



# Positive Charge


## 2022-23 Report

The success of Australia's first  
Battery Stewardship Scheme  
in its first full year of operation



**Battery**  
Stewardship  
**Council**





### **Acknowledgement of Country**

The Battery Stewardship Council acknowledges the Traditional Custodians of Country throughout Australia and recognises their continuing connection to land, waters and communities.

We pay our respect to Elders past, present and emerging. We recognise their connection to Country and their role in caring for and maintaining Country over thousands of years.



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Our first  
full year of  
operation  
in review



# Message from the Chair and CEO



Gerry Morvell  
BSC Board Chair

As Australia pivots to renewable energy, we are fortunate to have access to an ever-widening array of products that give us significant freedom in our daily lives. Batteries underpin much of this change and are an increasingly important part of climate action and future energy security. What may not be so evident are the market failures that come alongside this transition and the important role stewardship plays in overcoming them.

**“Our mission is to overcome market failures with the recycling of consumer batteries and to provide leadership in creating a circular economy for batteries.”**

Libby Chaplin  
Chief Executive Officer



Libby Chaplin  
Chief Executive Officer

The B-cycle community of accredited Importers, Retailers, Drop off points, Collectors and Recyclers, together the B-cycle team and our partners in government, and industry have enabled the Battery Stewardship Council (BSC) to deliver on our promise to rapidly increase access to battery recycling.

We have seen strong participation from Importers and Retailers in the loose battery and the power tool sectors, with most major brands fully engaged. Although a minority, free riders continue to present a challenge. We are committed to reducing free riding as a key priority for the coming year.

FY 2023 has been a busy one for B-cycle with an enormous amount of work to refine our protocols and improve the oversight of battery collections and recycling. We also see areas for improvement, so we will be working with our participants in the coming year to listen and draw on that experience as we move to design B-cycle 2.0.

During the 2022/2023 financial year, B-cycle conducted 16 audits of the collection and recycling network which led to significant changes and improvements.

The learning experience also led to changes in our internal management systems with new operations being established to meet B-cycle requirements for accountability, safety, and traceability.

The implementation of some of these requirements has been challenging, and B-cycle continues to evolve our approach and improve as we learn from our boots on the ground.

In 2023, BSC injected more than \$11 million into the collection and recycling network through our rebate system. Not only has this enabled a significant increase in the number of batteries collected for recycling (more than a 100 million equivalent battery units), but we have also seen industry respond with new infrastructure for battery sorting and new entrants to the market for the processing of alkaline batteries.

Safety is an essential element of B-cycle operations with button battery management and fire safety being prominent issues in 2023. Our approach to safety has informed a range of activities including:

- + development of online Drop off point safety training
- + auditing of container protocols
- + design of safety labels for Drop off point containers
- + webinars on Drop off point safety.



## Message from the Chair and CEO (continued)

**"A unique feature of BSC is our Board structure which reflects the whole life cycle of a battery from import to end of life."**

Gerry Morvell  
BSC Board Chair

This means we can explore the practical aspects of the Scheme and make decisions that are informed with the latest knowledge and experience of the sector.

BSC has also has the benefit of learning from our international partners through our Advisory Panel with members from Europe and the United States. Their insights and guidance that have enabled B-cycle to build best practice systems in the unique Australian setting.

Towards the end of this financial year, BSC laid the foundation for our consumer battery safety awareness campaign which is a key feature of our button battery safety strategy. The strategy was developed with significant input and experience from the Button Battery Advisory Group (BBAG). The BBAG formed the view that the fastest way to raise button battery safety awareness across all consumer battery types and risks, with particular focus on the ingestion of button batteries.

We acknowledge and thank our team, including our participants, the Board, employees, and contractors who have worked together to address the rapidly evolving battery waste problem. Although small, the B-cycle team increased this year with the addition of some key roles and people who have hit the ground running.

The BSC team is our biggest asset and they have worked incredibly hard to deliver the B-cycle Scheme and adapt and respond to the changing needs of the industry.

So much is changing in the battery world with battery types, new products and new challenges. BSC is partnering with industry, community groups, and governments to facilitate conversations and create solutions that address the different risks involved.



B-cycle is exploring ways to build on our experience to contribute to stewardship discussions aimed at addressing emerging products.

In the coming year you can expect to see more attention on member engagement and a stronger focus on community awareness raising.

The Board has also commenced a review of the Scheme to ensure we are achieving our mission, delivering on our obligations, and adding value for our participants who are the driving force behind B-cycle's success. This review will involve consultation with members and other key stakeholders and may lead to an evolution of the Scheme to address the very strong community expectation of a safe and efficient circular economy for batteries.



## 2022-23 year at a glance

**2,375,363kg**

**Batteries** collected  
for recycling

**12%**  
collection  
rate

**71%**  
recovery  
rate

Used batteries collected  
by B-cycle in 2022-23

**7.6 million**

**People** reached  
on social media

**44.8 million**

**Media clips**  
on B-cycle

**90,130+**

**Searches**  
for Drop off points

### B-cycle participants

**54**   
**Importers**

**28**   
**Retailers**

**9**   
**Collectors  
and recyclers**

**850**

**Participants**  
hosting accredited  
Drop off points

**285**

**Organisations**  
providing accredited  
Drop off points

**\$13,791,957**

Levy collected

**\$10,679,184**

Rebates paid

**4,195+**

**Drop off points** across  
8 States and Territories

**90%**

**Loose  
battery** market  
participation

**55%**

**Power tool  
battery** market  
participation





# 2

## About us



# About the Battery Stewardship Council and B-cycle

The Battery Stewardship Council (BSC) was established in 2018 to bring together players from across the battery supply chain to ensure that a robust and well-designed battery stewardship scheme is established. The Council is facilitating the growth of accessible battery recycling services for consumers in metropolitan and regional areas across Australia through the industry-led B-cycle Battery Stewardship Scheme.

## The story of B-cycle

B-cycle was launched in 2022 by the Battery Stewardship Council with the support of the Commonwealth, and all Australian States and Territories, and the authorisation of the Australian Competition and Consumer Commission (ACCC). It is Australia's first nationwide, government-backed Battery Stewardship Scheme. B-cycle is the safe and simple way to help build a world where no battery goes to waste. See the difference it is making at:

[bcycle.com.au](https://bcycle.com.au)



## Our commitment to offsetting carbon emissions

In a partnership with Greenfleet, the BSC is taking climate action and offsetting carbon emissions through native reforestation. With Greenfleet, the BSC has offset 600 tonnes CO<sub>2</sub>-e.

Greenfleet is a non-profit environmental organisation dedicated to protecting our climate by restoring forests. They plant native biodiverse forests to capture carbon emissions and help fight the impacts of climate change.

Since 1997, Greenfleet has planted over 10 million trees across 500 forests in Australia and New Zealand. As these forests grow, they absorb carbon, improve soil and water quality, and restore habitat for native wildlife, including many endangered species. Through practical climate action, Greenfleet is growing hope for our climate and the future of our planet. Learn more at:

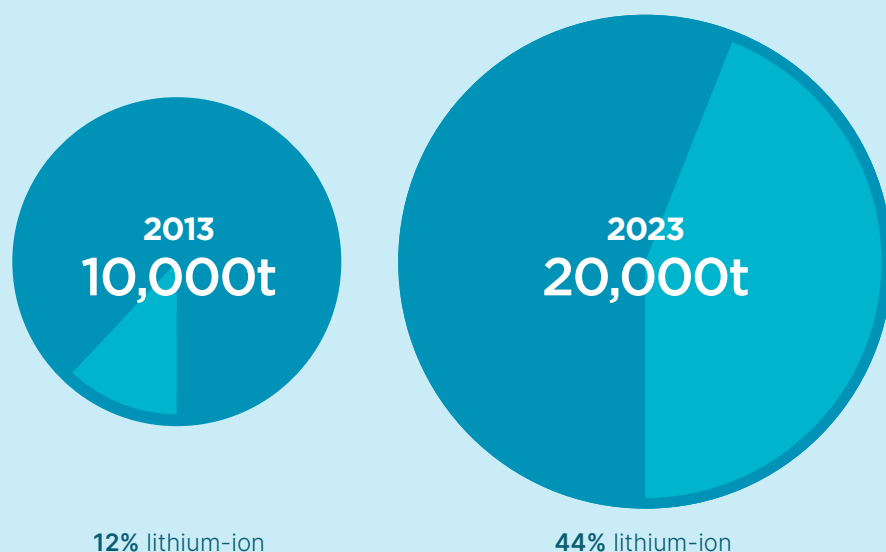
[greenfleet.com.au](https://greenfleet.com.au)





# Why B-cycle matters

The landscape of the battery industry is evolving rapidly, driven by dynamic shifts in battery chemistry.



The quantity of used B-cycle in-scope batteries reaching end of life doubled over the past decade, from 10,000 tonnes in 2013 to 20,000 tonnes in 2023.

During the same period, lithium-ion batteries as a percentage of the total B-cycle in-scope battery market reaching end of life also rose sharply, from 12% to 44%.

While this growth in lithium batteries enables us to live much more mobile lives, it is also leading to battery fires in the waste stream, posing a significant health and safety risk.

The good news is that used in-scope batteries can be safely and responsibly recycled with B-cycle.

In fact, batteries are highly recyclable and made up of precious and finite materials.

Recycling batteries has the potential to offset the CO<sub>2</sub>e emissions of battery materials supply by around 50%.

The critical materials recovered from recycling batteries are used in manufacturing new products, including new batteries.

Offset CO<sub>2</sub>e emissions

50%

Becoming part of B-cycle means you will be leading the charge. You can:



Reduce the health and safety risks associated with end-of-life battery management



Help address climate change



Protect Australia's energy security for future generations

## Our mission:

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

To accomplish this, we will ensure B-cycle continues to be a trusted and successful Scheme that conserves resources, reduces environmental and health impacts, and improves safety.



# Our goals

## Goals for 2023—2024



**Maintain the financial stability** of the Scheme and utilise fiscal resources of the BSC to drive strong stewardship outcomes.



**Expand the scope** of the Scheme to include other battery categories, such as e-bikes and e-scooters, and portable energy storage batteries.



**Improve awareness** and change behaviour around safe battery handling, storage, and recycling.



**Strengthen the validation and audit processes** to ensure that participant obligations are met and Scheme integrity is maintained.



**Expand the network** of battery Drop off points nationally to improve consumer access to safe battery recycling.



**Continue to consult** with industry regarding battery stewardship arrangements in Energy Storage and Electric Vehicle sectors.

## Long-Term Strategic Goals



**Zero battery waste to landfill** through strong community accessibility, acceptance, and engagement in recycling.



**Safety risks** of batteries to be **successfully managed** by the community and industry.



**A domestic battery recycling industry** that is self-sustaining, profitable, and growing.



**Sustained financial security** and efficiency for the Scheme.



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## How B-cycle works





# An innovative open-source model

Delivering unique benefits to battery brands

B-cycle brings together everyone in the supply chain including battery brands, retailers, Drop off points, and the whole recycling network. The B-cycle Scheme stimulates industry development and the expansion of the collection network. This is accomplished by using a rebate model to offset the costs of collection, sorting, and processing batteries until the volume of batteries collected improves the economics of battery recycling.

B-cycle provides independent assurance that all batteries are recycled, with rigorous traceability and accreditation for all participants. B-cycle's transparent process gives confidence that batteries are managed and recycled safely, and the leveraging model reduces the Scheme's risk by eliminating any single point of failure.

B-cycle gives participating battery brands an unequalled ability to take part and directly influence Scheme outcomes, giving them the opportunity to responsibly manage the life cycle of their products.

Some of these benefits include the following:

- + B-cycle is industry-led, allowing industry to take the lead and adjust the Scheme according to market forces while avoiding regulatory costs and restrictions.
- + Leadership from across the entire supply chain with the Board made up of directors with expertise of importers, retailers and recyclers and complemented by independent directors.
- + By establishing enterprise-to-enterprise agreements, participants will be able to reduce the impact of Free Riders without being seen to be behaving in an anti-competitive manner.
- + A minimum of administration and red tape, allowing organisations to have flexibility in the timing of their annual levy payments.
- + A unique open-source model accommodating a vast array of Drop off points, Collectors, and Recyclers, ensuring there is no single point of failure threatening the Scheme's operation.
- + Bespoke co-branding opportunities to work with the BSC to promote the Scheme, the organisation's participation, and its sustainability goals.



# The B-cycle of life

All industry participants agree to comply with the Battery Stewardship Commitment, with obligations specific to the role played by each B-cycle Participant. This Commitment ensures funding is secured, participating brands are promoted, safety and transparency across the battery lifecycle, and audits verify conformance and give assurance of minerals recovery from used batteries.





# The B-cycle community

B-cycle was founded on the belief that industry will take charge of addressing the challenging problem of used batteries if given the right framework. To date, over 300 forward-thinking organisations, government entities, and industry and community associations, representing 850 individual entities, have voluntarily joined forces to form the B-cycle community.

Their support, contributions, and hard work towards the creation of a successful, voluntary, industry-led stewardship scheme is greatly appreciated. The following accredited Importers, Retailers, Collectors, and Recyclers deserve recognition. When you buy battery products and services from these organisations, you are part of the B-cycle solution.



# Accredited participants

## I Importers

## R Retailers

AIRCO Fasteners Pty Ltd	I
ALDI Stores	I R
AMES Australasia	I
Arlec Australia	I
Batteries Sunshine Coast	R
Battery World Australia Pty Ltd	R
Benzina Zero Australia Pty Ltd	I
Bribie Green Batteries	R
Briggs & Stratton Australia Pty Ltd	I
Bruno's Batteries	R
Bunnings Group Limited	I R
Canon	I
Casey's Toys	R
Chervon	I
Coles Group	I R
Costco Wholesale Australia Pty Ltd	R
Cliff Wright Motors	R
DeLonghi Australia	I
Duracell	I
Dura Sales	R
Electric Vehicles Pty Ltd	I
Energizer	I

Euro Tooltechnic Pty Ltd	I
Foodland Supermarkets	R
Forbes Batteries & Electronics	R
Giant Bicycles Australia	I R
Globe International Limited	I R
Greenworks Australia	I
GSM Retail Australia	I
HBPlus Battery Specialists	I R
HIKOKI Power Tools Australia P/L	I
Hilti	I R
Holman Industries	I R
Honda Australia Motorcycles & Power Equipment Pty Ltd	I
Husqvarna Australia	I
Kmart Australia	I R
Makita Australia	I
Market Brands	I
Masport Ltd	I
Master Instruments	I
Metabo Australia Pty Ltd	I
MM Electrical Merchandising	R
OE Elsafe	I
Officeworks	I R
Ozito Industries	I
Panasonic	I

Pellenc Aurlalia	I
Pental Ltd	I
Positec	I
Powercell Australia	I
Power Shield	I
Ramcar Australia	I
Rilu Trading Pty Ltd	I
Robert Bosch (Australia) Pty Ltd – Power Tools	I
Salto	I
Sony Australia Limited	I
Stanley Black & Decker	I
STIHL Pty Ltd	I
Super Retail Group	I R
Sydney Tools	R
Techtronic Industries	I R
The Battery Bar	R
Tinks	R
Toro	I
Tool Kit Depot	R
Toys R Us (Babies R Us)	R
Total Tools	R
UBCO Australia Pty Ltd	I
UCC Australia Pty Ltd	I
Woolworths	I R

## C Collectors

## R Recyclers

## S Sorters

Activ Group	C
Battery Recyclers	C
Cleanaway	C
Close the Loop	C
Ecobatt	C R S
Envirostream	C R S
Gregory's Recycling	C
Nyrstar	R
ReSource	C R S



# Drop off point network

B-cycle has **4,195 Drop off points**. These are hosted by **850 B-cycle accredited participants**, representing over **300 entities** (councils, organisations, etc).

## Council — Community Site

City of Sydney

East Arnhem Regional Council

Flinders Council

Hume City Council

Sunshine Coast Council

Whitsunday Regional Council

Wyndham City Council

Yarra City Council

## Council — Depot / Landfill / Transfer Station

Albury City Council

Armidale Regional Council

Bathurst Regional Council

Bega Valley Shire Council

Bellingen Shire Council

Berrigan Shire Council

Bland Shire Council

Blue Mountains City Council

Broderick Waste Solutions on b/h Shire of Toodyay

Broken Hill City Council

Bunbury Harvey Regional Council

Bundaberg Regional Council

Cabonne Shire Council

Camden Council

Campbelltown City Council

Canada Bay City Council

Carrathool Shire Council

Central Coast Council

Cessnock City Council

City of Albany

City of Armadale

City of Canning

City of Cockburn

City of Fremantle

City of Greater Geraldton

City of Karratha

City of Mandurah

City of Newcastle

City of Rockingham

City of Stirling

Coffs Harbour City Council

Coolamon Shire Council

Coonamble Shire Council

Cootamundra Gundagai

Cowra Shire Council

Dubbo Regional Council

East Gippsland Shire Council

Eastern Metropolitan Regional Council

Edward River Council

Eurobodalla Shire Council

Federation Council

Forbes Shire Council

Gannawarra Shire Council

Gilandra Shire Council

Glen Innes Shire Council

Greater Hume Shire Council

Griffith City Council

Gunnedah Shire Council

Hawkesbury City Council

Hay Shire Council

Inner West

Inverell Shire Council

Junee Shire Council

Kempsey Shire Council

Kiama Municipal Council

Kyogle Shire Council

Lake Macquarie City Council

Leeton Shire Council

Liverpool City Council

Lockhart Shire Council

Maitland City Council

MidCoast Council

Mid-Western Regional Council

Monash City Council

Moonee Valley City Council

Moree Plains Shire Council

Murray River Council

Murrindindi Shire Council

Murrumbidgee Council

Muswellbrook Shire Council

Nabucca Shire Council

Narrabri Shire Council

Narrandera Shire Council

Oberon Council

Orange City Council

Parkes Shire Council

Penrith City Council

Port Macquarie Hastings

Port Stephens Council

Queanbeyan-Palerang

Randwick City Council

Shoalhaven City Council

Singleton Council

Snowy Monaro Regional Council

Snowy Valleys Council

Southern Downs Regional Council

Surf Coast Shire Council

Tamworth City Council

Temora Shire Council

Tenterfield Shire Council

Upper Hunter Shire Council

Uralla Shire Council

Wagga Wagga City Council

Walcha Shire Council

Wentworth Shire Council

Western Metropolitan Regional Council

Whitehorse City Council

Wingecarribee Shire Council

Wollongong City Council

Workpower on b/h of Mindarie Regional Council

## The B-cycle community

### Drop off point network (continued)

#### Container Deposits

Polytrade Operations - Re.Group

Return-It Australia

Xtreme Rhino Enterprises

#### E-waste

Ace Recycling Group Pty Ltd

Australia Ewaste Recycling

Battery Rescue Australia

Ecycle Solutions

Envirostream Pty Ltd

EWASTEC

Green Technology Recycling

Lithium Australia

NEWA Alliance

Quantum Recycling Solutions

Recycling Parks

Reverse E-Waste

Scipher Technologies

SHRED-X

South Australian EPA

SPC Ecycle

Total Green Recycling

#### Op Shops

Good Sammy

St Vincent de Paul

#### Retail

AAAFN Cairns

AAAFN Townsville

Absolute Batteries Toowoomba

ALDI

All Tool Solutions

ANG Pooraka

Batteries Sunshine Coast

Battery World

Big W

Bunnings Group Limited

Cairns Hardware

Casey's Toys

Coles Pty Ltd

Coop Parkes

Cornetts Supermarkets

Drakes

Drifta Camping Kitchens

Foodland Promotions

Foodworks (Australian United Retailers)

Friendly Grocer

Hastings Co-op

Home Hardware

IGA

Lucke's Fresh Food Market Bairnsdale

Metcash

Milwaukee Tools

Mitre 10

Officeworks

Pellenc Australia

R&J Batteries

Ritchies

Spudshed

SupaBarn Farmers Market

Sydney Tools

Tasmanian Independent Retailers (IGA)

Ten Tops (Co-op)

The Battery Bar

Thrifty-Link

Tinks

Tools Warehouse

Total Tools

True Value

United Tools

Woolworths Pty Ltd

#### Schools

Flinders University

Milgate Primary School

Pakenham Consolidated School

#### Scrap Metal

BlueScope Steel

Kreuzer Scrap Metals

Lex Enviro Mount Druitt

United Star Resources

#### Other

Adamstown Car Doctors

Bribie Green Batteries and Auto Parts

Finsbury Green

Fremantle Village

HTL Perma Australia

LG Electronics Australia

Melbourne Zoo

The Activ Group

Werribee Open Range Zoo



# Participant perspectives



"Sustainability and responsibility are at the core of ALDI's values and operations. We're striving to Make a Good Difference to the planet and our partnership with B-cycle represents part of this commitment. By offering our customers B-cycle drop off points at every one of our stores, we're pleased to play a role in supporting a circular economy for batteries as well as minimising the harm they can cause to the environment.

In 2013, ALDI became the first Australian supermarket to offer a national battery recycling service. Our partnership with B-cycle has enabled us to accelerate this program, and we have now recycled over 1300 tonnes of batteries through our stores."

## Daniel Baker

Director — National Sustainability  
ALDI Stores



"Chervon Australia, owner of brands EGO, SKIL & FLEX, is a proud participant in the B-cycle Scheme. Customers can have confidence that when they purchase our products they are contributing to the overall health of our planet. While the environmental damage of petrol guzzling vehicles is well known, the harm of petrol-powered tools, which we use daily, is often overlooked. As a leading battery power equipment manufacturer, Chervon not only has no vested interest in petrol but is committed to the responsible end of life management of our batteries."

## Barry Crowhurst

General Manager  
Chervon Australia



"Gregory's Recycling is a strong advocate for battery recycling and as a participant of the B-cycle scheme, we are helping to raise awareness about the potential harm which can be caused by improper disposal of batteries. Keeping batteries out of general waste streams is vital for keeping our environment safe."

## Taylor Gregory

General Manager  
Gregory's Recycling



"We are now receiving Li-Ion batteries from power tools at the end of their working life from our customers all over Australia. We have partnered with Envirostream in Victoria to design the right processes and select the correct packaging to safely transport batteries to them for recycling. Our customers respond positively to absorbing the battery levy when we describe why it's in place and how we all need to play our part to increase recycling rates of Li-Ion. We're proud to be associated with the Battery Stewardship Council and it's closely aligned with our company's promise to be our customers' best partner for productivity, safety and sustainability."

## Dr Martin Stirling

Head of Worker Health & Safety Circularity  
and After Market Services  
Hilti (Aust) Pty Ltd

## Participant perspectives (continued)



“With Makita being a leader in the lithium-ion power tool and outdoor power equipment category, it has been incredibly important for our business to drive strong support of sustainability through the B-cycle scheme. We are encouraged by the fantastic uptake in battery recycling since the scheme has started, and we look forward to working closely with B-cycle over the coming years to drive further acceptance of battery recycling within our industry.”

### Adam Baker

General Manager of Marketing  
Makita Australia



“As a small importer, Market Brands Pty Ltd is a proud partner of the Battery Stewardship Council and are thrilled to contribute to the responsible management of batteries. We encourage all Australians to play their role in reducing waste with the safe recycling of their used batteries.”

### Alan Hall

Managing Director  
Market Brands Pty Ltd



“B-cycle have been the perfect partner for our ANIMATE and QIKPAC battery stewardship programme, providing the pathway to ensure our lithium-ion batteries are returned and recycled, maximising the use and reuse of precious resources”.

### Tim Sindle

Engineering Manager  
OE Elsafe



“Panasonic Australia is pleased to support the B-cycle Scheme and contribute to the Battery Stewardship Council’s commitments in safe battery recycling for the benefit of our environment. This complements the positive steps we are already taking to meet the 2025 National Packaging Target and phase out expanded polystyrene (EPS) for our consumer products.”

“We strive to make meaningful changes in all aspects of our operations and production chain to support a circular economy. Our battery manufacturing plant in Thailand has been carbon neutral since 2022 and we will be producing environmentally-friendly battery packaging, starting with our alkaline products.”

“Our product range is also ever-evolving with solutions that are kinder to the environment. For example, our eneloop rechargeable batteries – which are pre-charged in the factory utilising solar power – are helping reduce toxic landfill waste caused by single-use batteries while also being a cost-effective option for users.”

### Paul Reid

Managing Director  
Panasonic Australia



## Participant perspectives (continued)



“Powercell continues as a willing member and active participant of the B-cycle Scheme and looks forward to doing our part to make a meaningful contribution to ensure a sustainable and successful scheme. There is no doubt that the B-cycle scheme is a step in the right direction and since commencement has made a positive impact on the stewardship and recycling of battery products in Australia.”

### Simon Cox

Director & General Manager  
Powercell



“At PowerShield, we believe in harnessing the power of innovation not just for technology’s sake, but for the future of Australia. Being the only Uninterruptible Power Supply company on the Battery Stewardship Council, our involvement goes beyond mere participation; we are committed to raising awareness among our peers and the broader community about the importance of a circular battery life approach. Our vision is that everyone has access to smooth power every day, achieved sustainably. By actively participating in the B-cycle Scheme and collaborating with partners who share our values, we’re echoing this commitment and endeavouring to lead the charge in reshaping industry practices for a cleaner, greener Oceania.”

### Anita Carbone

Marketing and Communications Manager  
PowerShield



“We are proud to be a B-cycle-Accredited Battery Steward and to work with Ecobatt to support battery recycling efforts in Australia. We believe that it is our responsibility to take steps to reduce our impact on the environment and to encourage others to do the same.”

### Rosemary Shisler

Marketing Manager Oceania  
SALTO Systems



“Sell & Parker is proud to be part of the B-cycle initiative and its design to keep batteries out of the waste stream. Lithium batteries incorrectly discarded in the waste stream have caused fires that damage the environment and waste recycling facilities. Support for the B-cycle stewardship scheme is critical to address the li-ion fire issues and ensure valuable resources are recovered and reused.”

### Morgan Parker

Director  
Sell & Parker

# Expansion of the Scheme

## Loose handheld batteries pave the way forward

Tackling all batteries in one all-encompassing scheme is not viable. A stewardship scheme must consider the unique and specific challenges presented by different batteries used in different applications. The BSC has taken a staged approach to introducing B-cycle to address the primary market failure first.

B-cycle launched in 2022 with a focus on loose batteries and easily removable batteries, such as those in power tools and digital cameras, up to 5kg. With B-cycle's swift success and the strong adoption of the collection process by consumers, B-cycle rapidly expanded the scope of batteries included in the Scheme.

## Early adopters support the expansion into the e-mobility sector

The light mobility sector is expanding rapidly. A total of 5,000 tonnes of e-bike batteries are currently in use in Australia, a figure that has more than doubled in the last three years.

Several light mobility companies have joined B-cycle, notably Giant Bikes, Benzina Zero, Electric Vehicles, Rilü, Dot Skateboards, and UBCO. Along with these early adopters the BSC is working closely with the Bicycle Industries Australia (BIA) to explore the battery stewardship challenges for industry. In the light mobility sector, there is an opportunity to provide carbon-neutral transportation solutions that could either replace internal combustion engine (ICE) vehicles or bridge the last mile. BSC strongly supports the adoption of cost-effective, safe, and efficient light mobility solutions to decarbonise the transport sector, decrease traffic congestion, improve air quality, and provide cost-effective transport solutions for all Australians.

The BSC is working with the BIA and industry to develop containers for storing and handling both new batteries and used batteries, as well as considering methods for collecting and transporting used batteries to recycling facilities. Light mobility is a sector that the BSC will continue to engage with.

## Loose batteries with product – demonstrating the adaptability of B-cycle

Loose batteries with product have been a challenging category for importers to quantify. These batteries are those sold with products found in toys, torches, or remote controls, and capturing battery data for this category has been difficult for industry.

As a result of the flexible nature of the B-cycle Scheme, the BSC has been able to provide industry with a range of options to calculate their levy payment and incorporate these batteries easily into the Scheme.

With support of the Consumer Electronics Suppliers Association (CESA), the Australian Toy Association (ATA), the National Retail Association (NRA), and industry, the inclusion of these batteries fully within B-cycle was established in July 2023. This is a prime example of the adaptability of B-cycle in tailoring options to meet industry needs.





# Recalibration to align with international methodology

## 2022 revised collection rate data

In 2022, the availability of clear and consistent data on battery market size and end-of-life batteries available for collection was limited. The BSC made the best-informed assumptions based on its understanding of the market at the time and the life cycle of B-cycle in-scope batteries to report collection rate data for the first six months of operation.

In 2023, the BSC commissioned Market Report, conducted by the Institute for Sustainable Futures, was finalised and provided the BSC with the much-needed data to update and correct the collection rate reported last year.

There was a significant variance in the data due to an underestimation of the quantity of batteries available for collection. A lack of historical data made it difficult to accurately predict end-of-life events. The revised data now includes historical data from 2004 onwards and represents a more complete estimate of batteries available for collection.

The BSC is now better placed to provide a more complete representation of the collection rate and include metrics compared with collection rate performance by European countries.

## Revised data

	CY18	FY22 (2nd H)
Batteries available for collection	13,662	9,394
Batteries collected	872	896
Collection rate	6.4%	9.5%



# 4

## Scheme outcomes



# Providing an extensive network of safe and convenient Drop off points

## Drop off point growth

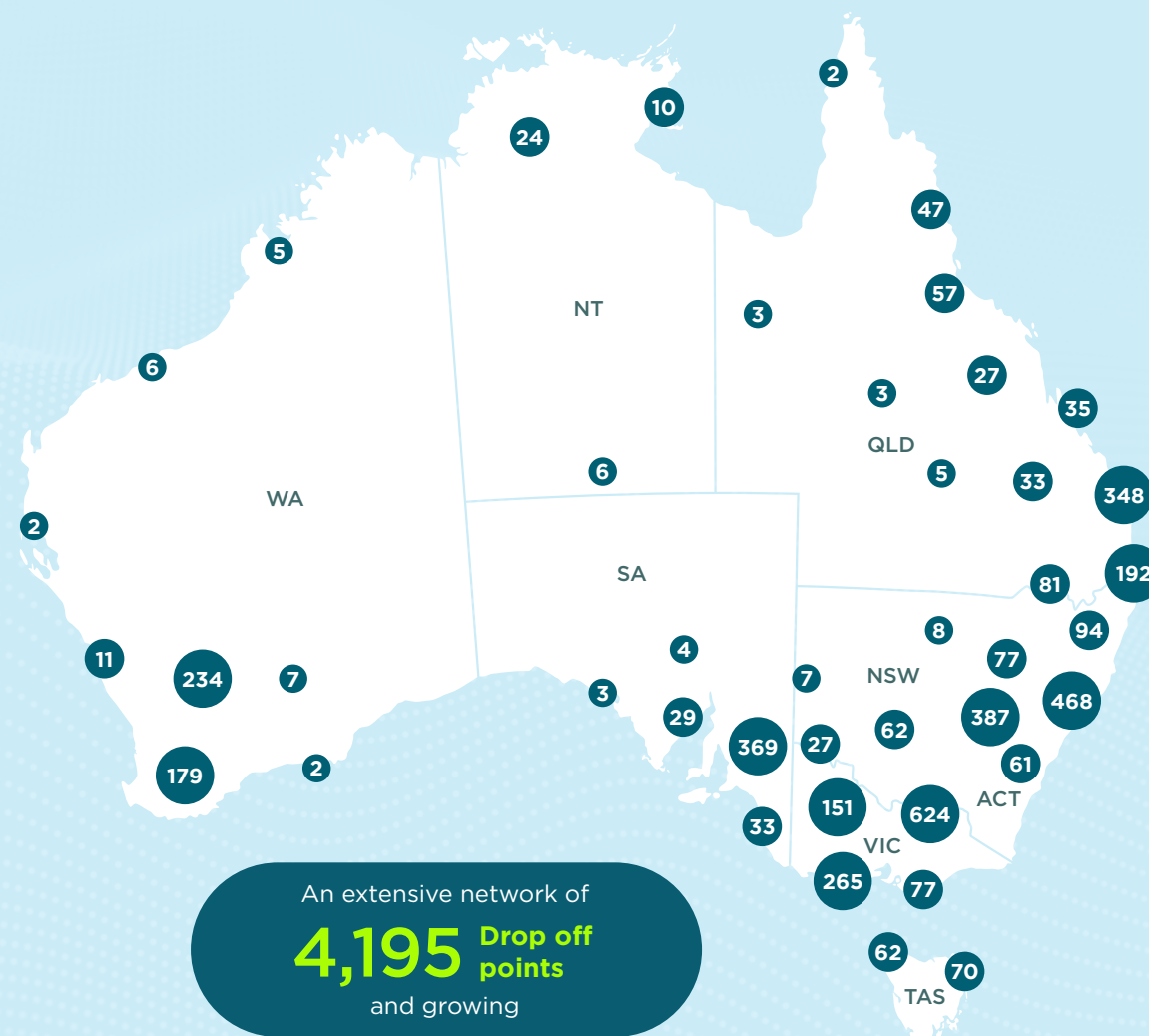


# More Drop off points in more convenient locations

## Geographical coverage

A great deal of credit goes to the 285 organisations across Australia that have decided to host the 4,195 B-cycle Drop off points and support the community in recycling used batteries. These organisations, including retailers, battery importers, recyclers, op shops, not for profits, and councils are providing convenient Drop off points across all states and territories.

State	Drop off points	%
NSW	1,128	26.9%
VIC	1,117	26.6%
QLD	833	19.9%
WA	446	10.6%
SA	438	10.4%
TAS	132	3.1%
ACT	61	1.5%
NT	40	1.0%
<b>Total</b>	<b>4,195</b>	<b>100%</b>

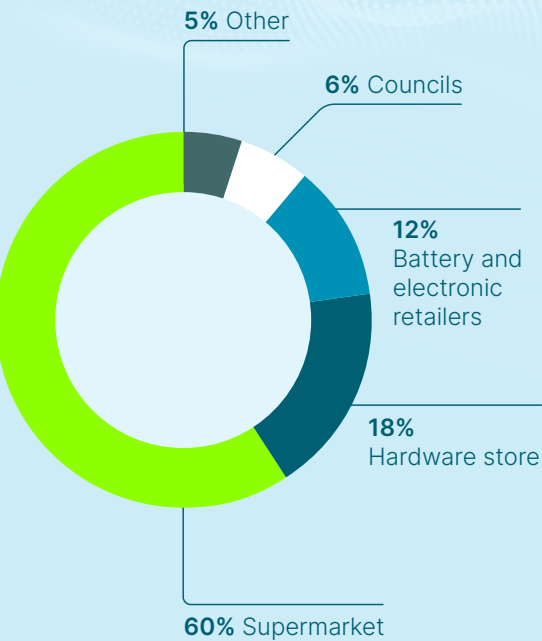




# Understanding consumer behaviour

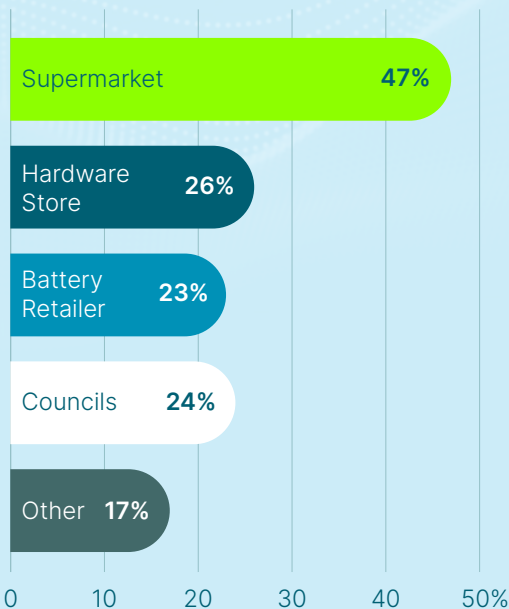
Drop off points must be in convenient locations to shift recycling behaviour. Consumer research suggests that supermarkets are the most convenient location for consumers, followed by hardware stores. The BSC has prioritised the growth of the Drop off point network in these areas.

Drop off point distribution



Consumer Recycling preference

Consumers could choose multiple preferences



By growing the Drop off point network, the BSC has increased the number of convenient and safe locations where consumers can recycle used batteries.

**? “How easy was it for you to find a battery collection point?”**



## Making battery recycling convenient for all Australians (continued)



B-cycle has increased battery recycling among all Australians by over 30%

### Shifting consumer behaviour for good

The BSC is proud of the expansion of the Drop off point network and the collection of millions of kilograms of used batteries. To truly effect lasting change, however, the key is shifting consumer behaviour.

In 2021, the BSC conducted consumer research to understand consumer behaviour before launching B-cycle. BSC conducted a second round of consumer research in August 2023 to understand consumer behaviour during the first full year of operation of B-cycle and to compare current behaviour with pre-Scheme behaviour.

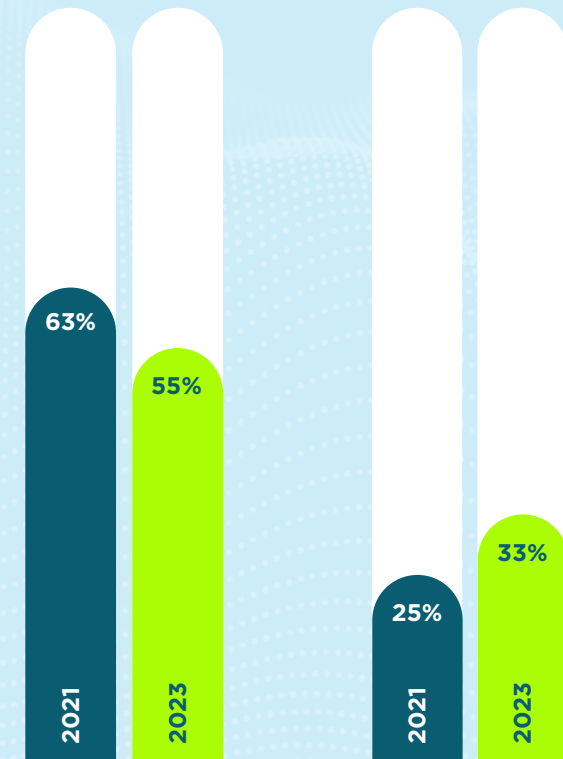
Increasing and promoting B-cycle Drop off points has significantly changed Australians' recycling behaviour nation-wide. Consumers have reduced their use of household rubbish and recycling bins to dispose of used batteries, reducing the risk of fires in the waste stream.

The reduction of the disposal of batteries in the household waste stream has directly led to an increase in battery collection points.

### ? "What do you do with your used batteries?"

Place them in the household rubbish or recycling bin

Take them to a battery collection point

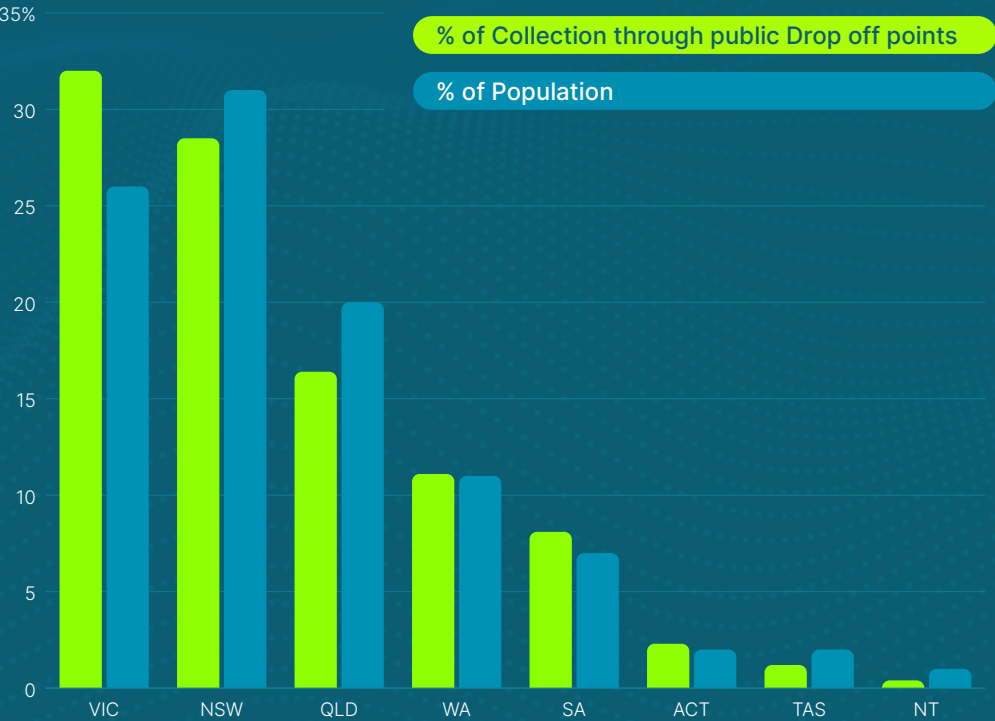




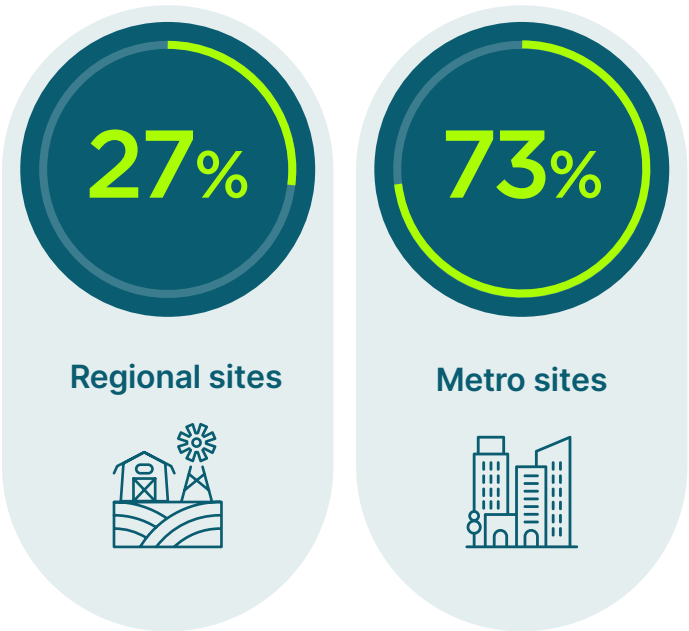
# Drop off point performance

Throughout all states and territories, B-cycle offers Australians the chance to recycle their unwanted batteries, and many people are utilising the numerous Drop off points. As a percentage of the total population, Victoria and South Australia recycle more used batteries than the rest of the country.

Battery collections by state or territory



## Metro vs regional collections



In addition to providing coverage across all states and territories, it is also important to provide Drop off point coverage in regional and remote areas. The figure above highlights the ratio of metro verses regional batteries collections over the first full year of operation.

BSC defines metro areas as Australia's capital cities and regional centres according to those postcodes defined by the Department of Home Affairs, excluding those in Northern Territory, Tasmania and Western Australia. Currently metro areas include: Adelaide, Brisbane, Canberra, Melbourne, Newcastle/Lake Macquarie, Sydney, the Gold Coast, the Sunshine Coast and Wollongong/Illawarra.

# 2023 collection rates

In its first year, B-cycle has nearly doubled the rate

In its first full year of operation, the BSC is proud to report that the B-cycle collection rate has nearly doubled when collected batteries are compared to those batteries placed on the market in the same year. In addition, the collection rate for batteries available for recycling have increased by 170% over the same period.

The following table provides collection rates in two forms: Firstly, Collection Rate using placed on market indicates batteries collected as a ratio of batteries imported, or placed on the market (POM), in that year. This metric aligns with the measure used within the European Union. Secondly, Collection Rate using available for recycling (AFR) indicates batteries collected as a ratio of the estimated quantity of used batteries that have reached their end of life and are available for recycling (AFR). This metric considers the lifecycle of various battery types and estimates the end of life of batteries placed on the market in previous years. The BSC considers the Collection Rate (AFR) metric to be a more accurate measure of the collection rate.

	FY21 Pre-Scheme	FY23 1st Full Year
Batteries collected		
	1,258t	2,375t
Placed on market (POM)		
Batteries placed on the market	21,785t	21,781t
Collection rate	5.8%	10.9%
Available for recycling (AFR)		
Batteries available for recycling	17,440t	19,848t
Collection rate	7.2%	12.0%

In doing so Australians have recycled **2,375,363kg** of used batteries with B-cycle in its first full year of operation (FY23) and **3,271,709kg** since the launch of the B-cycle Scheme.



# International benchmarking

## How B-cycle compares in its first year



POM Collection Rate  
in **Australia** after  
1 year of operation



POM Collection Rate  
in **European** Countries  
after 1 year of operation

### Collection rate comparison with other countries

By adopting the Collection Rate (POM) metric, the BSC can benchmark its performance against European countries.

Where there is published collection rates under the **EU Battery Directive** 2006/66/EC for the introductory phase of battery collection in European countries with a similar starting point to Australia, the BSC has aggregated their collection rate data to report from their first year of operation.

**B-cycle has demonstrated strong battery stewardship performance in its first full year of operation compared to that of European countries at a similar stage of their stewardship lifecycle.**

EU Collection rate – where collection data is publicly available for countries commencing their battery collection under the EU Battery Directive 2006/66/EC the BSC has aggregated the data. Aggregated collection rate data is from Czech Republic, Bulgaria, Hungary, Cyprus, Ireland, Poland, Romania, and the United Kingdom with the first year of collection rate reporting occurring between 2005 to 2010.

The collection of waste portable batteries in Europe in view of the achievability of the collection targets set by Batteries Directive, February 2022.

# B-cycle battery recovery process

Mixed batteries received are sorted by chemistry

## Chemistry

76.7%

Alkaline

16.6%

Lithium batteries

6.3%

NiCd, NiMH

0.4%

Button & coin cell

## Process

Shredding

Smelter

Shredding

Shredding

Material is exported for processing

Shredding

## Outputs

Non-ferrous materials processed into commodities

Ferrous materials into products

Non-ferrous materials processed into commodities

Non-ferrous materials processed into commodities

Ferrous materials into products

Ferrous materials into products

Ferrous materials into products

Ferrous material (silver) into products

Remaining materials into concrete

Remaining black mass exported for further processing of non-ferrous metals into commodities

Material is exported for further processing of non-ferrous metals into commodities

Non-ferrous materials

Non-ferrous materials processed into commodities (Mercury, Silver)

Waste  
Including plastics and processing loss

Waste  
Including plastics and processing loss

Waste  
Including plastics and processing loss

Waste  
Including plastics and processing loss

Waste  
Including plastics and processing loss

Waste  
Including plastics and processing loss

Waste  
Including plastics and processing loss

Waste  
Including plastics and processing loss

Non-ferrous metals include

Al Aluminium

Co Cobalt

Li Lithium

Ni Nickel

Zn Zinc

Cd Cadmium

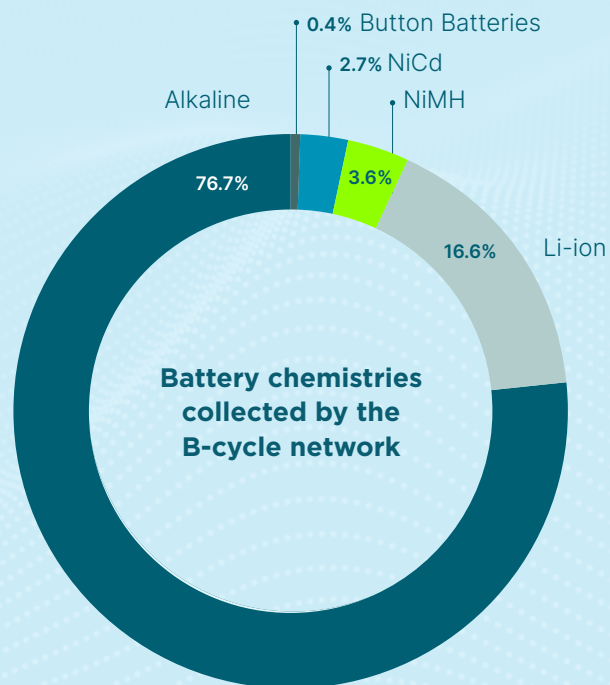
Cu Copper

Mn Manganese

Ag Silver



# Recycling outcomes and recovery rates



Over three-quarters of the batteries collected by B-cycle are alkaline (76.7%) batteries with a further 17% (16.6%) of those batteries collected being lithium-ion.

Nearly all batteries are initially processed (shredded or fully processed) within Australia. Only 4% (3.6%) of used batteries collected that are not initially processed in Australia, are sent overseas for initial processing.

## B-cycle battery recovery rate

The average recovery rate of all batteries collected in 2022-23 via B-cycle is 71.08%.

The above is a figure calculated from different recovery rates of different battery chemistries. This figure is based on the amount of batteries collected via B-cycle by chemistry type and the averages of the recovery rates for each chemistry type. Due to commercial sensitivities, we are currently not at liberty to disclose the individual recovery rates of battery chemistries.

## Understanding and improving the recovery of used battery materials

Unfortunately, the plastic recovery market in Australia and internationally is currently performing poorly. This has reduced the recovery of plastics globally including plastic recovery from batteries.

As a result, material going to landfill (primarily plastics) and material lost in the recovery process for 2022/23 was 29%. Recyclers continue to invest in new processes to improve the recovery of materials in batteries, including higher recovery of the rare earth metals in the black sand and black mass of alkaline and lithium batteries respectively, as well as seeking to improve the plastics recovery.

## Recovered battery materials processing

While the primary and majority of secondary processing of materials is onshore in Australia, there are recovered materials, such as the black mass from lithium batteries, that are currently sent overseas for final recovery processing before being sold as a commodity or remanufactured into a product.

**Of the recovered material from used batteries, approximately 5% is sent overseas for further processing and refinement. This is primarily the black mass from lithium batteries.**

As these final processors are based overseas and are currently not accredited within B-cycle, processing of this material has not been fully audited. However, these companies have provided documentation, including licenses and legal requirements to operate to BSC.

Data collection in all areas of B-cycle is improving year on year. This is especially true regarding the final destination of recovery materials from collected used batteries via B-cycle.

# A dedicated focus on fiscal responsibility

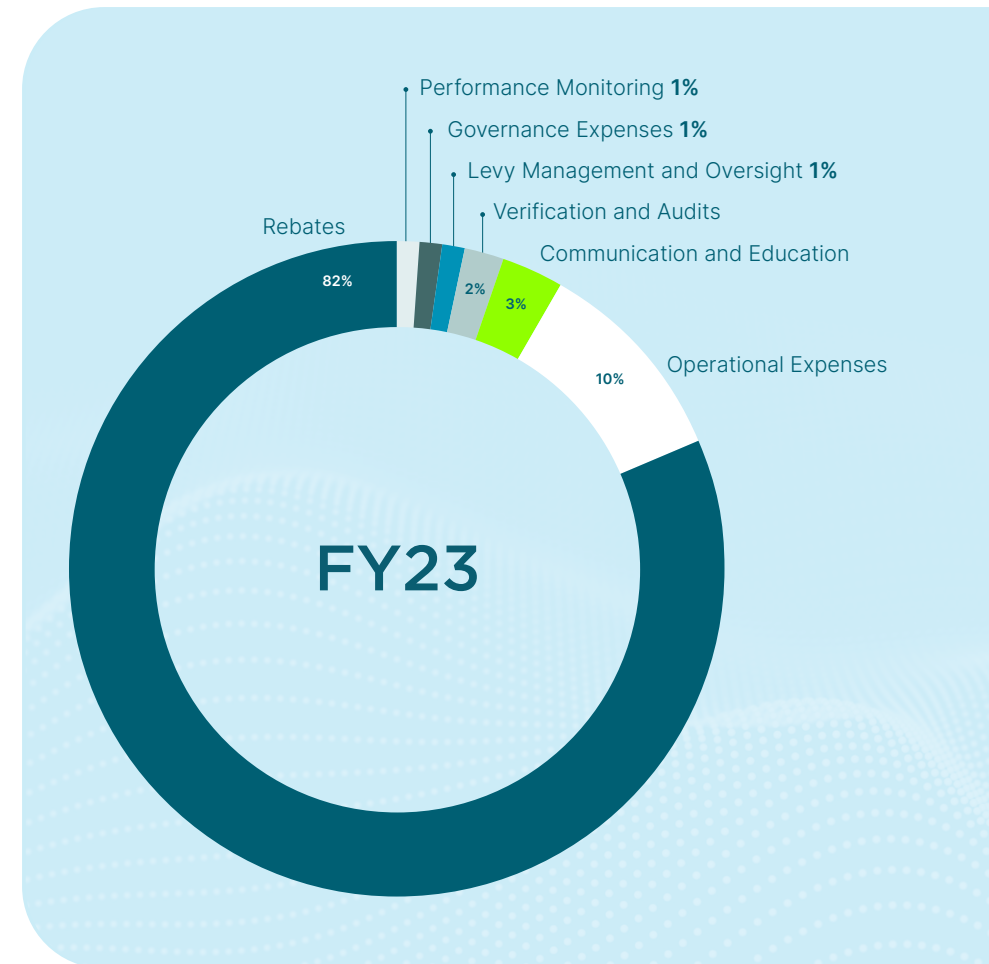
## A dedicated focus on stewardship outcomes

As the Scheme relies on the generous contributions of its participants by the payment of a levy on battery imports, the BSC strives to ensure sound fiscal management of the Scheme.

The primary focus of the BSC is to utilise its financial resources to drive sound stewardship outcomes. In FY23, more than 80% of all expenses were directed to the payment of rebates to offset the cost of battery collection, sorting, and recycling.

A further 5% of all expenses went directly to verification, audits, consultancy, and governance of the Scheme operations to provide certainty and assurance that used batteries are collected and recycled in a safe and environmentally sound manner.

<b>Income</b>	<b>\$13,791,960</b>
<b>Expenses</b>	<b>FY23</b>
Rebates	\$10,679,184
Performance Monitoring	\$129,250
Verification and Audits	\$270,449
Communications and Education	\$381,988
Levy Management and Oversight	\$138,290
Operational Expenses	\$1,241,663
Governance Expenses	\$119,706
<b>Total</b>	<b>\$12,960,530</b>





# Our accountability to the B-cycle community

Accreditation and conformance audits are essential for transparency, accountability, and processes verification of the B-cycle Scheme.

B-cycle requires all accredited Collectors, Sorters, and Recyclers to meet rigorous Accreditation Protocols that are verified through a number of practices, in particular, annual conformance audits.

In 2022/23, BSC completed over 35 accreditation and conformance audits in partnership with our independent auditors.

With these audits, the BSC and its accredited Participants are able to identify and improve activities and systems that will benefit the entire B-cycle Scheme, industry, the environment, and the community.

In 2023/24, BSC seeks to continue an ambitious auditing schedule, including implementing Drop off point health checks and unannounced audits of Collectors, Sorters, and Recyclers.

The BSC acknowledges the ongoing support, collaboration, and cooperation of all our Participants in our accreditation program as we continue to work together to develop B-cycle into one of the safest and most effective battery stewardship programs globally.





5

Our  
impact



# Market insights and climate benefits

## Battery Stewardship – a pathway to reducing greenhouse gas emissions

In less than 18 months, Australia has an established battery stewardship scheme that has almost doubled the national battery recycling rate, and it continues to grow. Through this voluntary product stewardship scheme, the opportunity for a productive circular economy for batteries is now underway.

In association with the Institute of Sustainable Futures at the University of Technology, Sydney, the BSC commissioned two reports:

Battery Market Analysis



Battery Lifecycle Analysis



These reports confirm the rapid growth across all battery formats, in particular the dominance of lithium-ion batteries. There is great potential to increase Australia's capacity to contribute to a circular battery supply chain. These reports confirm the strong environmental and climate benefits of B-cycle and the recovery of materials from used batteries offering a crucial opportunity in curbing emissions for the battery industry as it continues to rapidly scale both locally and globally.

## Recycling critical minerals essential for energy security

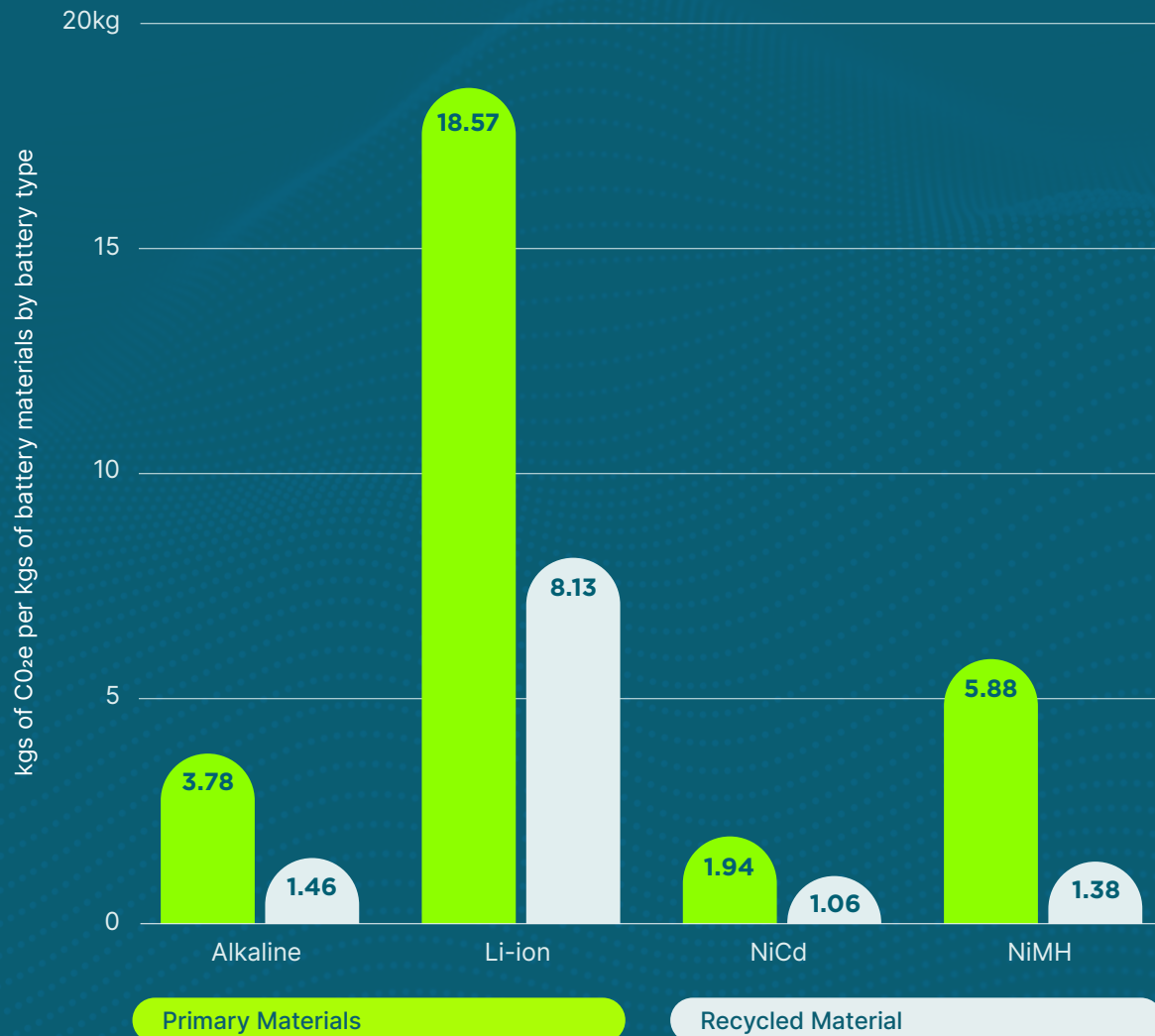
Battery recycling will play an increasingly important role in supporting the supply of minerals and materials for battery production, particularly with many of these materials listed as 'critical minerals' globally. At the end of 2022, the Council of the European Union announced a new regulation on batteries, requiring that at least 16% of cobalt, 85% of lead, 6% of lithium and 6% of nickel used in industrial, Starting, Lighting and Ignition (SLI) and Electric Vehicle (EV) batteries is to be supplied from recycled sources. (European Parliament, 2023).

Incentivising investment in the battery recycling sector in Australia, particularly through hydrometallurgy recycling practices, greatly enhances the ability to produce high-purity materials.

Placing these highly purified recycled materials from batteries onto the materials market has the potential to offset the CO<sub>2</sub> emissions of battery materials supply by around 50%.



# The environmental benefits of battery recycling



Using recycled materials to manufacture new batteries can **reduce CO<sub>2</sub> emissions by up to 50%**

Battery materials recovered from recycled batteries significantly reduce greenhouse gas emissions compared to materials mined from primary sources.





## Raising awareness to drive change

Improving awareness about battery safety and reducing the inappropriate disposal of batteries in general waste and recycling bins is key to the B-cycle mission. The consequences of not managing this rapidly expanding waste stream are significant:



When used batteries end up in landfill they leak and corrode, leaching toxic materials into our ecosystem and waterways.



There has been an exponential rise in battery fires in general waste and recycling. One of the major waste collection companies reported 15 fires in one month that were confirmed to have been started by a battery.



Australians reveal a limited understanding of safe battery handling and storage, with more than half of adult Australians still disposing of batteries incorrectly in general waste and recycling bins.



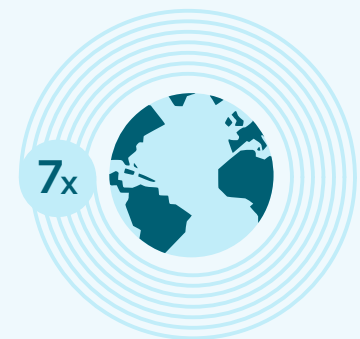
20 children present to an emergency department each week in Australia, suspected of having ingested or inserted a button battery. One child a month sustains serious injuries.

The good news is that when made aware of the B-cycle Scheme, 95% of Australians said they would be willing to take the batteries to a collection point.

### Call to Action for all Australians

- + Never put used batteries in general waste and recycling bins
- + Tape the terminals using clear sticky tape
- + Take them to your nearest B-cycle accredited Drop off point

These are lifesaving actions



Batteries are changing the way we live and work. This year, Australians will purchase enough equivalent batteries to circle planet earth 7 times.

By 2050 this will increase to 37 times. This underlines the importance of B-cycle.

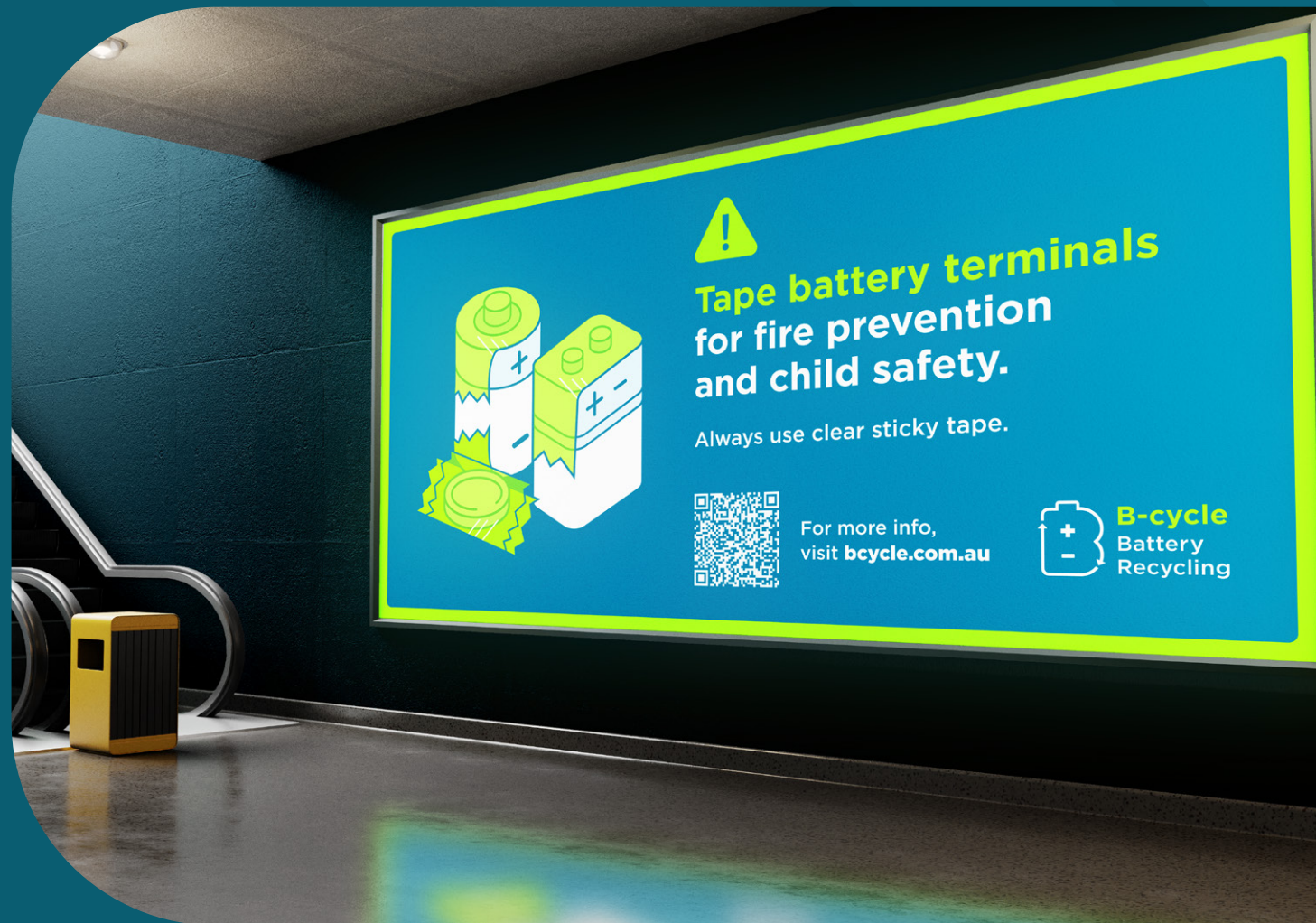
## Raising awareness to drive change (continued)

### Button battery safety strategy

BSC is committed to raising awareness and changing behaviour to reduce the risk of harm to the community arising from button batteries. Together with the Button Battery Advisory Group (BBAG), the BSC carries out the actions outlined in the Button Battery Safety Strategy – the implementation of which is a condition of B-cycle's ACCC authorisation. This work includes:

- + Consumer research to understand attitudes, knowledge and behaviour regarding all battery risks, but particularly button battery risks, in the home as well as disposal options.
- + Messaging and imagery for B-cycle branding and battery safety labelling at all B-cycle Drop off points.
- + Button battery safety awareness campaign. It was determined by BBAG that a broad awareness campaign, focused on fire prevention and child safety for all batteries, was the most effective way to rapidly change behaviour.
- + Planning the development of home storage containers for used button batteries.

BSC recognises there is much more to do to improve button battery safety and looks forward to continuing to work with the ACCC and the BBAG.







# What's next?



# Preparing for the exponential growth of lithium-ion batteries

In late 2021, the BSC commissioned the UTS Institute of Sustainable Futures to conduct research and prepare a Battery Market Analysis Report and a Life Cycle Analysis Report. These reports have been released in 2023 and present an insightful perspective on the future of the battery market in Australia until the middle of this century.

Looking forward, Electric Vehicles (EVs) and Battery Energy Storage Systems (BESS) are emerging categories that will generate significant volumes of related batteries in the coming decades.

Lithium-based technologies will be the predominant battery chemistry powering most future applications.

**Currently, there are 190,000 tonnes of lithium-based batteries in use in Australia. This is set to grow to 1.4 million tonnes by the end of the decade and 7.7 million tonnes by the middle of this century.**

Even though lithium batteries have a long lifecycle between 5 to 10 years, and for some applications up to 15 years, these batteries will ultimately reach their end of life and require recycling. Currently in Australia, 10,000 tonnes per annum of lithium batteries are going to recycling.

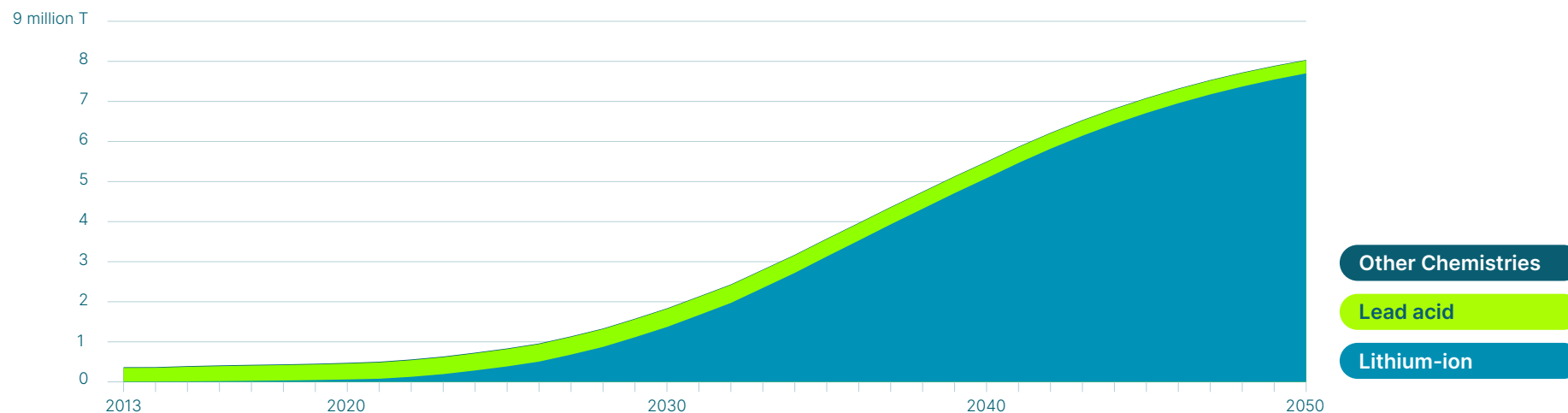
This will grow up to 20,000 tonnes per annum by the end of the decade and reach 500,000 tonnes per annum by 2050.

**By the middle of the century, over 5 million tonnes of lithium batteries will have reached their end of life in Australia.**

Given that the recycling infrastructure and capacity is currently insufficient to deal with this forecasted growth in batteries entering the waste stream, it is imperative that industry start now and consider the pathway to stewardship.

Currently, the BSC is engaging with key industry sectors to understand battery stewardship issues and seeks to work with them to address these challenges.

## Battery stocks projections by chemistry group



# Sustainable growth in emerging markets

## The Role of Stewardship

### End of life Electric Vehicles (EV) battery management

The BSC is currently engaging with the EV sector to explore stewardship options. Together with the Federal Chamber of Automotive Industries (FCAI) and the Motor Trades Association of Australia (MTAA), the BSC released a discussion paper seeking comment and input into a series of questions designed to explore the issues and challenges associated with end-of-life EV battery management.

The Electric Vehicle Council (EVC) along with key industry participants provided valuable feedback suggesting some common themes. Supporting the development of the EV industry along with a consistent and global approach to stewardship, the involvement and support of Government, the development of battery tracking, and 2nd life applications are key items to consider.

Consumer expectations are demanding action to recover and protect finite resources and the EV industry sits at the cusp of an exciting future. Those involved in this sector can create an enduring legacy by building circularity into the EV supply chain. Including EV battery stewardship as a core component of this circular future is a vital step forward for the planet.



### Residential Battery Energy Storage Systems (BESS)

Residential battery energy storage systems are a complementary technology to renewable energy generation and provide homeowners with an opportunity to leverage their investment in solar energy generation.

The BSC is engaging with the Clean Energy Council (CEC), the Smart Energy Council (SEC) and the Department of Climate Change, Energy, the Environment and Water (DCCEEW) to consider how to best introduce stewardship for residential battery energy storage systems.

DCCEEW is leading the e-Stewardship Reform Working Group to consider how stewardship for photovoltaic (PV) panels and BESS should evolve.

The BSC is a strong advocate for an industry-led scheme as the preferred solution for residential BESS. An industry-led approach can be the most cost-effective and flexible way to introduce circularity into the energy storage sector.

Operating a purpose-built scheme for BESS allows industry to address the unique requirements regarding safe handling, de-energising, collection and transportation, and resource recovery in the most efficient manner possible.

Continuing its dialogue with industry, the BSC welcomes the opportunity to discuss this important issue with industry members.

# Regulatory reform for stewardship success

The objective of the Recycling and Waste Reduction Act 2020 (RaWR Act) is to create a shared responsibility for managing products, waste from products, and waste material to:



Reduce their impact on human and environmental health



Realise the community and economic benefits of taking responsibility for them



Develop a circular economy that maximises their continued use and account for environmental impacts

**The BSC is advocating for regulatory reform to address core stewardship challenges. For any scheme getting started or seeking to expand into new product categories, the pathway requires industry participation to obtain scheme funding. Without it, no scheme can operate successfully.**

The RaWR Act makes it clear this is to be achieved by encouraging and regulating manufacturers, importers, distributors, designers, and other persons to take responsibility for a product.

A stewardship outcome requires regulatory intervention, but it is important to identify the challenges first, and then determine what level of encouragement or regulation is required.

Having navigated the establishment and deployment of a voluntary scheme, the BSC is well placed to understand the challenges and how a simplification of regulatory interventions could transform stewardship with minimal delay and reduced cost to government, industry, and consumers.

Currently the RaWR Act has only three options for fostering product stewardship: Voluntary, Co-regulated, and Mandatory. None of these options address the core challenge of free riders being experienced on the ground by industry schemes.

Products needing action are identified by the Minister by listing them as a priority product. This provides a signal to industry that action is needed or regulation in the form of Co-regulated or mandatory is to follow.

In regulated schemes, liable parties are compelled to participate, but industry is not able to adjust or change as the landscape changes. Voluntary schemes provide industry with the flexibility to drive the scheme forward, yet the challenges presented by free riders are hard to avoid.

**The core challenge is to secure full industry participation in a scheme, while still allowing industry the flexibility to change and adapt the scheme to achieve stewardship outcomes as circumstances and the market dictate.**

This proposal offers a small refinement to the RaWR Act to address the core challenge for maximising the effectiveness of stewardship outcomes.

The BSC welcomes further dialogue with Governments and industry regarding this proposal, further information can be found on the B-cycle website.

Regulatory Reform 



# United Nations Sustainable Development Goals

The Battery Stewardship Council stands committed to the fulfillment of the 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015. This is our contribution to the Sustainable Development Goals (SDG's), an urgent call for action by all countries.



## Good health and well-being

B-cycle promotes health and well-being by preventing hazardous material releases into the environment, reducing soil and water contamination. This protects the health of all Australians from the adverse effects of pollution.



## Clean water and sanitation

By keeping used batteries out of landfills, toxic substances are prevented from leaching into water sources, resulting in cleaner and safer water. This aligns with SDG 6's goal of ensuring access to clean and sustainable water resources, protecting aquatic ecosystems, and improving overall water quality.



## Affordable and clean energy

Battery recycling helps in the recovery of finite resources essential for future use in renewable energy systems, reducing the demand for mining and energy-intensive manufacturing processes. This supports SDG 7's aim to increase access to clean and sustainable energy sources while promoting energy efficiency.



## Decent work and economic growth

B-cycle generates employment opportunities through the collection, sorting, and processing of used batteries. This contributes to economic growth, aligning with SDG 8's goal of promoting inclusive and sustainable economic development.



## Industry, innovation, and infrastructure

B-cycle fosters innovation in waste management, materials recovery, and sustainable technologies. These innovations can enhance infrastructure development and contribute to more sustainable industrial practices, supporting SDG 9's objectives.



## Responsible consumption and production

**Stewardship and circular economy**  
By extending the lifecycle of batteries and building a circular economy, B-cycle contributes to SDG 12. It promotes sustainable consumption and production practices that reduce resource consumption, minimise waste, extend product lifecycles, and raise awareness about responsible choices.



## Climate action

**Recycled battery materials reduce CO<sub>2</sub> emissions by 50% (when compared to primary materials)**  
Placing highly purified recycled materials from batteries onto the materials market has the potential to offset the CO<sub>2</sub>e emissions of material supply by around 50%. This supports SDG 13's objective of taking urgent action to combat climate change and its impacts.



## Life on land

**Landfill diversion**  
Recycling batteries through B-cycle prevents the soil contamination and habitat destruction associated with sending used batteries to landfill. This helps preserve terrestrial ecosystems and biodiversity, aligning with SDG 15's aim of protecting and restoring life on land.



# The team



# Small team, big ambition

## Battery Stewardship Council team



**Libby Chaplin**  
CEO



**Brett Buckingham**  
Director: Engagement  
& Technology



**Cara Delmas**  
Director: Communication  
& Sustainable Change



**Kirstyn Krausz**  
Executive Assistant



**Jade Barnaby**  
Director: Best Practice  
& Innovation



**Ana Paula Gomes**  
Sustainability  
Project Coordinator



# Battery Stewardship Council board

## Independent



**Gerry Morvell**  
BSC Board Chair



**Margaret Donnan**  
Independent



**Kylie Hughes**  
QLD Dept Env & Sci.

## Importers



**Michael Brendle**  
Techtronic Industries



**Mariusz Surmacz**  
Duracell



**Jon Kirby**  
Energizer

## Retailers



**Peter Bruce**  
Woolworths



**David Stout**  
National Retail  
Association

## Recyclers



**Ben Pritchard**  
Envirostream

## BSC



**Libby Chaplin**  
BSC CEO



**Craig McIntosh**  
BSC CFO



Be a part of our  
positive change



**Battery**  
Stewardship  
**Council**