



A circular future for batteries

The essential road map for decarbonisation
Libby Chaplin
CEO, Battery Stewardship Council

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Agenda

1. Drivers for circularity and regenerative economies
2. Who is BSC and B-cycle?
3. Importance of a circular future for achieving decarbonisation
4. Ideal elements for a circular future

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Drivers for circularity and regenerative economies

Road map for decarbonisation

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B-cycling matters

Safety and fire prevention



Inherent fires risk, particularly in low quality products & lithium-ion batteries

- + Death this week from an e-scooter battery fire in Sydney
- + Consumers limited awareness of the risks of buying **low quality products**
- + **Government** increasingly focused on battery risks and safety
- + The waste and recycling industry is reporting an average of **3 fires a day** in waste and recycling infrastructure
- + An increasingly challenge for **market perception**
- + B-cycle provides **assurance** that participants are part of the solution and reported outcomes can be trusted

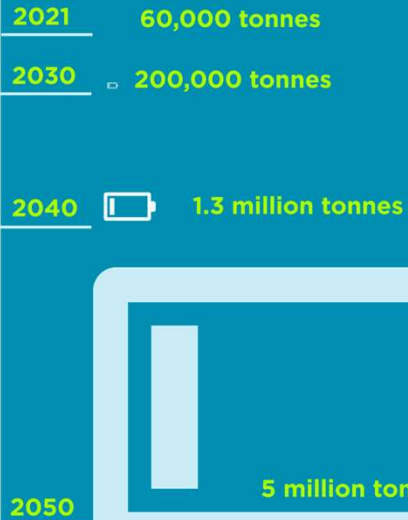
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B-cycling matters

Scaling up recycling & reuse capability & infrastructure

Projecting exponentially increasing volumes of used lithium-ion batteries



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B-cycling matters

Future proofing energy security

US Department of Energy Draft Report Critical Materials Assessment published in May 2023 identifies high risk metals

MEDIUM TERM 2025-2035

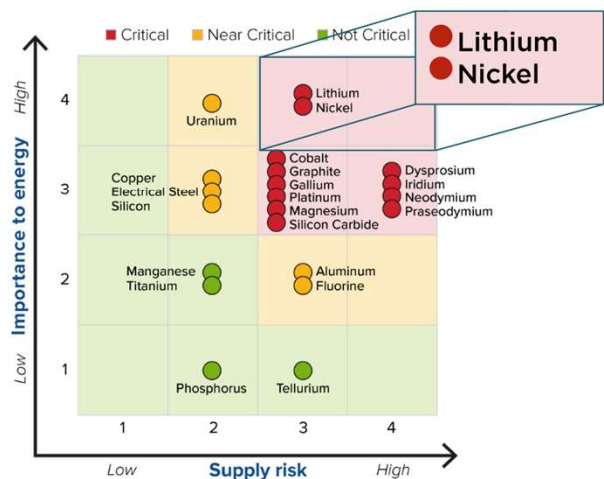


Figure 3.2 Medium-term (2025–2035) criticality matrix

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B-cycling matters


Sustainability credentials

- + Community expectations
 - + As we navigate the road to decarbonization, many early adopting consumers will be looking for strong sustainability credentials
- + ACCC increasingly focused greenwashing
 - + Current action and future regulation
- + Engagement in independent stewardship schemes go a long way to demonstrating sustainability credentials



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BatteryStewardshipCouncil



About BSC & B-cycle

BSC is a **not-for-profit** which brings together everyone in the battery value chain to improve battery stewardship

B-cycle is authorised by the ACCC and accredited by the Australian Federal Government.




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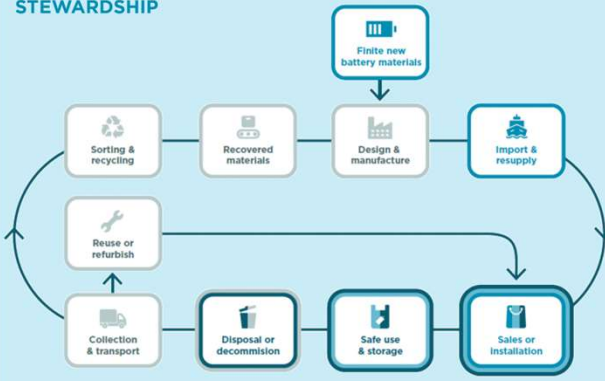
Battery Stewardship Council **BSC Board with Directors representing the whole supply chain** 

INDEPENDENT	IMPORTERS	RETAILERS	RECYCLERS	BSC
 Gerry Morvell BSC Board Chair	 Michael Brendle Techtronic Industries	 Peter Bruce Woolworths	 Ben Pritchard Envirostream	 Libby Chaplin BSC CEO
 Margaret Donnan Independent	 Mariusz Surmacz Duracell	 David Stout National Retailers Association	 Vacancy	 Craig McIntosh BSC CFO
 Kylie Hughes QLD Dept Env & Sci.	 Jon Kirby Energizer			

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Battery Stewardship Council **B-Circular Economy** 

BATTERY STEWARDSHIP




Everyone has a role to play

STEWARDSHIP LEGEND

- Manufacturers & Importers**
 - + Incorporate circularity into battery design and sell batteries to B-cycle accredited retailers
- Retailers, Dealers & Installers**
 - + Support and supply batteries from B-cycle accredited suppliers
- Consumers**
 - + Buy batteries brands with strong stewardship credentials
 - + Use and store batteries safely and responsibly
 - + Ensure used batteries are repurposed or recycled
- Collection & recycling network**
 - + Collect, transport, sort, and process used batteries in a safe and environmentally sound manner onshore.
- Government Stewardship**
 - + Guide and implement harmonized policies that support stewardship
 - + Procure B-cycle accredited battery brands
 - + Provide the framework and accreditation for Stewardship to flourish
- Battery Stewardship Scheme**
 - + Manage levy funds to foster sustainability across the battery ecosystem
 - + Oversee a safe and convenient battery recycling network
 - + Provide transparency and traceability for battery materials

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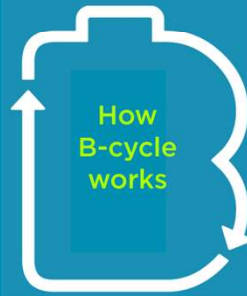
About B-cycle



1 Funded by importers via levy or other mechanism

3 Strong branding, education & communication to raise awareness about battery safety and disposal options

5 Rebates fund battery collection, disassembly & recycling



How B-cycle works

2 Cost passed on by retailers in product price

4 Accreditation used to verify capability, compliance, safety & recycling outcomes

6 Consumers / service providers take batteries to B-cycle accredited Drop off points / Recyclers

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Accreditation model with general & sector specific obligations

Specifications derived from AS 5377:2022 & international standards

IMPORTERS

RETAILERS

DROP OFF POINTS

COLLECTORS

SORTERS

PROCESSORS

DOWNSTREAM PROCESSORS



B-cycle Scheme Commitment Form

As an accredited Battery Steward, we:

- agree to participate in the scheme and abide by the general and specific obligations selected below
- acknowledge that this commitment document is subject to approval, verification, and revision by the BSC Board
- support the objectives of the Battery Stewardship Scheme to:
 - increase resource recovery and recycling
 - minimize the environmental, health and safety impacts of used batteries generated in Australia
 - maximize Australia's battery recycling capacity, including international trade and export


General obligations for all Battery Stewards

As Battery Stewards we agree to:

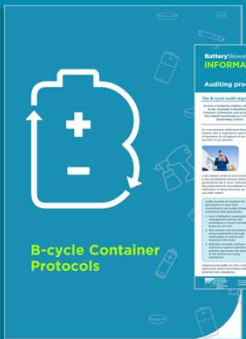
- take primary responsibility for meeting performance to other accredited B-cycle participants
- ensure all used batteries are processed by B-cycle accredited recyclers for environmental and safety reasons
- use priority to the purchase of batteries manufactured in Australia
- promote the Scheme to the community, other businesses, and organisations, and use B-cycle approved signage and logos
- comply with legal and other requirements, including B-cycle standards and procedures for safety, security, environment and risk, health, and battery

Specific Accreditation Obligations for Supply Chain Battery Stewards

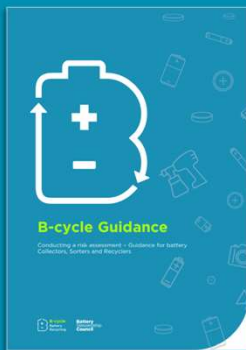
Tick box for all the following categories your organisation is seeking accreditation for its role in the supply chain:



B-cycle Collection & Recycling Network Accreditation Protocols



B-cycle Container Protocols



B-cycle Guidance

Collecting in the environment - Guidance for Battery Collectors, Sorters and Recyclers

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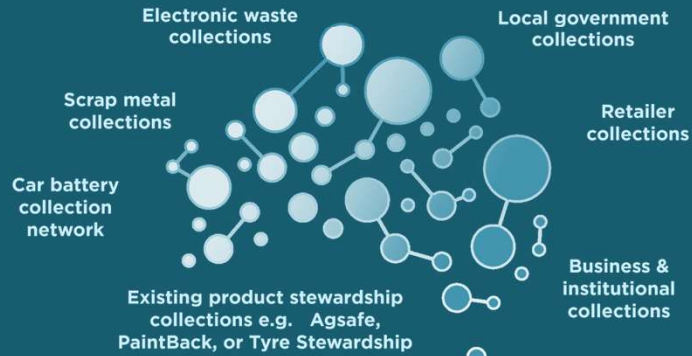
About B-cycle

Battery Stewardship Council

Disruptive rebate model

- + Rebate model provides a unique leveraging model
- + Accessing existing and new collection channels
- + Rapidly increasing drop off locations

Rapid expansion of the collection network



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Battery Stewardship Council

Participation ~ Importers and Retailers

B-cycle Battery Recycling

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Battery Stewardship Council

Participation

Collectors & Recyclers













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Participation ~ Drop off points



AAAPN Cairns AAAPN Townsville Absolute Batteries Toowoomba Ace Recycling Group Pty Ltd Albany City Council ALDI ANG Pooraka Armidale Regional Council Ballina Shire Council Bathurst Regional Council Batteries Sunshine Coast Battery World Bega Valley Shire Council Bellingen Shire Council Berrigan Shire Council Big W Bland Shire Council Blue Mountains City Council Bluescope Steel Bribie Green Batteries and Auto Parts Broken Hill City Council Bunbury Harvey Regional Council Bundaberg Regional Council Bunnings Group Limited Byron Shire Council Cabonne Shire Council Cairns Hardware Cairns Regional Council Camden Council Canada Bay City Council Carrathool Shire Council Casey's Toys 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 Newcastle City of Rockingham City of Stirling City of Sydney Clarence Valley Council Cliff Wright Motors Pty Ltd Coffs Harbour City Council Coles PTY LTD Coalamon Shire Council Coonamble Shire Council Co-op Parkes Cootamundra Gundagai Cornetts Supermarkets Cowra Shire Council Deakin University Drakes Drita Camping Kitchens Dubbo Regional Council East Arnhem Regional Council East Gippsland Shire Council Eastern Metropolitan Regional Council Ecycle Ecycle Solutions Edward River Council Envirostream PTY LTD Eurobodalla Shire Council EWASTE Federation Council Flinders Green Flinders University Foodland Promotions Foodworks (Australian United Retailers) Forbes Shire Council Frankston City Council Fremantle Village Friendly Grocer Gannawarra Shire Council Gilandra Shire Council Glen Innes Shire Council	Greater Hume Shire Council Green Technology Recycling Griffith City Council Gundagai Community Recycling Centre Gunnedah Shire Council Hart Recycling Pty Ltd Hastings Co-op Hawkesbury City Council Hay Shire Council Home Hardware Hornsby Shire Council Hume City Council IGA IGA Co-op Inner West Inverell Shire Council Junee Shire Council Kempsey Shire Council Kiama Municipal Council Kreuzer Scrap Metals Kyogle Shire Council Lachlan Shire Council Lake Macquarie City Council Leeton Shire Council LG Electronics Australia Lismore City Council Lithium Australia Liverpool City Council Lockhart Shire Council Lucke's Fresh Food Market Bairnsdale Maitland City Council Mandurah Waste Management Centre Melbourne Zoo Metcash MidCoast Council Milgate Primary School Milwaukee Tools Mitre 10 Monash City Council Moonee Valley City Council	Moree Plains Shire Council Mornington Shire Council Murray River Council Murrumbidgee Council Murrumbidgee Shire Council Nabucca Shire Council Narrabri Shire Council Narrandera Shire Council NEWA Moorabbin North Sydney Council Oberon Council Officeworks Orange City Council Pakenham Consolidated School Parkes Shire Council Pellenc Australia Penrith City Council Polytrade Operations - Re.Group Port Macquarie Hastings Port Stephens Council Quantum Recycling Solutions Queanbeyan-Palerang R&J Batteries Randwick City Council Recycling Parks Return-IT Australia Reverse E-Waste Richmond Valley Council Ritchies Scipher Technologies Sell & Parker Shellharbour City Council Shoalhaven City Council SHRED-X Singleton Council Snowy Monaro Regional Council Snowy Valleys Council South Australian EPA Southern Downs Regional Council	SPC Ecycle Spud Shed St Vincent de Paul Sunshine Coast Council SupaBarn Farmers Market Surf Coast Shire Council Sydney Tools Tamala Park Waste Management Facility Tamworth City Council Tasmanian Independent Retailers (IGA) Temora Shire Council Ten Tops (Co-op) Tentersfield Shire Council The Activ Group The Battery Bar Thrifty-Link Tinks Toodyay - Railway Road Transfer Station Tools Warehouse Total Green Recycling Total Tools True Value Tweed Shire Council United Star Resources (USR) United Tools Upper Hunter Shire Council Uralla Shire Council Wagga Wagga City Council Walcha Shire Council Waverley City Council Wentworth Shire Council Werribee Open Range Zoo Western Metropolitan Regional Council Whitehorse City Council Whitsunday Regional Council Wingecarribee Shire Council Wollongong City Council Woolworths PTY LTD Wyndham City Council Xtreme Rhino Enterprises
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Supporters & Partners

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PROGRESS REPORT SINCE LAUNCH

Results of B-cycle's unique leveraging model

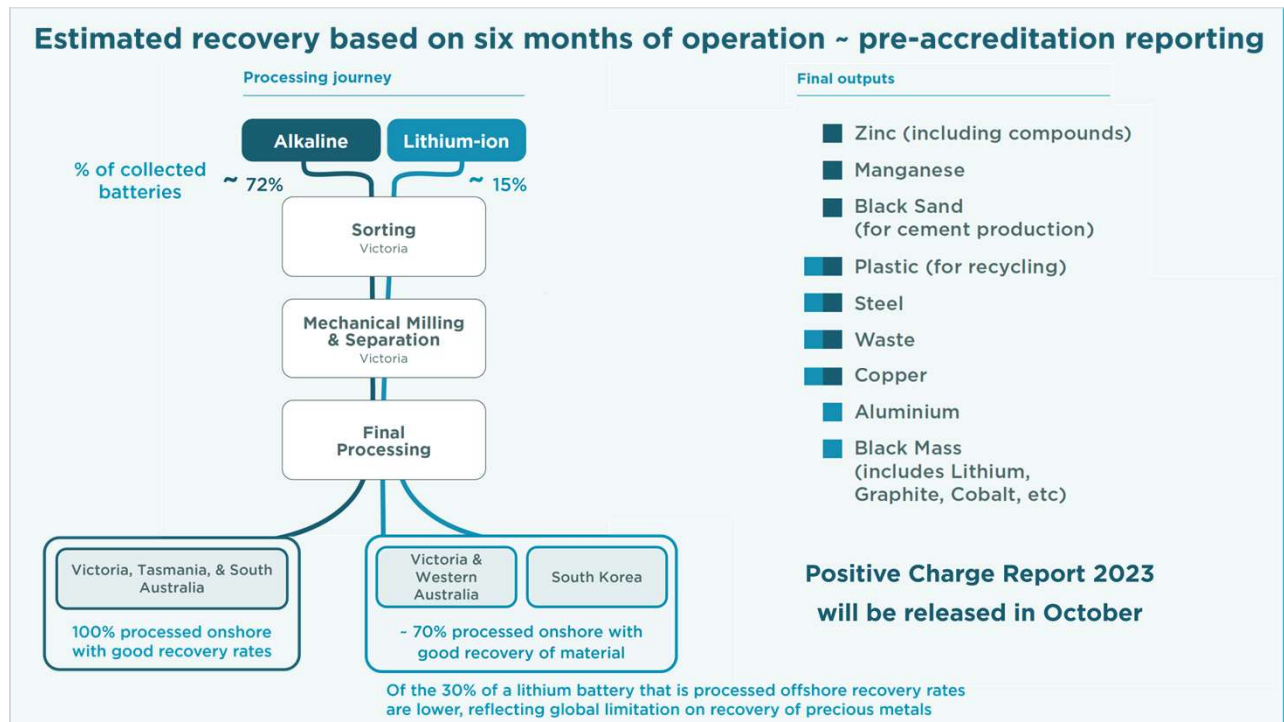
54 Accredited importers	4200 + Drop off points across 8 States & Territories ... including:	
28 Accredited retailers	3481 Public Drop off points 732 Private Drop off points	
285 Organisations providing accredited Drop off points	3,046,056 kg batteries collected for recycling	
9 Accredited collectors and recyclers	126,919,000 Individual batteries (EBU = 24g)	

An extensive network of 4206 Drop off points - and growing

ACT	61
NSW	1134
VIC	1121
SA	439
WA	446
QLD	834
NT	40
TAS	130
Total	4206

*At time of reporting

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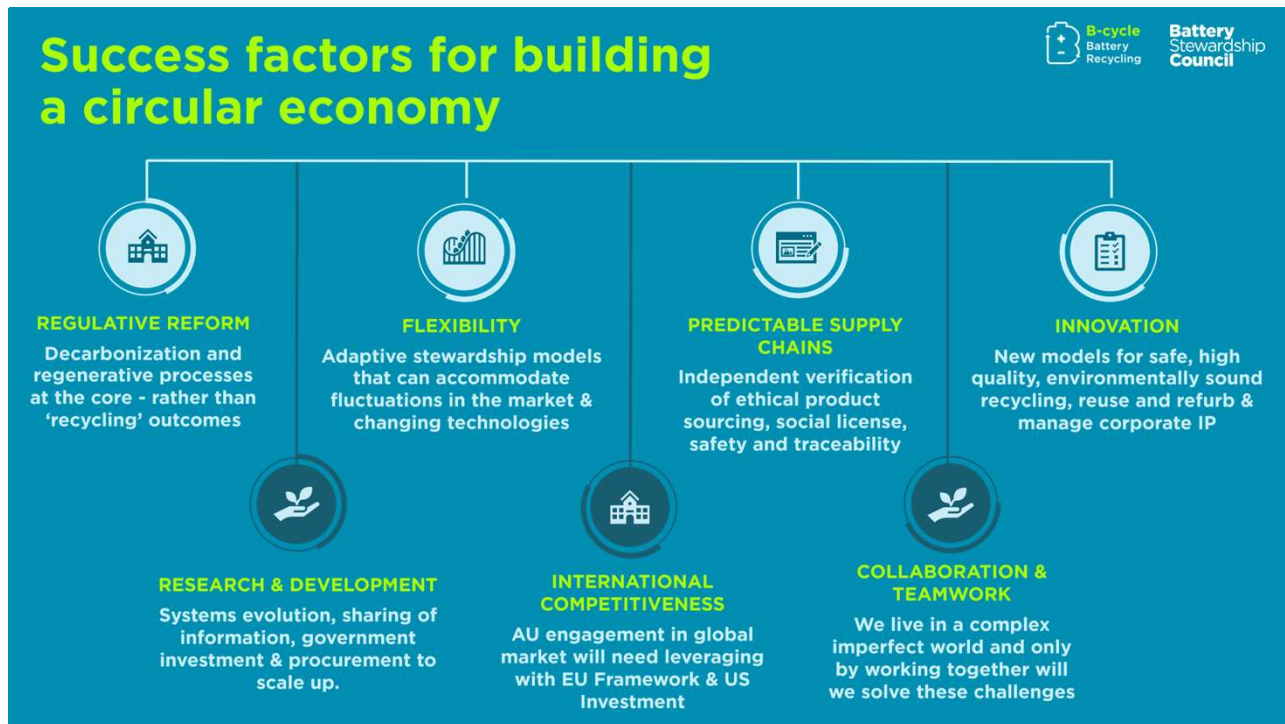
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Value of stewardship

Impact of B-cycle	Pro-active collaboration	Looking ahead
<ul style="list-style-type: none"> + In less than 18 months, Australia has an established battery recycling Scheme that: <ul style="list-style-type: none"> + will next year inject \$20m into the industry + has nearly doubled the national battery recycling rate. + B-cycle provides a strong stewardship framework + B-cycle's mission to create a circular economy that includes: <ul style="list-style-type: none"> + delivering efficient & successful stewardship models focused on market failure + industry wide R&D + facilitation of best practice + market development + government advocacy 	<ul style="list-style-type: none"> + Through B-cycle, we've created a collaborative framework for a creating circular economy for batteries in Australia + Progress would not have been possible without industry investment, engagement & partnerships. 	<ul style="list-style-type: none"> + Our approach is one of doing and learning + Globally battery recycling will play an increasingly important role in supporting the supply of minerals and materials for battery production + BSC looks to support industry to respond to market expectations for quality assurance, safety, and traceability to verify stewardship outcomes.

Battery Stewardship Council **B-cycle Battery Recycling**

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B-cycling matters

The role of battery collection, disassembly, & recycling, in decarbonizing the future


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Battery Stewardship Council **B-cycle Battery Recycling**

Benchmarking circularity

MARKET FLOWS **ENVIRONMENTAL IMPACT**

Battery Stewardship Council



Battery Market Analysis

The latest market data for the battery industry in Australia


October 2023

A B-cycle benchmarking project conducted by UTS

UTS **B-cycle Battery Recycling**

Understanding our impact

Battery Stewardship Council



Battery Life Cycle Analysis

The environmental impacts of battery recycling in Australia

October 2023

A B-cycle benchmarking project conducted by UTS

UTS **B-cycle Battery Recycling**

Conducted by UTS and published on the B-cycle website today ~ www.bcycle.com.au

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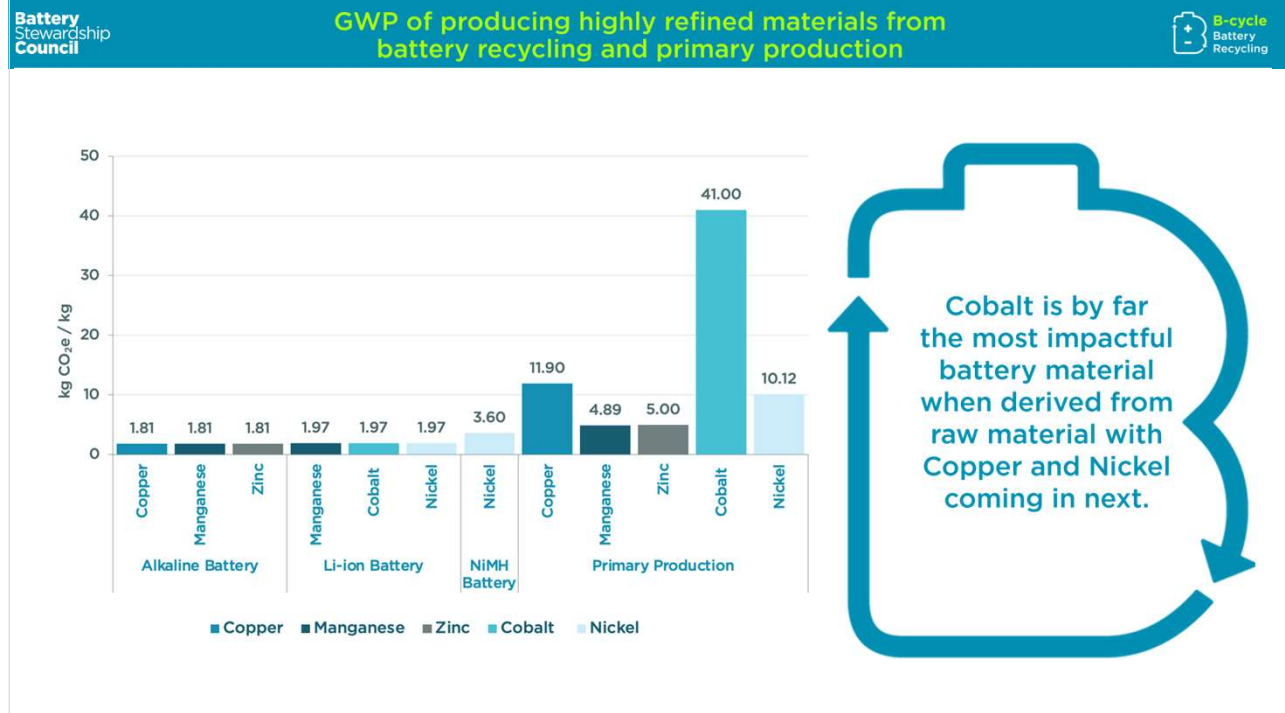
B-cycling matters

Battery collection and recycling to play an important role in decarbonisation

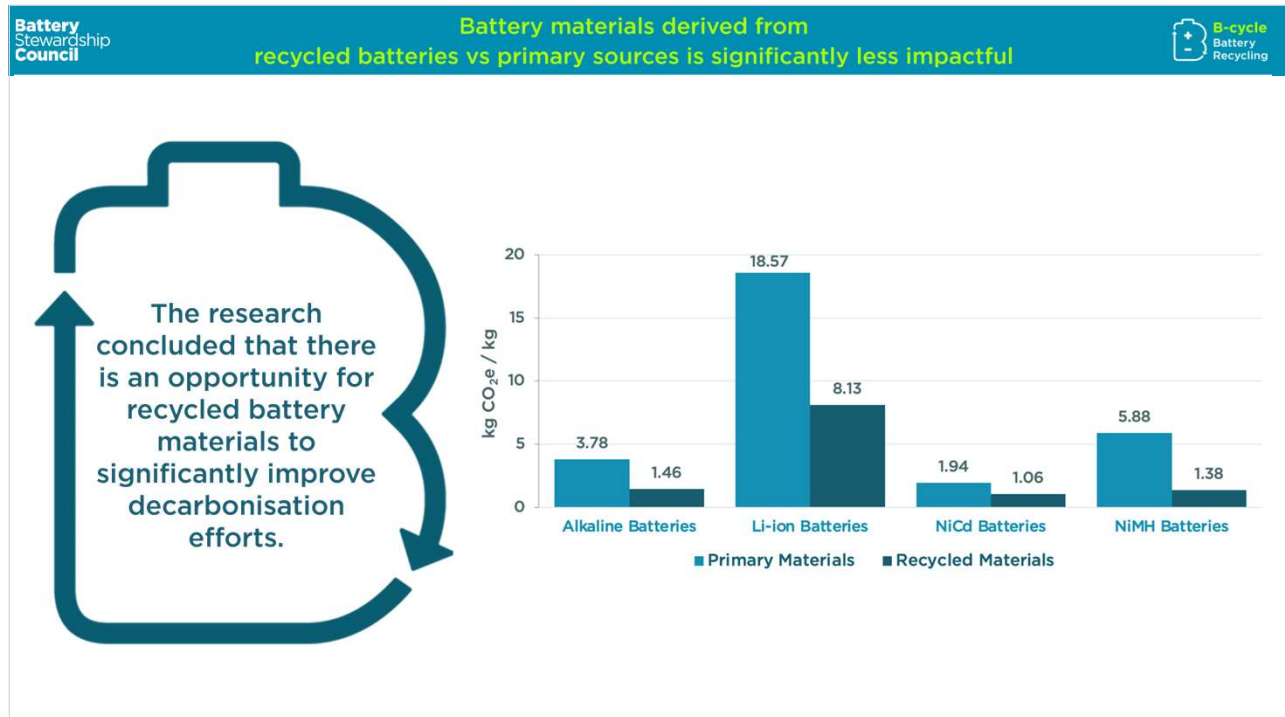
“Placing highly purified recycled materials from batteries onto the materials market has the potential to offset the CO₂e emissions of battery materials supply by around 50%.”

B-cycle Battery Recycling **Battery Stewardship Council**

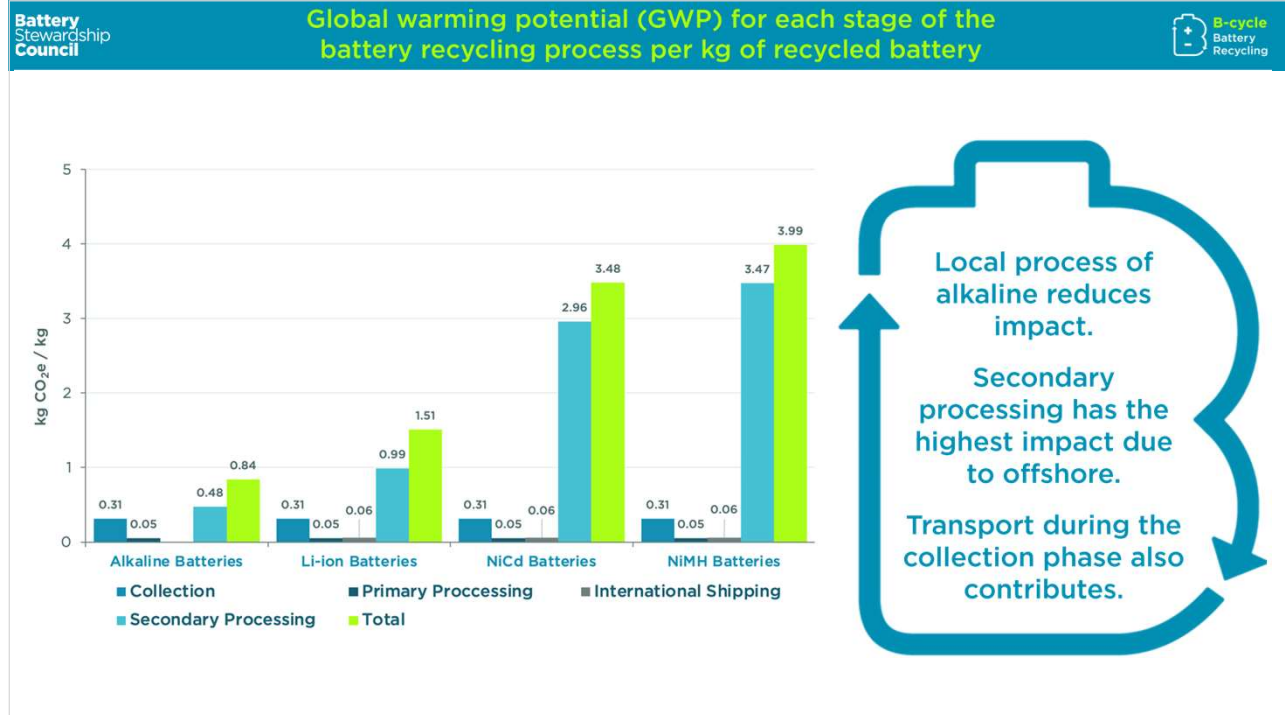
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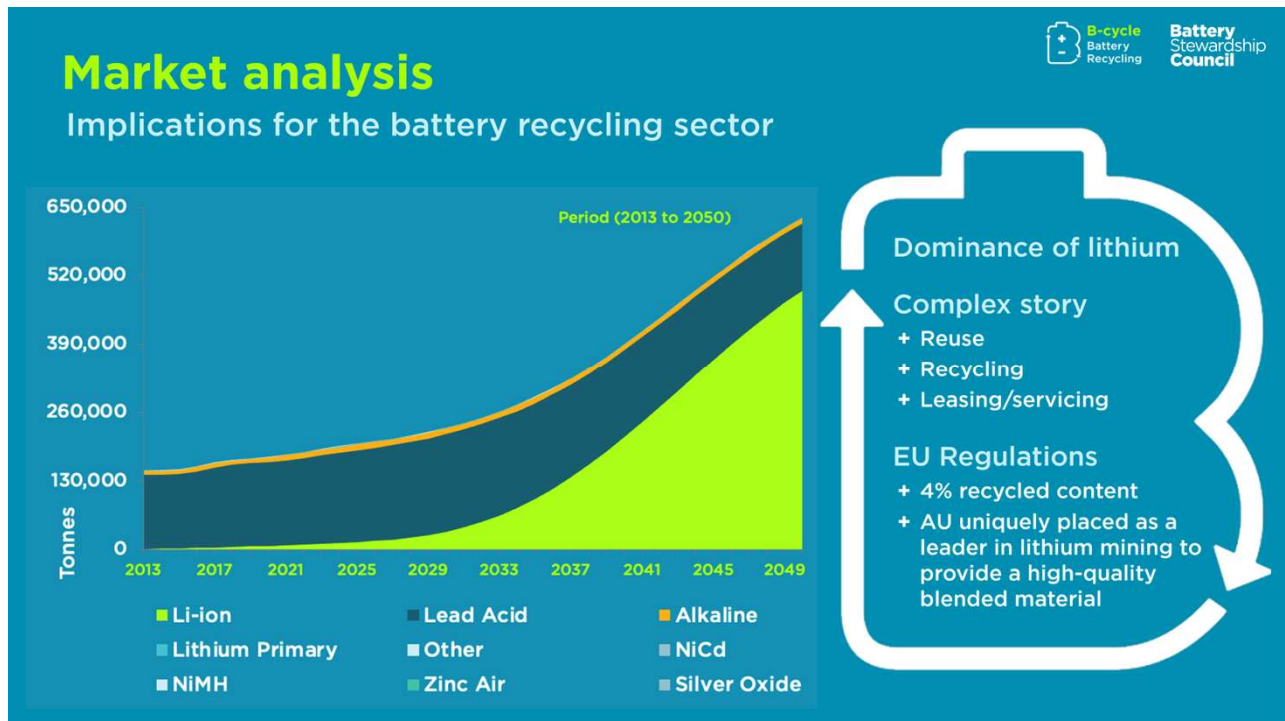
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Opportunities

Meeting ACCC and consumer expectation

- + Participation in B-cycle positions industry to:
 - + reduce overheads by leveraging existing systems for battery stewardship
 - + demonstrate its sustainability credentials
 - + secure environmental and economic gains
 - + continue to show AU the impact of a best practice, product stewardship scheme.

Enhanced decarbonisation

- + Coordinated strategic planning for scaling up
- + Clear benefit if materials from recycled batteries are refined to a high purity and reduce demand on primary material production.
- + Highlights potential CO2e emissions savings of around 50%.

Global positioning

- + Emerging battery technologies face a opportunity leverage B-cycle to establish a stewardship scheme that is:
 - + fit for purpose
 - + cost effective,
 - + avoids the mistakes and costly fall-out of inaction as seen recently by the Solar Panel industry by prioritising the discussion of end-of-life processes today.



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Partner with us



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BatteryStewardshipCouncil



Join us in the B-cycle community

Questions?

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BatteryStewardshipCouncil

Thank you



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.



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