong corporate governance and subject to Board oversight and approval.

Through our extensive engagement with stakeholders across the value-chain, the BSC has carefully considered feedback and can report that the proposed final Scheme design delivers the change needed for transformative stewardship. High points include:

- 75% of small electronics and electrical equipment with batteries (SEEE) can be diverted immediately through the B-cycle network
- modulated levies apportion the cost of operations and risk mitigation to specific product types
- new and innovative processing rebates focussed on delivering circularity outcomes
- cost recovery for collection and sorting operations
- injecting funding into behavioural change and incentives.

Libby Chaplin
CEO, Battery Stewardship Council

1. THE BATTERY STEWARDSHIP COUNCIL STRATEGIC FRAMEWORK

1.1 Our mission

To create a circular economy for batteries as a leading model for product stewardship

This will be achieved by ensuring B-cycle continues to be a trusted and successful Scheme that conserves resources, reduces environmental and health impacts, and improves safety.

1.2 Long term strategic objectives

Zero battery waste to landfill through strong community accessibility, and engagement	Safety risks of batteries are successfully managed by the community and industry.	The domestic battery recycling industry is self-sustaining, profitable, and growing.	Sustained financial security and efficiency for the Scheme.

1.3 Short term operational goals

Ensure the financial stability of the Scheme through the re-authorisation of B-cycle 2.0 to deliver impactful stewardship outcomes.	Strengthen the validation and audit processes to ensure that participant obligations are met, and Scheme integrity is maintained.	Expand the scope of the Scheme to include additional battery categories, such as vapes, small electrical and electronic equipment (SEEE), & portable energy storage batteries.
Expand the national network of battery B-cycle accredited Drop off points to make battery recycling safer and more convenient for consumers.	Raise awareness and encourage positive behaviour around safe battery use, handling, storage, and recycling.	Continue engaging with industry to strengthen battery stewardship in the energy storage and electric vehicle sectors.

1.4 Key value-chain partners

Scheme Participants	Importers	Manufacturers	Distributors	Users	
	Retailers	Drop off points (DoPs)	Collectors	Sorters	Processors
Strategic partners	Independent auditors	Governments	Consultants & researchers	Resource recovery sector	

1.5 Key performance metrics

Environmental	Volume collected	Collection rate	Recovery rate	Emissions reduction
Social	Accessibility	Participation	Safety	Consumer awareness
Economic	Levies collected	Rebates paid	Economic sustainability	Network Employment

2. REGULATORY REFORM AS THE FOUNDATIONAL PILLAR

+ BSC recognises that to achieve its mission, full industry participation in the Scheme is required.
+ BSC and its members agree regulation to address free riders is an essential pillar of B-cycle 2.0.
+ BSC strongly supports regulation to compel participation in the Scheme
+ The new Scheme Design enables B-cycle 2.0 to dovetail with future regulatory outcomes as they evolve.

3. SCHEME OVERVIEW

The Scheme is governed by the Battery Stewardship Council, a not-for-profit company limited by guarantee which was incorporated for the purposes of administering the battery stewardship scheme known as B-cycle. BSC's role is to implement the Scheme in accordance with its corporate objectives.

Figure 1. Overview of B-cycle 2.0 core pillars

3.1 Accreditation

The existing framework for accreditation will be applied in B-cycle 2.0. Accreditation provides the foundation of the B-cycle Scheme and includes general commitments for all participants and additional commitments specific to a participant's role in the battery value chain. The figure below identifies the current participant categories, however these may evolve as the Scheme evolves, for example Drop off points specific to particular products or collection channels.

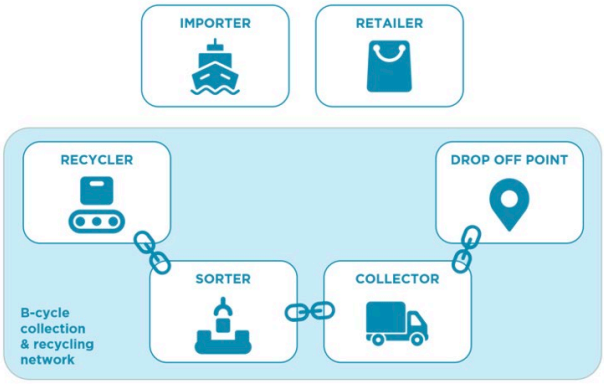


Figure 2. B-cycle accredited participants covered by these protocols

All participants commit to general obligations and specific obligations depending on their role in the battery value chain. These are defined in documents which are regularly updated and made available online, for example:

- B-cycle Commitment Document
- Network Accreditation Protocols
- Container Protocols
- Drop off Point Code of Practice.

The accreditation process involves verifying these commitments through various methods appropriate to the participant's role. These include document reviews, audits, Drop off point health checks, and chain of custody verification. This approach ensures a safe and transparent process for managing batteries, from importation to recycling, effectively closing the loop. BSC may also augment the accreditation process by entering contracts to enable:

- different methods of service delivery
- specific activities such as dedicated collection networks or containers
- facilitating service delivery on a state-by-state basis or on a product category basis.

BSC would evaluate the need for these activities based on factors such as:

- appropriate sustainability outcomes
- efficiency of service or cost considerations
- differing collection channels for emerging products.

3.2 The B-cycle Scheme principles

These principles shown below are largely the same as those originally authorised, with three strategic changes proposed and highlighted for emphasis.

SHARED RESPONSIBILITY	CIRCULAR ECONOMY OUTCOMES
+ Everyone in the supply chain has a role to play. + Level playing field through regulatory reform focused on the elimination of free riders. + Government support for industry development, stewardship procurement and efficient regulation.	+ Improve the economics of collecting and recycling of batteries. + Increase availability of battery materials for remanufacturing into new batteries and other products. + Facilitate positive procurement policies in industry and government.
FAIR AND EQUITABLE FUNDING MODEL	**IMPROVED SUSTAINBILITY OUTCOMES**
+ Funding model addresses market failure on a cost recovery basis. + Procedures ensure that obligated parties will not be double charged. + Funding model designed to adapt to market forces.	+ Eliminate batteries from landfill to avoid environmental impacts. + Maximise resource recovery from waste batteries while minimising reliance on finite raw materials. + Leverage the expansion of existing collection and recycling process to reduce emissions.
INCREASED COMPETITION, INNOVATION, & EFFICIENCY	**FOCUS ON RISK REDUCTION & IMPROVED SAFETY**
+ Effective and efficient processes to assure Scheme commitments are met. + Invest in research to support program development: best practice, innovation, stocks & flows. + Address known barriers to increased recovery of waste batteries to offset market failures.	+ Improved product safety & labelling standards. + Reduce the risk of button battery injuries. + Reduce the risk of lithium battery fires. + Collaborative development of best practices and control measures to enhance safety
FOCUS ON BEHAVIOURAL CHANGE	**TRANSPARENCY & ACCOUNTABILITY**
+ Strong branding and marketing with a clear call to action. + Incentives for stewardship action. + Leverage marketing and education efforts of industry participants and synergistic schemes.	+ Uphold good governance standards as a not-for-profit stewardship organisation with Board oversight and audits. + Outsources import data reporting to independent agency. + Verification of collection, processing, EH&S, downstream shipments and costs.

Figure 3. B-cycle stewardship principles

4. FUTURE PROOFING THE B-CYCLE SCHEME

4.1 Challenges with the B-cycle 1.0 scheme design

BSC identified the key challenges that hindered the effectiveness of B-cycle 1.0, with the fundamental structural challenge being the absence of free-rider regulation. The key challenges were rigorously tested and validated through extensive stakeholder consultation to ensure a comprehensive understanding and inform the development of the B-cycle 2.0 scheme.

Figure 4. Challenges with B-cycle 1.0

4.2 B-cycle 2.0 strategic priorities

To overcome these challenges, BSC established the following strategic priorities to inform the Scheme design process.

	Accelerate battery collections and diversion from the waste and recycling sector.
	Adapt to emerging battery products and chemistries
	Adapt to fluctuating market and economic realities
	Improve sustainability outcomes across the battery life cycle
	Address the changing risk profile of batteries
	Improve the value proposition for the recycling sector to participate
	Positively impact button battery safety
	Future-proof battery stewardship and the recycling sector

4.3 B-cycle 2.0 overview

As BSC has moved through the review process, it has been important to so in the context of existing achievements and strengths. The illustration below has not changed throughout the consultation process and remains a robust framework for future proofing B-cycle 2.0.

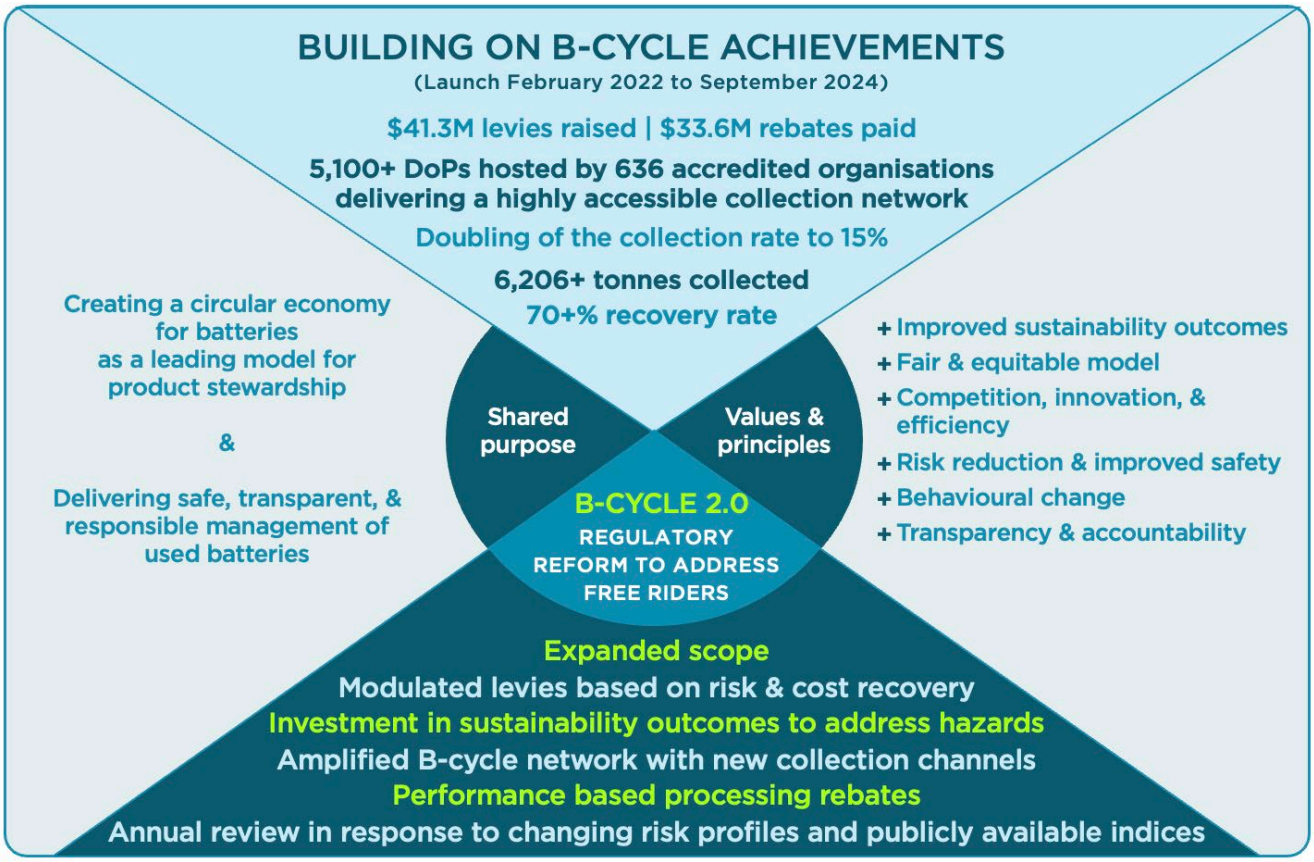


Figure 5. The B-cycle 2.0 framework

5. B-CYCLE 2.0 DESIGNED TO RESPOND TO CHANGE

B-cycle 1.0 highlighted the challenges in navigating an ever-evolving and volatile battery market and recycling sector. Based on the experience and insight learned from operating B-cycle, BSC recognises that building adaptability and flexibility into every facet of the Scheme Design is key to the long-term success of B-cycle 2.0.

The core principle of the B-cycle 2.0 Scheme Design is to set out a framework, for use within the period of the ACCC authorisation, to allow BSC to define the Scheme's structure and operations, rather than attempting to specify the financial metrics over the entire period of authorisation.

The most critical takeaway from B-cycle 1.0 is clear: the rapidly shifting stewardship landscape demands a flexible and adaptive approach. We have listened to our stakeholders, and it is evident that the current static financial model is failing to deliver the outcomes BSC strives for and the results our stakeholders rightfully expect.

5.1 Accelerating diversion of high-risk battery types

The Scheme Design framework proposed in this paper aims to serve as the core enabler for addressing the evolving risk profile of batteries. By leveraging the accreditation process and funding model, B-cycle seeks to prioritise high-risk batteries effectively. The figure below illustrates how this revised framework can drive substantial improvements in lithium and button battery diversion rates.

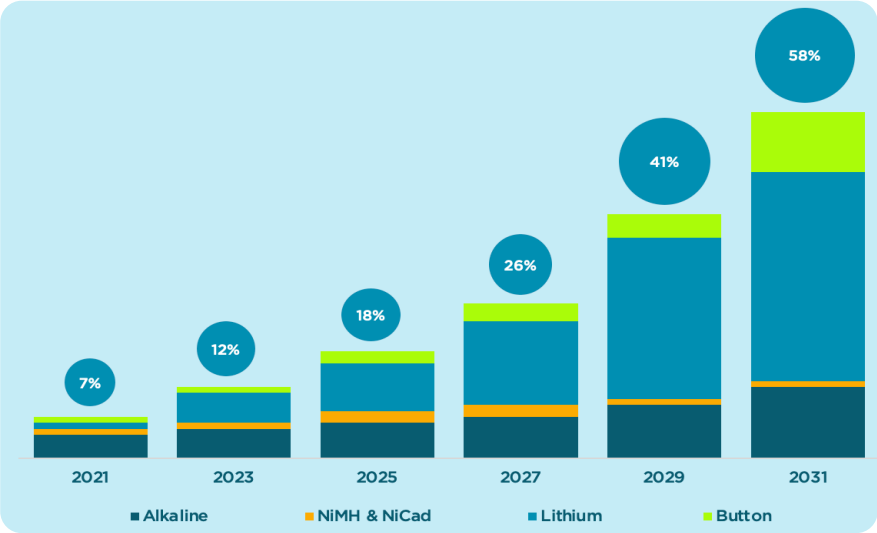


Figure 6. Possible collection rate growth by battery type

5.2 Responding to uncertainty

The Scheme Design framework proposed in this paper aims to establish a robust structure enabling BSC to navigate the complexities, tensions, and nuances of a dynamic and evolving battery stewardship ecosystem, as illustrated below. Additionally, the framework supports a continuous improvement process, facilitating the preparation of annual financial plans (subject to Board approval) to enhance the scheme's ability to achieve its defined objectives. Through this iterative approach, BSC will continue to engage with industry and government to identify priorities for the coming year. This addresses limitations in the previous ACCC authorisation, which lacked the flexibility needed to fulfil our mission in a rapidly changing operating environment.

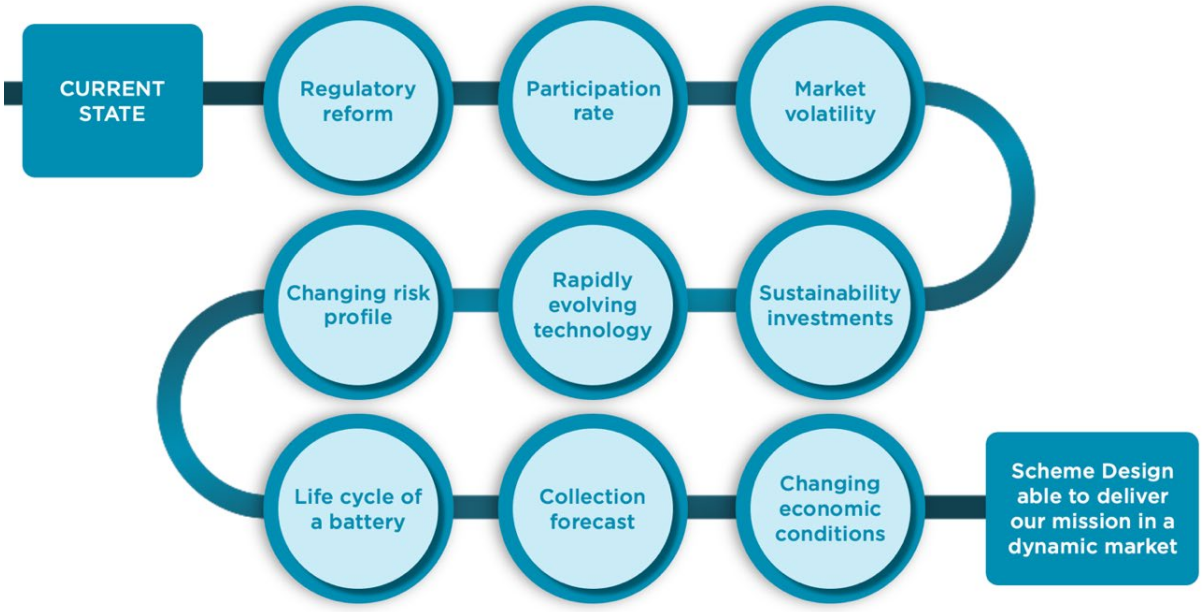


Figure 7. Dynamic stewardship ecosystem

5.3 Introduction of Scenarios to demonstrate responsiveness

The Scheme Design framework proposed in this paper aims to provide a robust and adaptive approach to addressing the unique challenges of 2025, as governments determine the scope, performance metrics, and timelines for new regulations. In anticipation of these changes, BSC has developed a range of scenarios to explore potential responses to various outcomes. Rather than endorsing a single scenario, BSC views these as part of a continuum that will evolve alongside regulatory settings and broader drivers of circularity and safety.

The following section outlines the core elements of B-cycle 2.0 and uses these scenarios to demonstrate how the revised Scheme Design could be implemented in FY 2026. Key variables include forecast collection rates, participation levels, and an expanded scope, all influenced by government decisions on regulatory reform to address free riders.

The scenarios presented offer a structured framework to evaluate the scope and implications of different approaches to the B-cycle 2.0 Scheme Design. They focus on ensuring alignment with BSC's strategic objectives, regulatory requirements, sustainability goals, and stakeholder expectations, while providing the flexibility needed to adapt to a rapidly changing stewardship landscape.

It is important to note that the modelling presented for each scenario does not reflect BSC's operational budget or determine the final Scheme delivery framework. Once the Scheme Design is re-authorised by the ACCC, a detailed financial budget will be prepared, guided by strong corporate governance and subject to Board oversight and approval.

The breadth of scenarios analysed reflects BSC's need to navigate the demand for a dynamic and responsive product stewardship Scheme in an evolving regulatory landscape. The analysis provides a range of pathways that differ in economic and environmental impact, capacity to address the changing risk profile of batteries, and readiness for state-led regulatory shifts.

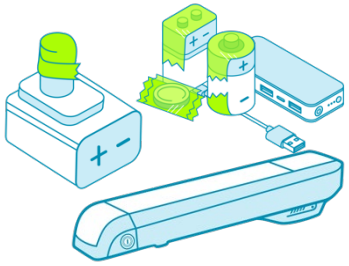
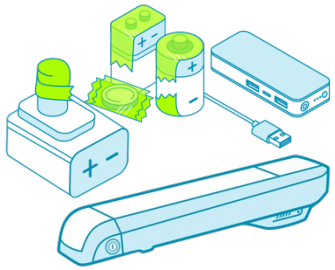
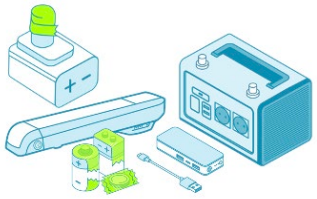
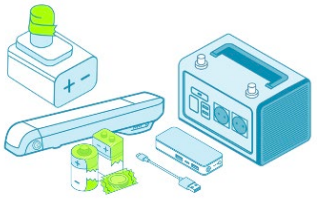
Scenarios 4 and 5 have been modelled in response to calls from industry and governments for the application of **transformative product stewardship to fully address the urgent fire risk** of battery products in the waste and recycling sector, which is experiencing an estimated 10,000 to 12,000 fires a year.

Scenario 5 is a game changer and responds to industry, government and stakeholder feedback. It has been modelled to provide a holistic far-reaching solution to the battery fire challenge. Our achievements in the first two years of operation demonstrate BSC's track record in delivering a globally recognised stewardship scheme. Scenario 5 leverages B-cycle's existing network, the largest fit-for-purpose collection network for SEEE in Australia. B-cycle 2.0 (Scenario 5) can commence immediately and will rapidly scale collection channels for the expanded SEEE scope.

This scenario analysis examines and highlights potential pathways, carefully balancing the needs of stakeholders—including industry participants, government bodies, and the community. It prioritises public safety, addresses the fire risks associated with unsafe battery disposal practices and aims to drive progress in advancing the circular economy.

5.4 Overview of Scenarios modelled

To illustrate how the framework would apply to different environmental factors, government decisions or scheme settings, BSC has modelled several scenarios. These are outlined below with further details in the Appendices. Appendix 1 details possible growth in collection rates without increasing the levy. Appendix 2 provides an evaluation of the various scenarios. Appendix 3 provides a levy sensitivity analysis by each scenario. Appendix 6 provides details of each scenario that have been modelled.

Scenario	1	2	3	4	5
TITLE	Sustaining the basics	Collector & recycler rebate stability	Guarding the foundations of our success	Major channel expansion & risk reduction	Transformational stewardship
SUMMARY	Business as usual + CPI ONLY	Cost recovery for collection, sorting & processing	Scenario 2 + sustainability investments	Scenario 3 + financial support for NFPs & MRFs + boost in sustainability investments	Scenario 4 + SEEE and vapes + scaled sustainability investments
SCOPE	Existing scope, loose or removable batteries under 5kg	Existing scope, loose or removable batteries under 5kg	Existing scope plus larger portable energy storage >60kg	Existing scope plus larger portable energy storage >60kg	Existing scope plus larger portable energy storage >60kg, Small electronics and electrical equipment & vapes
					
DESCRIPTION	+ Flat levy + Flat rebates + Adjusted for cost of living	+ Eco-modulated levies + Performance-based processing rebates + Cost recovery for collection & sorting operations + No Sustainability Investments to reduce risks	+ Modest Sustainability Investments + Regulated participation increasing revenue	+ Significant increase in Sustainability Investments & incentives for safe diversion + Resource Recovery Expansion Fund to assist NFPs and MRFs set up costs for safe diversion + A new Resource Recovery Safety Rebate available to NFPs and MRFs	+ Significant additional Sustainability Investments & incentives + Phased in based on channel capability + Priority 1: SEEE <3kg – (75%) could be accommodated in the existing B-cycle network. + Priority 2: <7kg (93%) + Priority 3: <10kg (97%)

Australian Government Accredited Product Stewardship Scheme

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.

5.5 B-cycle 2.0 overview of modelled scenarios and design elements

REGULATORY STATUS		VOLUNTARY	FREE RIDER REGULATORY REFORM			
SCENARIO DESIGN ELEMENT		SCENARIO 1	SCENARIO 2	SCENARIO 3	SCENARIO 4	SCENARIO 5
ANNUAL REVIEW	Levy & rebate adjustments for CPI	✓	✓	✓	✓	✓
	Operational elements		✓	✓	✓	✓
SCOPE	Loose batteries & loose batteries in product up to 5kg	✓	✓	✓	✓	✓
	Removeable batteries up to 5kg	✓	✓	✓	✓	✓
	Light means of transport	✓	✓	✓	✓	✓
	Portable energy storage up to 60kg			✓	✓	✓
	Additional battery types of Vapes & SEEE				✓	✓
SCENARIO INCLUSIONS	Cost recovery for transport		✓	✓	✓	✓
	Cost recovery for sorting		✓	✓	✓	✓
	Cost recovery for processing		✓	✓	✓	✓
	New channels and larger collection points				✓	✓
SUSTAINABILITY INVESTMENTS	Button battery home containers			✓	✓	✓
	Button battery safety communications			✓	✓	✓
	Lithium safety communications			✓	✓	✓
	Lithium safe container subsidy			✓	✓	✓
	Transport compliance subsidy			✓	✓	✓
	Larger batteries container subsidy			✓	✓	✓
	Incentive Program (batteries)			✓	✓	✓
	Portable energy safety communications			✓	✓	✓
	Resource recovery expansion fund				✓	✓
	Resource recovery infrastructure fund				✓	✓
	Damaged battery infrastructure fund				✓	✓
	SEEE communications					✓
	Incentive program (SEEE & Vapes)					✓
	Vape communications					✓

6. SCHEME DESIGN ELEMENTS

The essential Scheme Design elements are highlighted in the graphic below and described in the following sections. These six elements are the basis of the continuous Scheme Design cycle of "Plan-Do-Check-Act" that will be cornerstone of B-cycle 2.0.

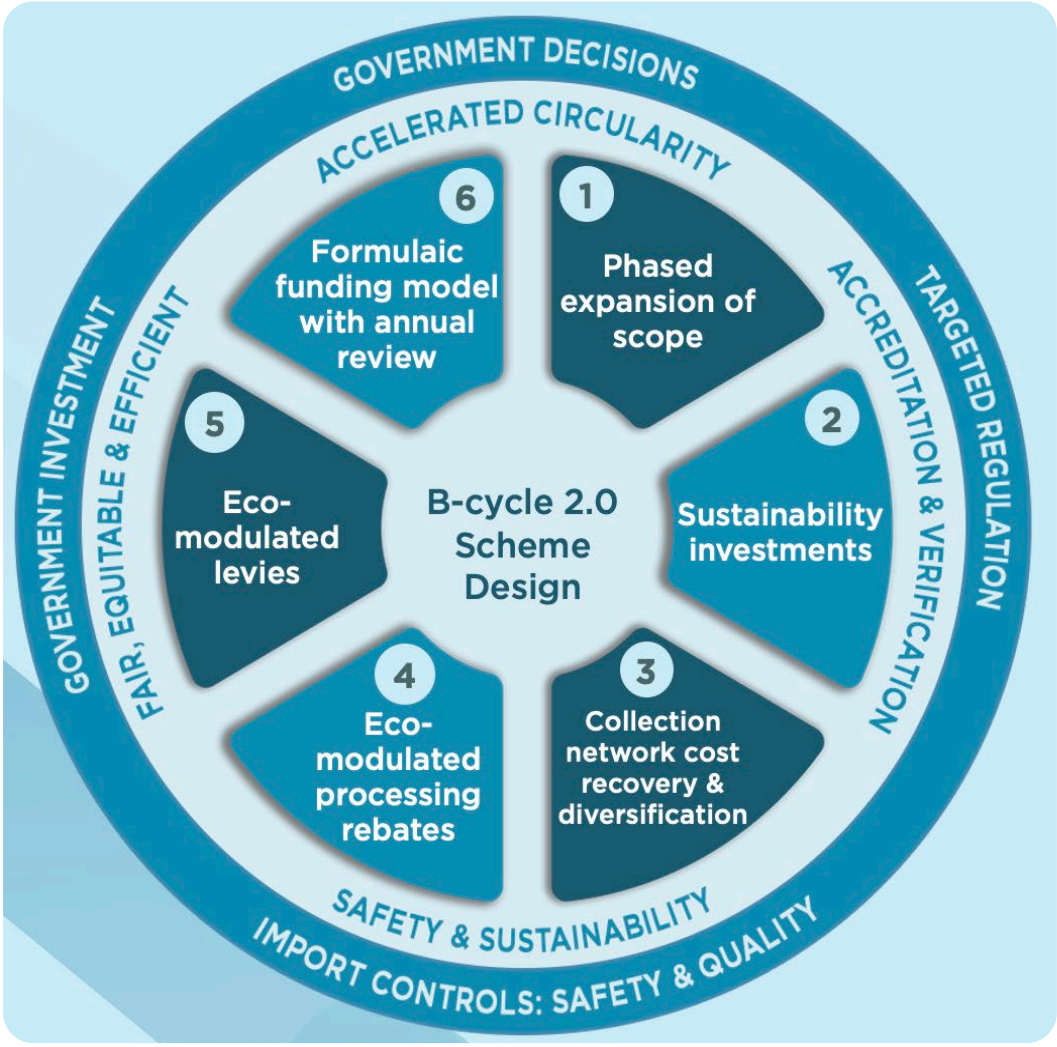


Figure 8. B-cycle 2.0 Scheme Design

These elements are supported and guided by the BSC Stewardship Principles to deliver fairness & equity, safety & sustainability, accreditation & verification, and accelerated circularity.

Importantly the Scheme cannot operate within a vacuum and will need to respond to government decisions on investment, battery import controls, and regulation to address free riders.

DESIGN ELEMENT 1: PHASED EXPANSION OF SCOPE

Strategic Intent	+ To leverage the largest fit for purpose e-waste collection network in Australia to address the evolving risk profile of other battery products.

BSC's current ACCC Authorisation defines the Scheme's scope as encompassing "**all battery types with a market failure**." In its initial phase, B-cycle 1.0 implemented a targeted, phased roll-out, prioritising the following areas:

+ loose handheld batteries under 5kg
+ products with easily removeable batteries under 5kg e.g. Power Tools
+ micro-mobility products e.g. e-bikes and scooters.

This strategic approach, along with strong stakeholder support, has provided a strong foundation for future Scheme expansion, allowing for phased and controlled growth while prioritising risk management. To address the growing risk and demand for a comprehensive solution, scope expansion is proposed across two key dimensions:

+ **the type** of products with batteries e.g. includes products with embedded batteries
+ **the size** of loose batteries e.g. larger power banks or portable energy storage products.

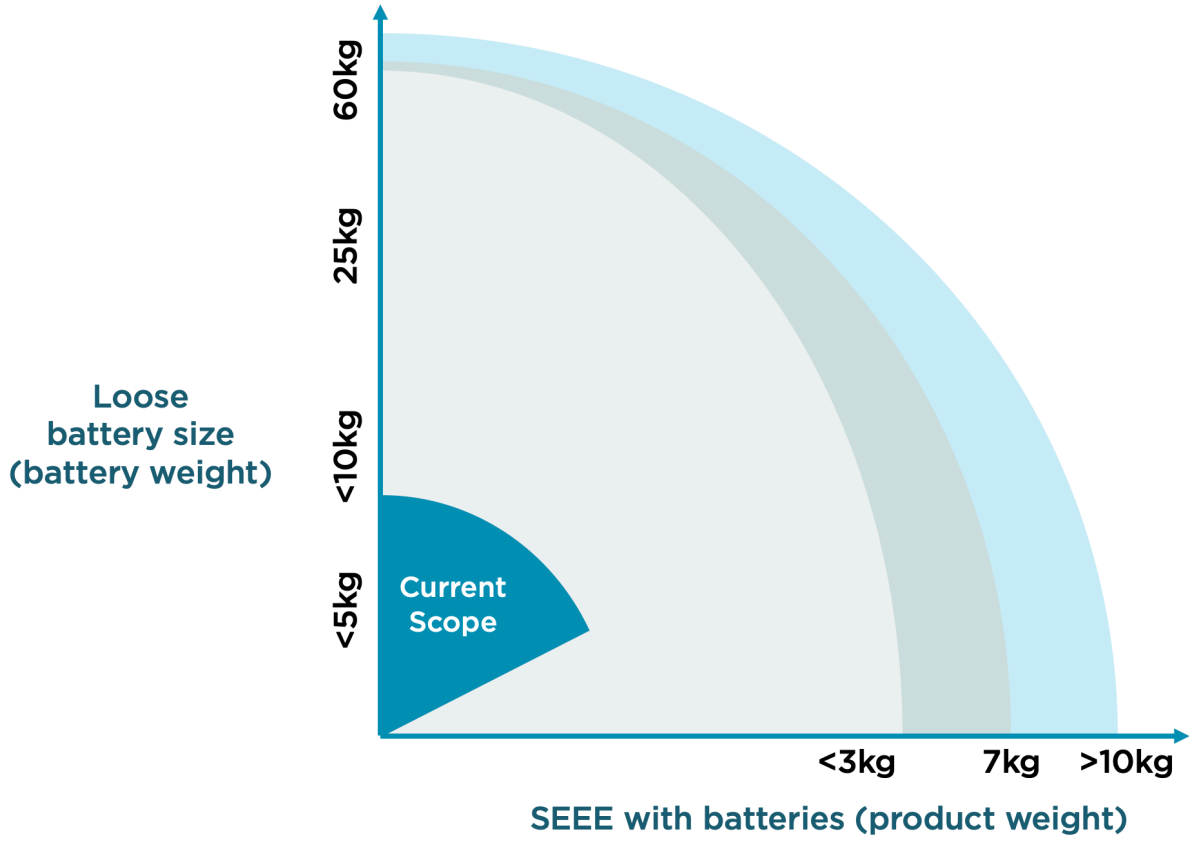


Figure 9. Phased scheme expansion

BSC is well placed to expand collection and processing across these two dimensions. Broadening the scope to include all Small electrical and Electronic Equipment (SEEE) with batteries is both feasible and practical. This expansion would enable BSC to manage the collection and processing of both the batteries and the products, as the majority of these items contain embedded batteries.

An analysis of this sector by product weight highlights that 75% of all SEEE products are under 3kg and that these products can be immediately accepted by the B-cycle collection network providing funding is secured via industry participation and contribution. A list of the SEEE products to be included within the B-cycle 2.0 scope is in Appendix 5.

An expanded scope based on battery size is also well-placed for inclusion. Larger batteries, weighing up to 60kg and requiring a two-person lift, can be collected, sorted, and processed using the existing B-cycle processes. Expansion down this path will require a network of different collection bins for large-scale batteries and such bins would need to be located at suitable Drop off points, for example, a retail outlet is not a suitable site.

This phased expansion of the B-cycle 2.0 scope would encompass all batteries experiencing market failure, provided they do not require deinstallation by a qualified technician, ensuring their inclusion within B-cycle. Those batteries not covered by this immediate expansion would include:

+ Residential and Grid-scale Battery Energy Storage Systems (BESS)
+ Battery Electric and Hybrid Vehicles (EV).

BESS and EV batteries can be included within the remit of BSC but are not being proposed for inclusion within B-cycle 2.0 as it is proposed in this paper.

Due to the nature of BESS and EV's, and the specific requirements regarding deinstallation and collection, an alternate bespoke approach will be required to address these battery types. BSC will continue its consultation with the BESS and EV industry sectors to pursue product stewardship in this space. Further information on the BSC's consultation with the EV sector can be found at www.b-cycle.com.au

DESIGN ELEMENT 2: SUSTAINABILITY INVESTMENTS

Strategic Intent	+ To enable the Board to identify and fund investments to efficiently deliver sustainability outcomes. + Investments can evolve over time in response to the changing risk profile and market failures associated with different batteries or battery related products. + B-cycle 2.0 will direct investments towards addressing the environmental, safety or educational & behavioural change outcomes of the Scheme.

Collecting and processing used batteries is an important part of B-cycle's remit but it is not the only area that must be addressed. Activities that are essential, and which may require additional investment beyond the operational cost of collection and processing may be:

+ mitigating safety risk
+ raising awareness of battery recycling and educating consumers
+ supporting the expansion of safe collection bins
+ recognising consumer behaviour change.

Different battery and product types present different safety risks, awareness requirements, or specific collection bins and these differing investment costs will be apportioned to the relevant battery or product type.

The investment portfolio will evolve over time as markets and government intervention changes. For example, the introduction of regulation will change the specific marketing activities regarding industry participation and awareness. Given that Government has legislated to control vapes in the marketplace, Government intervention would be required to fund end-of-life management of vapes and will inform the investment requirements to support collection and consumer awareness for vapes.

Annual investment plans will be developed, with certain expenditures potentially amortised over a number of years. BSC will ensure fiscal responsibility and control over the investment portfolio through strong governance with Board oversight and approval.

The following chart indicates the types of sustainability investments that could be applied depending on the various scenarios being presented. A description of these possible sustainability investments is provided in Appendix 4.

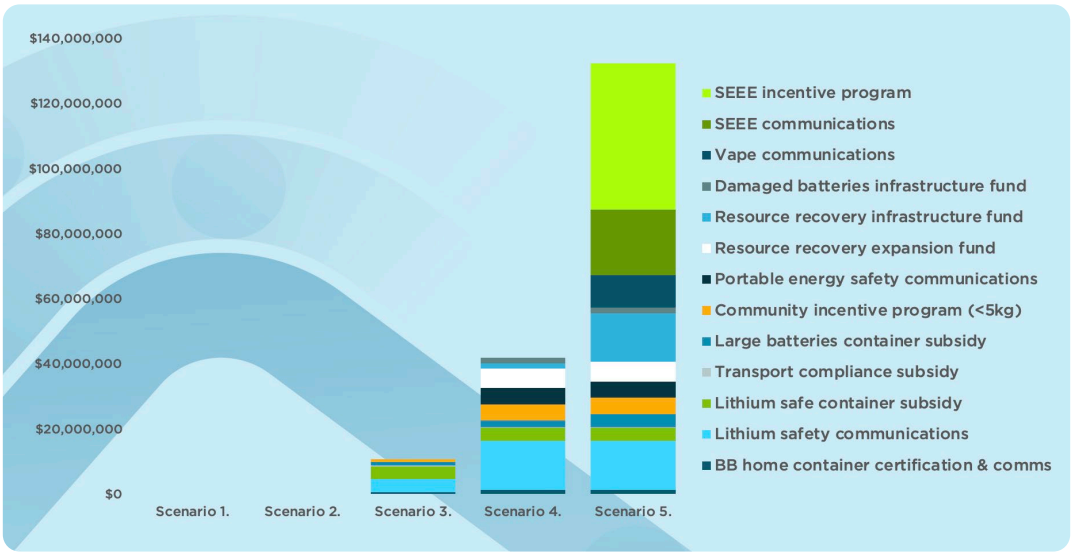


Figure 10. Possible investments by scenario

DESIGN ELEMENT 3: COLLECTION NETWORK COST RECOVERY & DIVERSIFICATION

Strategic Intent	+ B-cycle 2.0 adopts a cost recovery approach to the establishment of collection rebates for the Scheme. + Rebates are designed to cover the operational costs of collecting and sorting batteries + Generate diversification within the collection network to strengthen and derisk the Scheme.

The rebates are designed to cover the operational costs of collecting and sorting batteries e.g. labour cost and transport cost, and not the capital expenses of collection e.g. collection bins or Drop off point infrastructure.

Capital expenses are not factored into the rebate rate, however, funding may be allocated for specific items, such as container safety through proposed sustainability investments pending approval by the BSC Board. Financing for capital investments in facilities, sorting or processing equipment, is readily available through financial markets and various existing Government industry development mechanisms. These are outside the scope of this paper.

Collection and sorting rebates are set irrespective of the battery or product type and are paid on a per kg basis upon verification of required evidence by the BSC. By adopting a cost-recovery approach to the rebate rate, it is envisaged that this will incentivise new entrants into the collection and sorting sector and in turn facilitate diversity within the network.

The following table highlights collection and sorting rebates across various scenarios for FY 2026 that could be considered by the Board once the regulatory environment is confirmed.

Scenario 1 adopts a simple application of a CPI increase to the existing rebates while scenarios 2 - 5 adopt the cost recovery method. Incidental rebates are removed in scenarios 4 and 5 on the basis that all collections are channelled through the main collection network. Scenarios 4 and 5 propose the introduction of a new safety rebate. It is designed to quickly boost the diversion rate by providing not for profits with a rebate to expand Drop off points.

Rebate type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
	Indicative rebates				
Metro	$3.12	$5.00	$5.00	$5.00	$5.00
Regional	$4.37	$6.00	$6.00	$6.00	$6.00
Remote	$8.11	$8.00	$8.00	$8.00	$8.00
Incidental	$1.25	$1.50	$1.50	NA	NA
Safety rebate	NA	NA	NA	$2.00	$2.00
Sorting rebate	$1.25	$1.20	$1.20	$1.20	$1.20

Figure 11. Possible rebates based on scenario modelling

DESIGN ELEMENT 4: ECO-MODULATED PROCESSING REBATES

Strategic Intent	+ To enable a new performance-based processing rebate that incentivises the recycling sector to deliver higher value processing outcomes and reward those organisations who have invested in advanced technologies and processes.

As a result of feedback during Stage 1 Consultation, the processing rebates have been completely redesigned to focus on incentivising circularity outcomes using the Used Oil Regulation as a basis.

Element	Button batteries	Alkaline/ Carbon Zinc	Lithium ion	Lithium Iron Phosphate	Li Primary	NiCad	NiMH	SEEE & Vapes
Processing rebate ($/ kg)	$7.50	$1.35	$5.40	$7.00	$20.00	$4.50	$1.35	$6.50

Figure 12. Indicative eco-modulated processing rebates

The following matrix provides a high-level overview of the proposed performance-based framework for the eco-modulated processing rebate program. Rebates will be paid upon the receipt or observation of evidentiary requirements by the BSC. Its application is implemented through a calculator which has been tested by all recyclers, some collectors, and an independent consultant. It will continue to evolve as we understand more about battery processing outcomes.

CIRCULARITY OUTCOMES ASSESSMENT		
PART A: CIRCULARITY PERFORMANCE OUTCOMES (Weighted rebate attributed to each stage of processing outcome for each material output)		
Level 1: REUSE	Recovered materials used in new batteries or battery components (e.g. black mass for cathode manufacture or electrolyte recovery)	100%
Level 2: RECYCLING	Recovered materials used in products where they can be recovered again (e.g. copper plate)	
Level 3: DOWNCYCLING	Recovered materials used in un-recoverable or lower environmental value end products (e.g. concrete or fertiliser)	75%
Level 4: ENERGY RECOVERY	Recovered materials used for energy recovery	25%
Level 5: TREATMENT	Recovered materials encapsulate in legally permitted manner	
Level 6: LANDFILL RESIDUAL	Recovered/ residual materials disposed of in landfill	

Figure 13. Indicative processing rebates performance hierarchy

CIRCULARITY OUTCOMES ASSESSMENT		
PART B: BEST PRACTICE PERFORMANCE BONUS **(Maximum 10% performance bonus of total rebates paid PART A)**		
Scheme Growth	Regular proactive marketing of the B-cycle Scheme	3%
Environment	Sustainability Report published annually including Scope 1 & 2	1%
	Risk management plan includes climate risks and evidence of emissions reduction strategy (i.e. clean energy use)	1%
Scheme Conformance	Audit completed in accordance with the agreed audit schedule and accreditation protocols	1%
	No non-conformities	1%
	Corrective Action Plan not required and/or remediation completed within 3 months	1%
Transparency	Additional information and data requests supplied to BSC within agreed accreditation protocols	2%

Figure 14. Indicative processing rebate performance bonus

Notes:

1. Scenario 5 illustrates how the Scheme could expand to include small electronics and electrical equipment with batteries, Level 1. could be adapted for reuse of SEEE.
2. Best practice performance for the collection network is currently addressed thorough metro, regional, remote rebates to improve accessibility. In future years - with Scheme growth and through the annual review process – BSC will work with industry to co-design a performance bonus model that supports the objectives of B-cycle. For example, clean energy use and green fleet investments that minimise transport emissions.

DESIGN ELEMENT 5: ECO-MODULATED LEVIES

Strategic Intent

+ **A core principle of B-cycle 2.0 is fairness and equity. Eco-modulated levies ensure that the true cost of stewardship is apportioned to those battery or product types that are responsible for health, safety and environmental costs.**

Eco-modulated levies are designed to ensure that the true cost of stewardship is apportioned to those batteries or product types that are responsible for health, safety and environmental costs. Levies reflect those costs associated with collection, sorting, processing and sustainability investments for each battery or product type.

The levy rate is determined by dividing the total stewardship cost for that battery or product type by the volume of product placed on market.

However, not all battery or product types are equal and factors such as product life cycle, collection volume, and market volatility will have an impact on determining the levy rate, for example:

+ **Alkaline batteries**
  + A mature product with a short life cycle, collection volume are high, but the cost to process used alkaline batteries is low and there is little need for sustainability investments with this chemistry.
  + As a result, the levy rate is relatively low and stable.
+ **Lithium-ion batteries**
  + A somewhat mature product with a long lifecycle but collection volume is growing.
  + Represents the highest risk due to the volatile nature of the chemistry.
  + Processing costs are high, and sustainability investment is needed to mitigate safety risk.
  + This cost is apportioned across a growing market and the levy rate is growing at this time.
+ **Lithium Iron Phosphate (LFP)**
  + A relatively new market in a growth phase, the life cycle is long, so the collection volume is low.
  + The cost to process used LFP is high, and sustainability investment is needed for appropriate containers.
  + This cost is apportioned across a growing market and the levy rate is relatively low at this time.
+ **Nickel Cadmium (NiCd)**
  + An older battery type in market decline.
  + The life cycle is long, but many batteries are reaching end of life and collection is relatively high.
  + Safety issues are not such a concern but as the market is in decline the levy rate is high and will grow as the market declines further.

The following table shows indicative levy rates by battery or product type based on the different scenarios presented.

Eco-modulated levies (cents/EBU)	Scenario 1 (18% Collection)	Scenario 2 (18% Collection)	Scenario 3 (20% Collection)	Scenario 4 (30% Collection)	Scenario 5 (30% Collection)
Alkaline, NiMH, & Carbon Zinc	5.23	5.57	5.43	8.57	8.93
Button batteries	5.23	8.02	6.74	13.28	16.26
Lithium-ion	5.23	8.50	6.58	15.57	15.57
Lithium-Iron Phosphate	NA	NA	2.19	8.22	8.22
Lithium Primary	5.23	78.11	96.40	195.46	142.30
Nickel Cadmium	5.23	31.88	29.55	51.10	53.96
SEEE & vapes	NA	NA	NA	NA	22.93

Figure 15. Indicative levy rates

DESIGN ELEMENT 6: ANNUAL REVIEW

Strategic Intent	+ To provide a transparent process for evaluating the elements of the Scheme Design and consideration for the desired collection outcomes to enable the BSC and its Board to establish an annual financial plan for the Scheme.

The annual review framework recognises the nascent and ever evolving changing battery market in Australia and the need for an adaptable product stewardship scheme.

The following annual review principles and the process as detailed in the first B-cycle 2.0 Consultation Paper are essential components of the proposed B-cycle 2.0 Scheme design.

ANNUAL REVIEW FRAMEWORK PRINCIPLES

Agility	Adaptability	Co-design	Evolution	Expansion	Evaluation
Realignment of the Scheme based on indices, collection forecasts and emerging risks to support Scheme obligations.	Based on changing market conditions including battery flows, free-riders and fluctuations in commodity demand.	Collaboration with Scheme participants to ensure the evolution of the Scheme meets industry and community objectives	Based on best practice circularity and changing market conditions including product design, flows and commodity demand.	Scale and grow the Scheme as market and regulatory conditions mature, creating a level playing field.	Ensure long-term sustainability of the Scheme through ongoing evaluation of performance.

PROCESS FOR THE B-CYCLE ANNUAL FINANCIAL REVIEW

The process for annual review is based on the following steps and is explained further in the description below. The review will involve stakeholder consultation and Board approval of the Annual Plan. Full details can be found in Appendix 7:

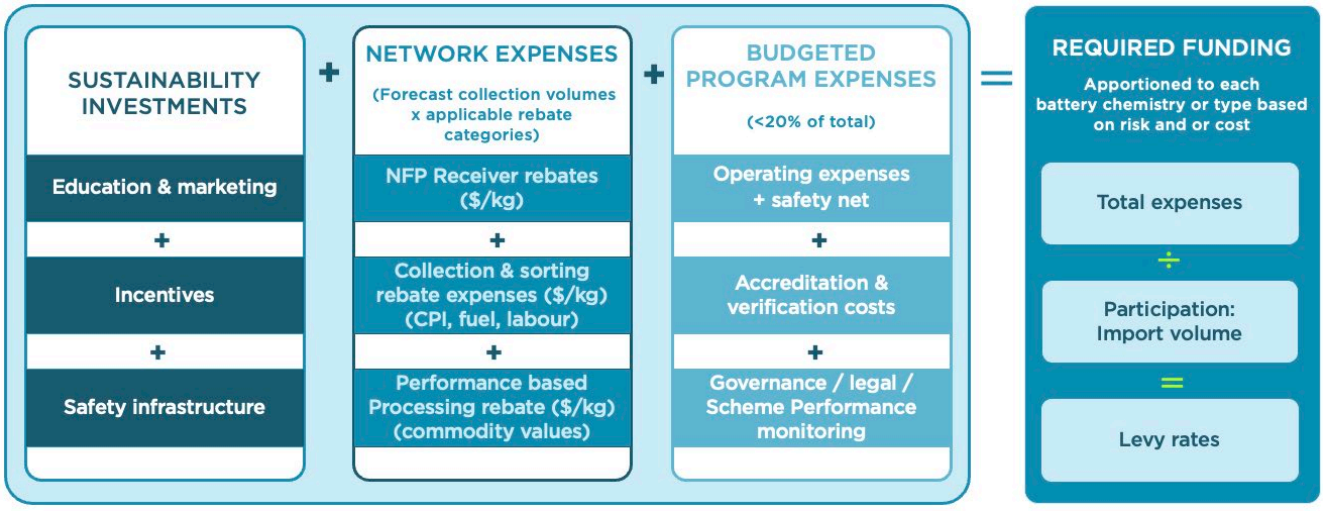


Figure 16. Proposed formulaic approach

The financial model to be adopted will enable cost recovery of Scheme operations and investment in sustainability measures; and that it will be reviewed and adjusted as required on an annual basis. Annual adjustments can either increase or decrease levies and rebates, allowing the Scheme to reflect the realities of real-world economics.

The annual review of the Scheme's financial basis will be reviewed and adjusted to reflect the changing nature of each battery type. It is important to establish an annual review cycle to provide certainty to industry for a 12-month period. The review process is proposed to be conducted in the third quarter of each financial year with the new rates to begin 1 July each year.

The review will be undertaken in line with the following steps.

1. Define the size of the in-scope market and the importer participation rate	+ Project the overall market size as defined through market research commissioned by BSC. + Determine battery types and Electrical and Electronic Equipment to be considered in-scope for the next 12 months. + Review the previous year's importer participation rate and set the participation rate based on current and future regulatory status.
↓	
2. Prepare an annual plan for sustainability investments and operational expenses	+ Review of the long-term investment plan and confirm the efficacy of the proposed plan. + Review of the previous year's investments and the outcomes achieved. + Identify new initiatives or issues to address that may have arisen over the previous 12 months.
↓	
3. Evaluate the suitability of the per/kg rebate rates	+ Review the Collection, Sorting, and Processing Rebates and adjust based on formulas aimed at accounting for changes in key metrics that drive the cost of the relevant rebates. + The metrics used will be based on publicly available or industry-based data. + The formulas will be reviewed periodically to ensure the methodology continues to reflect the economic situation for each rebate type.
↓	
4. Define the forecast collection rate target for the following year	+ The collection rate for used batteries will be based on the percentage of in market batteries reaching their end of life, or Available for Recycling (AfR). + BSC will use research data to identify the quantity of AfR. + AfR will be calculated based on historical import data and the expected life of different battery types.
↓	
5. Calculated modulated levies to secure sufficient funding for each battery type to operate the Scheme	+ The levy rate will be set on a cents/EBU (24 grams) and a $/kg basis for each battery or product type. + The aim is to set the levy rate so that sufficient revenue is collected to cover the costs of collection, sorting, processing, sustainability investments, and operational costs and to deliver a financial surplus equivalent to operating the Scheme for a 6-week period.
↓	
6. Board approval of Annual Plan	+ The BSC will seek stakeholder input and submit the draft annual plan for approval by the BSC Board.

Figure 17. Annual review process

Appendices

Appendix 1. POTENTIAL COLLECTION RATE GROWTH WITH NO VARIATION TO LEVY RATES

The Scenario 3, 4, & 5 models assume that not all market sectors will reach full participation in year 1 even if regulated. Market sectors with longstanding participation will have a higher participation rate from day one, while new or yet to participate market sectors will have a low participation rate in the first year. However, to understand the growth potential of each model, two scenarios have been considered:

1. **a conservative scenario assuming a variable rate of participation ranging from 50% to 95%. This scenario is the basis for the scenarios presented in this paper**

2. **a full participation scenario with participation rates set at 100%.**

These two scenarios aim to project probable collection rates while maintaining the levy rates at the same dollar value and assuming that all other metrics remain fixed.

The conservative scenario is considered to be the most realistic outcome for year 1, while the full participation scenario highlights the collection rate growth potential as regulation takes effect.

This analysis indicates:

+ Scenario 5 presents the greatest collection rate growth opportunity of the 3 regulated models with the collection rate able to double from 30% to 63% as participation increases.
+ Scenarios 3 and 4 provide limited growth opportunity without requiring an increase in the levy rate.

SCENARIO		3		4		5	
TITLE		Guarding the foundations of our success		Major channel expansion & risk reduction		Transformational stewardship	
Participation		Conservative	Full Participation	Conservative	Full Participation	Conservative	Full Participation
Indicative funding		$56,096,000	$65,408,000	$117,556,000	$136,326,000	$931,980,000	$1,808,958,000
Imports (t)		22,907	29,140	22,907	29,140	106,050	201,731
Forecast collection*	Volume (t)	4,138	4,946	6,207	7,640	53,015	110,530
	Rate	20%	21%	30%	37%	30%	63%

1 Collection rate based on waste arising

Australian Government Accredited Product Stewardship Scheme

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.

Appendix 2. SCENARIO EVALUATION

SCENARIO ASSESSMENT	SCENARIO 1	SCENARIO 2	SCENARIO 3	SCENARIO 4	SCENARIO 5
Strategic appraisal					
Alignment to BSC objectives	Low	Low	Medium	High	High
Effectiveness in delivering product stewardship	Low	Low	Medium	Medium	High
Effectiveness in addressing community need & achieving benefits	Low	Low	Medium	Medium	High
Effectiveness in maintaining and expanding participation	Low	Low	Medium	Medium	High
Alignment with government priorities	Low	Low	Medium	Medium	High
Social, environmental and sustainability appraisal					
Delivers significant public benefit	Low	Low	Medium	High	High
Accelerates the development of a circular economy	Low	Low	Medium	Medium	High
Enhances behavioural change	Low	Low	Medium	High	High
Economic appraisal					
In scope import volume (tonnes)	12,837	12,837	22,907	22,907	106,050
Indicative funding based on scenario modelling	$28,000,000	$38,000,000	$56,000,000	$117,000,000	$931,000,000
Levy sensitivity analysis target < 5%	Average levy sensitivity range across all scenarios from 1.3% to 3.1%				
Revenue security through strong participation	Low	Low	Medium	Medium	High
Deliverability appraisal					
Effectiveness in addressing the risks to waste and recycling sector	Low	Low	Low	Medium	High
Effectiveness in achieving network diversity	Low	Medium	High	High	High
Effectiveness in Network growth and scope expansion	Low	Low	Low	High	High

Appendix 3. Levy Sensitivity analysis comparison of the modelled scenarios

Battery type	Weight average (grams)	Median product price	Indicative Levy cents/EBU Equivalent battery Unit (24gms)					Indicative levy amount $					Median product price Indicative levy as a % of sale price				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Alkaline / Carbon Zinc AA Cell	23	$1.55	5.23	5.57	5.43	8.57	8.93	$0.05	$0.05	$0.05	$0.08	$0.09	3.23%	3.44%	3.36%	5.30%	5.52%
Button Battery	2	$16	5.23	8.02	6.74	13.28	16.26	$0.004	$0.007	$0.006	$0.011	$0.014	0.03%	0.04%	0.04%	0.07%	0.08%
Lithium-ion Power tool battery	741	$375	5.23	8.50	6.58	15.57	22.93	$1.61	$2.62	$2.03	$4.81	$7.08	0.43%	0.70%	0.54%	1.28%	1.89%
Lithium-ion e-Bike battery	3500	$2,500	5.23	8.50	6.58	15.57	22.93	$7.63	$12.40	$9.60	$22.71	$33.44	0.31%	0.50%	0.38%	0.91%	1.34%
Lithium Iron Phosphate Battery (100wh)	9500	$799	NA	NA	2.19	8.22	8.22	NA	NA	$8.67	$32.54	$32.54	NA	NA	1.08%	4.07%	4.07%
Lithium Iron Phosphate Portable Energy Storage System (100wh)	16000	$1,500	NA	NA	2.19	8.22	8.22	NA	NA	$14.60	$54.80	$54.80	NA	NA	0.97%	3.65%	3.65%
Lithium Primary (Lithium Thionyl Chloride) cell	16	$20	5.23	78.11	96.40	195.46	142.30	$0.03	$0.52	$0.64	$1.30	$0.95	0.17%	2.60%	3.21%	6.52%	4.74%
Average levy sensitivity													0.83%	1.46%	1.37%	3.11%	2.98%

Note: Scenarios 4 and 5 reflects significant forecast increase in collection volume (from 18% - 30%) in year 1 of B-cycle 2.0.

Appendix 4. EXAMPLE SUSTAINABILITY INVESTMENTS

The following table provides a high-level description of the possible Sustainability Investments that the Board may consider to meet BSC obligations and legal requirements.

Activity	Description
Button Battery Home Containers	Implementation of Button Battery Home Storage Container Certification Program including third party accreditation, assistance with commercialisation planning and promotion.
Button Battery Safety Communications	Communications campaign to inform the community about the safety hazards of button batteries and how to mitigate those risks.
Lithium Safety Communications	Communications campaign to inform the community about the safe use/charging of Lithium-ion batteries and the safe disposal at end of life.
Lithium Safe Container Subsidy	A subsidy available to Collectors to develop and produce containers for the safe collections of Lithium batteries and damaged batteries in accordance with defined program requirements.
Transport Compliance Subsidy	Assistance for industry to implement and comply with changes to transport regulations for hazardous materials.
Larger batteries container Subsidy	A subsidy available to Collectors to develop and produce containers to collect and transport large scale batteries (up to 60kg).
Incentive Program (batteries)	A range of evidence-based funding programs will be designed to incentivise to safe recycling of used batteries through partnerships with retailers and other aligned organisations.
Portable Energy Safety Communications	Communications campaign to inform the community about the safe use/charging of higher energy density batteries and the safe disposal at end of life.
Resource Recovery Expansion Fund	Assisting financial requirements for MRFs to obtain permits and licenses to aggregate and store larger volumes of batteries.
NFP Container Fund	Financial assistance for Collectors to provide appropriate containers at not-for-profit sites.
Damaged Battery Infrastructure Fund	Container subsidy for containers for damaged batteries to be located at specific sites (e.g. Transfer Stations, Fire Stations).
SEEE Communications	Communications campaign to inform the community about the safe use of SEEE and safe disposal at end of life.
Incentive program (SEEE & Vapes)	Incentives program to encourage return of SEEE and vapes through the program.
Vape Communication	Communications campaign to inform the community about the safe use of vapes and safe disposal at end of life.

Appendix 5. PROPOSED SEEE AND VAPE PRODUCTS FOR INCLUSION IN B-CYCLE 2.0

The following table provides an overview of the proposed SEEE products for initial inclusion in Scenario 5.

Vacuum Cleaners (excl. professional)
Personal Care equipment (e.g. toothbrushes, hairdryers, vibrators, razors)
Telecommunication equipment (e.g. cordless phones, answering machines)
Small Consumer Electronics (e.g. headphones, remote controls)
Portable Audio & Video (e.g. MP3, e-readers, car navigation)
Music Instruments, Radio, Hi-Fi (incl. audio sets)
Speakers
Cameras (e.g. camcorders, photo & digital still cameras)
Household Tools (e.g. drills, saws, high pressure cleaners, lawn mowers)
Toys (e.g. car racing sets, electric trains, music toys, biking computers, drones)
Game Consoles
Leisure equipment (e.g. sports equipment, electric bikes)
Household medical equipment (e.g. thermometers, blood pressure meters)
Professional medical equipment (e.g. hospital, dentist, diagnostics)
Household Monitoring & Control equipment (alarm, heat, smoke, excl. screens)
Professional Monitoring & Control equipment (e.g. laboratory, control panels)
Electronic Cigarettes (Vapes)

Appendix 6. B-CYCLE 2.0 SCENARIOS MODELLED USING FY 2026 AS THE BASE

SCENARIO 1. SUSTAINING THE BASICS

+ Provides a business-as-usual approach plus application of CPI to reflect inflation
+ Does not include any increases to rebates or sustainability investments

PROPOSED SCOPE		
	✓ Loose batteries & loose batteries in product <5kg	✗ <60kg Portable energy storage
	✓ Removeable batteries up to 5kg	✗ Small electronics & electrical equipment & vapes (Refer Appendix 4.)
	✓ Light means of transport	

INDICATIVE FINANCIAL MODEL

Import volume	12,837 t	Collection volume	3,677 t	Collection rate	18%

INDICATIVE FUNDING	$27,000,000

INDICATIVE LEVY DISTRIBUTION

POSSIBLE REBATES	Rebate: Collections	Rebate: Sorting	Rebate: Processing
	$12,111,000	$4,589,000	$4,589,000
POSSIBLE SUSTAINABILITY INVESTMENTS	Button Battery Home Storage Container Certification & comms	Battery safety communications	Community Incentive Program
	$0	$0	$0
	Safe container subsidies	Large format container subsidies	Transport compliance subsidy
	$0	$0	$0
POSSIBLE PROGRAM EXPENSES	Operational Safety Net of 6 weeks	Governance	Performance monitoring & research
	$3,000,000	$192,000	$726,000
	BSC operations	Verification	Marketing & education
	$1,938,000	$357,000	$493,000

INDICATIVE MODELLED LEVIES AND REBATES

Levy rate	Cents/ EBU	$/ KG
All chemistry and battery types	5.23	$2.18

Collection rebates	$/ kg
Metro	$3.12
Regional	$4.37
Remote	$8.11
Incidental	$1.25

Sorting rebates	$/ kg
	$1.25

Eco-modulated processing rebates	$/ kg
All chemistry and battery types	$1.25

SCENARIO 2. COLLECTOR & RECYCLER REBATE STABILITY

+ Substantial rebate increases to cover the operational cost of collection, sorting & processing
+ Provides a short-term solution to enable B-cycle to operate until regulation is achieved
+ Eco-modulated levies driven by collection volume and processing costs associated with each battery type
+ This scenario does not include any sustainability investments

PROPOSED SCOPE		
	✓ Loose batteries & loose batteries in product <5kg.	✗ <60kg Portable energy storage
	✓ Removeable batteries up to 5kg	✗ Small electronics & electrical equipment & vapes (Refer Appendix 4.)
	✓ Light means of transport	

INDICATIVE FINANCIAL MODEL

Import volume	12,837 t	Collection volume	3,677 t	Collection rate	18%

INDICATIVE FUNDING	$38,000,000

INDICATIVE LEVY DISTRIBUTION

POSSIBLE REBATES	Rebate: Collections	Rebate: Sorting	Rebate: Processing
	$17,882,000	$4,413,000	$9,101,000
POSSIBLE SUTAINABILITY INVESTMENTS	Button Battery Home Storage Container Certification & comms	Battery safety communications	Community Incentive Program
	$0	$0	$0
	Safe container subsidies	Large format container subsidy	Transport compliance subsidy
	$0	$0	$0
POSSIBLE PROGRAM EXPENSES	Operational Safety Net of 6 weeks	Governance	Performance monitoring & research
	$3,725,000	$192,000	$726,000
	BSC Operations	Verification	Marketing & education
	$1,938.000	$357,000	$493,000

INDICATIVE MODELLED LEVIES AND REBATES

Eco-modulated levies	Cents/ EBU	$/ KG
Alkaline, NiMH, & Carbon Zinc	5.57	$2.32
Button batteries	8.02	$3.34
Lithium-ion	8.50	$3.54
Lithium-Iron Phosphate	NA	NA

Eco-modulated levies	Cents/ EBU	$/ KG
Lithium Primary	78.11	$32.54
Nickel Cadmium	31.88	$13.29
SEEE & vapes	NA	NA

Collection Rebates	$/ kg
Metro	$5.00
Regional	$6.00
Remote	$8.00
Incidental	$1.50

Sorting	$/ kg
	$1.20

Eco-modulated processing rebates	$/ kg
Button batteries	$7.50
Alkaline / Carbon Zinc / NiMH	$1.35
Lithium ion	$5.40
Lithium Iron Phosphate	NA
Li Primary	$20.00
NiCad	$4.50
SEEE & vapes	NA

SCENARIO 3. GUARDING THE FOUNDATIONS OF OUR SUCCESS

+ Building on the initial Consultation Paper, with refinements to address industry feedback
+ Includes eco-modulated levies and strong participation due to regulation of free riders
+ Expand scope to include batteries up to 60kg
+ Introduces a performance-based processing rebate
+ Increases collection rebates and provides for sustainability investments to address risk

PROPOSED SCOPE		
	✓ Loose batteries & loose batteries in product <5kg.	✓ <60kg Portable energy storage
	✓ Removeable batteries up to 5kg	✗ Small electronics & electrical equipment & vapes (Refer Appendix 4.)
	✓ Light means of transport	

INDICATIVE FINANCIAL MODEL

Import volume	22,907 t	Collection volume	4,138t	Collection rate	20%

INDICATIVE FUNDING	$56,000,000

INDICATIVE LEVY DISTRIBUTION

POSSIBLE REBATES	Rebate: Collections	Rebate: Sorting	Rebate: Processing
	$20,127,000	$4,966,000	$10,477,000
POSSIBLE SUTAINABILITY INVESTMENTS	Button Battery Home Storage Container Certification & Comms	Battery safety communications	Community Incentive Program
	$450,000	$4,000,000	$1,000,000
	Safe container subsidies	Large format container subsidies	Transport compliance subsidy
	$4,000,000	$1,000,000	$250,000
POSSIBLE PROGRAM EXPENSES	Operational Safety Net of 6 weeks	Governance	Performance monitoring & research
	$6,121,000	$192,000	$726,000
	BSC Operations	Verification	Marketing & education
	$1,938,000	$357,000	$493,000

INDICATIVE MODELLED LEVIES AND REBATES

Eco-modulated levies	Cents/ EBU	$/ KG
Alkaline, NiMH, & Carbon Zinc	5.43	$2.26
Button batteries	6.74	$2.81
Lithium-ion	6.58	$2.74
Lithium-Iron Phosphate	2.19	$0.91

Eco-modulated levies	Cents/ EBU	$/ KG
Lithium Primary	96.40	$40.17
Nickel Cadmium	32.45	$13.52
SEEE & vapes	NA	NA

Collection rebates	$/ kg
Metro	$5.00
Regional	$6.00
Remote	$8.00
Incidental	$1.50

Sorting	$/ kg
	$1.20

Eco-modulated processing rebates	$/ kg
Button batteries	$7.50
Alkaline / Carbon Zinc / NiMH	$1.35
Lithium ion	$5.40
Lithium Iron Phosphate	$7.00
Li Primary	$20.00
NiCad	$4.50
SEEE & vapes	NA

SCENARIO 4. MAJOR CHANNEL EXPANSION & RISK REDUCTION

+ Scenario 3 + financial support for NFP & MFRS + boost in sustainability investments to reduce risk
+ Rapidly and effectively reduce risk in the waste and recycling sector
+ Significant increase in Sustainability Investments & incentives for safe diversion
+ Resource Recovery Expansion Fund to assist NFPs and MRFs set up costs for safe diversion
+ A new Resource Recovery Safety Rebate available to NFPs and MRFs

PROPOSED SCOPE		
	✓ Loose batteries & loose batteries in product <5kg.	✓ <60kg Portable energy storage
	✓ Removeable batteries up to 5kg	✗ Small electronics & electrical equipment & vapes (Refer Appendix 4.)
	✓ Light means of transport	

INDICATIVE FINANCIAL MODEL

Import volume	22,907 t	Collection volume	6,207 t	Collection rate	30%

INDICATIVE FUNDING	$117,000,000

INDICATIVE LEVY DISTRIBUTION

POSSIBLE REBATES	Rebate: Collections	Rebate: Sorting	Rebate: Processing
	$35,647,000	$7,448,000	$15,716,000
POSSIBLE SUTAINABILITY INVESTMENTS	Button battery home storage container certification & communications	Battery safety communications	Community incentive program
	$1,250,000	$15,000,000	$5,000,000
	Safe container subsidies	Large format container subsidies	Transport compliance subsidy
	$4,000,000	$2,000,000	$250,000
	Portable energy storage comms	Resource recovery expansion & infrastructure fund	Damaged battery infrastructure fund
	$2,250,000	$7,500,000	$1,750,000
POSSIBLE PROGRAM EXPENSES	Operational safety net of 6 weeks	Governance	Performance monitoring & research
	$12,363,000	$240,000	$907,000
	BSC operations	Verification	Marketing & education
	$2,422,000	$446,000	$ 616,000

INDICATIVE MODELLED LEVIES AND REBATES

Eco-modulated levies	Cents/ EBU	$/ KG
Alkaline, NiMH, & Carbon Zinc	8.57	$3.57
Button batteries	13.28	$5.53
Lithium-ion	15.57	$6.49
Lithium-Iron Phosphate	8.22	$3.43

Eco-modulated levies	Cents/ EBU	$/ KG
Lithium Primary	195.46	$81.44
Nickel Cadmium	51.10	$21.29
SEEE & vapes	NA	NA

Collection rebates	$/ kg
Metro	$5.00
Regional	$6.00
Remote	$8.00
Incidental	NA

Safety rebate	$/ kg
For NFPs & MRF sites	$2.00

Sorting rebate	$/ kg
	$1.20

Eco-modulated processing rebates	$/ kg
Button batteries	$7.50
Alkaline / Carbon Zinc / NiMH	$1.35
Lithium ion	$5.40
Lithium Iron Phosphate	$7.00
Li Primary	$20.00
NiCad	$4.50
SEEE & vapes	NA

SCENARIO 5. TRANSFORMATIONAL STEWARDSHIP

+ Designed to be a game changer in addressing the fire risk in the waste and recycling sector
+ Expand scope to include SEEE and leverage the largest fit for purpose SEEE collection network in Australia.
+ Eco-modulated levies, funding for safe collections sites for NFPs & MFRs
+ Significant investments in communications, incentives and safety
+ Driven by collection volume, sustainability investments, and processing costs for all portable batteries.

PROPOSED SCOPE		
	✓ Loose batteries & loose batteries in product <5kg.	✓ <60kg Portable energy storage
	✓ Removeable batteries up to 5kg	✓ Small electronics & electrical equipment & vapes (Refer Appendix 4.)
	✓ Light means of transport	

INDICATIVE FINANCIAL MODEL

Import volume	106,050 t	Collection volume	52,733 t	Collection rate	30%

INDICATIVE FUNDING	$931,000,000

INDICATIVE EXPENDITURE

POSSILBE REBATES	Rebate: Collections		Rebate: Sorting		Rebate: Processing	
	$313,396,000		$63,280,000		$308,518,000	
POSSIBLE SUTAINABILITY INVESTMENTS	Button Battery		Communications			
	Containers	Communications	Li-ion safety	Portable energy	SEEE	Vapes
	$250,000	$1,000,000	$15,000,000	$5,000,000	$20,000,000	$10,000,000
	Incentive program		Transport compliance subsidy		Container subsidies	
	Batteries	SEEE & vapes	Batteries		Li-ion	Larger batteries
	$5,000,000	$45,000,000	$250,000		$4,000,000	$4,000,000
	Resource recovery expansion		Resource recovery infrastructure		Damaged battery infrastructure	
	$6,000,000		$15,000,000		$1,750,000	
POSSIBLE PROGRAM EXPENSES	Operational safety net of 6 weeks		Governance		Consulting & research	
	$93,123,000		$575,000		$2,177,000	
	BSC operations		Verification		Marketing & education	
	$5,813,000		$1,071,000		$1,478,000	

INDICATIVE MODELLED LEVIES AND REBATES

Eco-modulated levies	Cents/ EBU	$/ KG
Alkaline, NiMH, & Carbon Zinc	8.93	$3.73
Button batteries	16.25	$6.78
Lithium ion	15.57	$6.49
Lithium Iron Phosphate	8.22	$3.43

Eco-modulated levies	Cents/ EBU	$/ KG
Lithium Primary	142.30	$59.29
Nickel Cadmium	53.96	$22.49
SEEE & vapes	22.93	$9.56

Collection Rebates	$/ kg
Metro	$5.00
Regional	$6.00
Remote	$8.00
Incidental	NA

Safety rebate	$/ kg
For NFPs & MRF sites	$2.00

Sorting rebate	$/ kg
	$1.20

Eco-modulated processing rebates	$/ kg
Button batteries	$7.50
Alkaline / Carbon Zinc / NiMH	$1.35
Lithium ion	$5.40
Lithium Iron Phosphate	$7.00
Li Primary	$20.00
NiCad	$4.50
SEEE & vapes	$6.50

Procedures will be prepared to ensure there is no double counting of batteries across battery categories (between lithium & SEEE).

Appendix 7. ANNUAL REVIEW PROCESS

Step 1. Define the size of the in-scope market and the participation rate including emerging products

The size of the in-scope market and the rate of importer participation is a key determinant in the generation of revenue to fund the operation of the Scheme. The BSC proposes to forecast the market stocks and flows on an annual basis by considering the following factors:

- projected overall all market size as defined through market research commissioned by BSC
- determination of the battery types and Electrical and Electronic Equipment to be considered in-scope for the next 12 months.
- review of the previous year's importer participation rate and to set the participation rate based on current and future regulatory status.

Step 2. Prepare a annual plan for sustainability investments and operational expenses

By considering each battery type separately the BSC can now identify specific sustainability outcomes by battery or product type and allocated dedicated funds to targeted investments aimed at addressing the key issues confronting each battery type.

On a yearly basis the BSC will prepare an annual plan identify targeted investments for the following 12 months considering the following factors:

- review of the long-term investment plan and confirm the efficacy of the proposed plan
- review of the previous year's investments and the outcomes achieved
- consider new initiatives or issues to address that may have arisen over the previous 12 months.

BSC will also prepare an annual plan for the operational expenses required to operate the B-cycle Scheme. This plan will be capped at 20% of the total operation cost of the Scheme.

Step 3. Evaluate the suitability of the per/kg rebate rates

The collection, sorting, and processing rebates will be reviewed and adjusted annually based on formulas aimed at accounting for changes in key metrics that drive the cost of the relevant rebates. The metrics used will be based on publicly available or industry-based data.

The formulas will be reviewed periodically to ensure the methodology continues to reflect the economic situation for each rebate type. As markets and recycling activities evolve other factors may need be considered when reviewing the rebates and the structure of the rebate formulas, such as:

- changes to transport regulations
- the evolution in battery sorting technologies and processes
- the establishment of recycling facilities outside of Victoria
- transport, or other, efficiencies achieved through economies of scale.
- financial benefit from the sales of recovered commodities through processing
- the introduction of new battery product or chemistry types
- the evolution and/or introduction on new recycling technologies.

It is BSC's intent to review and adjust rebates on an annual basis. However, given the volatility of fuel prices BSC will conduct a quarterly review of the collection rebates. This quarterly review will not automatically constitute an adjustment to the collection rebate rates. The BSC Board will consider this rebate review and any adjustment will be at the Board's discretion.

The following formulas will be used as the initial basis for rebate review and adjustment to be decide by the Board and depending on funding availability and appropriate regulatory support.

Revised collection rebate	=	Current collection rebate	+	Current collection rebate x % change in National Retail Diesel Price[2] x 30%	+	Current collection rebate x % change in Wage Price Index[3] - Transport x 35%	+	Current collection rebate x % change in CPI – Insurance x 10%	+	Current collection rebate x % change in CPI – All Groups x 25%

Revised Sorting Rebate	=	Current Sorting Rebate	+	Current Sorting Rebate x (% change in CPI – All Groups x 50%)	+	(Current Sorting Rebate x (% change in Wage Price Index - Warehouse x 50%))

Revised Processing Rebate	=	Current Processing Rebate	+	(Current Processing Rebate x (% change in CPI – All Groups x 50%))	+	(Current Processing Rebate x (% change in Wage Price Index - Warehouse x 50%)

Step 4. Define the forecast collection rate target for the following year

The collection rate for used batteries will be based on the percentage of in market batteries reaching their end of life, or Available for Recycling (AfR). BSC will use research data to identify the quantity of AfR. AfR will be calculated based on historical import data and the expected life of different battery types. Indicative examples of battery life cycles are:

- loose Batteries AA, AAA, C, D etc. (Alkaline) – 1 to 2 years
- consumer Electronics (Lithium-ion) – 5 to 7 years
- power tools batteries (Lithium-ion) – 3 to 5 years
- light means of transport (e-bikes and e-scooters) (Lithium-ion) – 6 to 8 years
- portable energy storage (Lithium Iron Phosphate) – 8 to 12 years.

BSC will set the forecast collection rate annually for the coming year understanding that the need to accelerate collections with the aspirational collection rate is 100% of AfR. The BSC will consider the following factors when determining the next 12 months Collection Rate:

- forecast for the current year's actual collection rate compared to the set collection rate target for that year
- risk factors that may support the collection of one battery type over another
- previously undertaken and proposed future initiatives that may drive an increase in battery collections (e.g. consumer education).

2 National Retail Diesel Price source – Australian Institute of Petroleum

3 Wage Price Index and Consumer Price Index source – Australian Bureau of Statistics

Step 5. Calculate modulated levies to secure sufficient funding for each battery type

The levy rate will be set on a cents/EBU (24 grams) and a $/kg basis for each battery or product type. The aim is to set the levy rate so that sufficient revenue is collected to cover the costs of collection, sorting, processing, sustainability investments, and operational costs and to deliver a financial surplus equivalent to operating the Scheme for a 6-week period.

The formulas are:

Cents/EBU Levy	=	Total Cost to operate the Scheme for that battery or product type	/	Import volume reported by Participants for that battery or product type (grams)	/	24gms

$/kg Levy	=	Total Cost to operate the Scheme for that battery or product type	/	Import volume reported by Participants for that battery or product type (kg)

Step 6. Board approval of Annual Plan

The BSC will seek stakeholder input and submit the draft annual plan for approval by the BSC Board.

8. DOCUMENT CONTROL

Previous version	30/12/2024
Revision Date	22/1/2025
Type of Revision/ Change	Removal of typo in Figure 16 and addition of Step 6. Board Approval of Annual Plan. Currency of dates and title.
Name of Preparers/ Reviewers	Libby Chaplin & Brett Buckingham

BatteryStewardshipCouncil

B-cycle
Battery
Recycling

B-cycle 2.0 Scheme Design

Australian Government Accredited Product Stewardship Scheme

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.