



# **New Zealand Battery Product Stewardship Research Milestone Three: Scheme Proposal**

---

Report for the Ministry for the Environment

Prepared on behalf of the Battery Industry Group (B.I.G.)  
21 April 2021

Approved by

[Project Director's Signature]



Duncan Wilson

(Project Director)

Eunomia Research & Consulting Ltd  
PO Box 78 313  
Grey Lynn  
Auckland  
New Zealand

Tel: +64 (0) 376 1909

Web: [eunomia.co.nz](http://eunomia.co.nz)

#### *Acknowledgements*

Our thanks to all those who provided feedback and input into this report. A list of B.I.G. members, working group members, and Governance Group Members is provided in Appendix A.12.0.

We would like to thank the Ministry for the Environment for the Waste Minimisation Fund grant, and the Energy Efficiency and Conservation Authority, Vector, and the Motor Industry Association for their financial support for the project, which made this report possible.

#### *Disclaimers*

Eunomia Research & Consulting has taken due care in the preparation of this report to ensure that all facts and analysis presented are as accurate as possible within the scope of the project. However, no guarantee is provided in respect of the information presented, and Eunomia Research & Consulting is not responsible for decisions or actions taken on the basis of the content of this report.

The Ministry for the Environment does not necessarily endorse or support the content of this publication in any way.

# Executive Summary

## E.1.0 Introduction

---

This document puts forward a proposal for a ‘circular’ product stewardship scheme for large batteries. The New Zealand Battery Stewardship Research project has worked to identify the most appropriate integrated solution for New Zealand, for our current state of play and different future scenarios that will support a circular economy.

As per the project plan, this Milestone Three report covers:

- Import/export barriers
- Stakeholder consultation
- Key product stewardship scheme elements
- Proposed scheme design
- Timelines and implementation.

### E.1.1 Previous Work

There is a range of background and research work that sits behind the current project. This is formally presented in the Vector [New Energy Futures Paper: Batteries and the Circular Economy](#).<sup>1</sup> The paper and its [Technical Addendum](#) cover a range of issues that lay the groundwork and context for the design of a large battery product stewardship scheme. The Milestone One and Two reports should also be referred to as these cover the background including NZ context and legislation, product stewardship scheme elements, international research, overview of NZ value chains, battery value chain detail, potential scheme costs, options for recovery of costs, and consumer research. The B.I.G. Safety Guidelines are also attached as a supporting document.

### E.1.2 Battery Industry Group

The development of the Product Stewardship Scheme for large batteries has been overseen by the Battery Industry Group (B.I.G.). B.I.G. is a stakeholder group that has been assembled to provide input and oversight for this project. Eunomia is part of the B.I.G. Core Delivery Team, with the role of Lead Researcher.

---

<sup>1</sup> Vector (2019) New Energy Futures Paper: Batteries and the Circular Economy. Available from: <https://www.vector.co.nz/articles/vector-s-new-energy-futures-paper-on-batteries-and>

## E.2.0 Import/Export Barriers

---

Existing international and national guidelines can restrict the importing/exporting of (waste) batteries. Depending on the battery's lifecycle stage, chemistry, origin, and destiny and mode of transportation, it may, or may not, be classified as Dangerous Goods or hazardous waste.

When transporting batteries to and from New Zealand, specific rules apply depending on the mode of transportation. Strict guidelines are applied by airlines, due to the known risks and potentially catastrophic results of battery fires. Because of that, and because of the size of batteries discussed in this document, the vast majority of any import and export of large batteries is likely to occur through maritime transport.

While the existing controls do create some restrictions, and the processes involved result in additional costs faced by exporters, they will not prevent the export of used batteries or product resulting from the pre-processing of batteries.

## E.3.0 Stakeholder Consultation

---

Stakeholder consultation over the course of the development of the proposed scheme design has been extensive. For Milestone Three the following stakeholder engagement activities were undertaken:

- 2 workshops to develop the draft scheme design
- 9 stakeholder engagement events (meeting and webinars) to present the scheme design and gather feedback
- Follow up discussions with key parties
- Survey of AA members with 1,415 responses received on end-of-life battery questions
- 2 Governance Group meetings
- Weekly Core Delivery Group meetings
- 5 articles in the mainstream media

## E.4.0 Key Product Stewardship Scheme Elements

---

The requirements that have informed this product stewardship scheme design include the following:

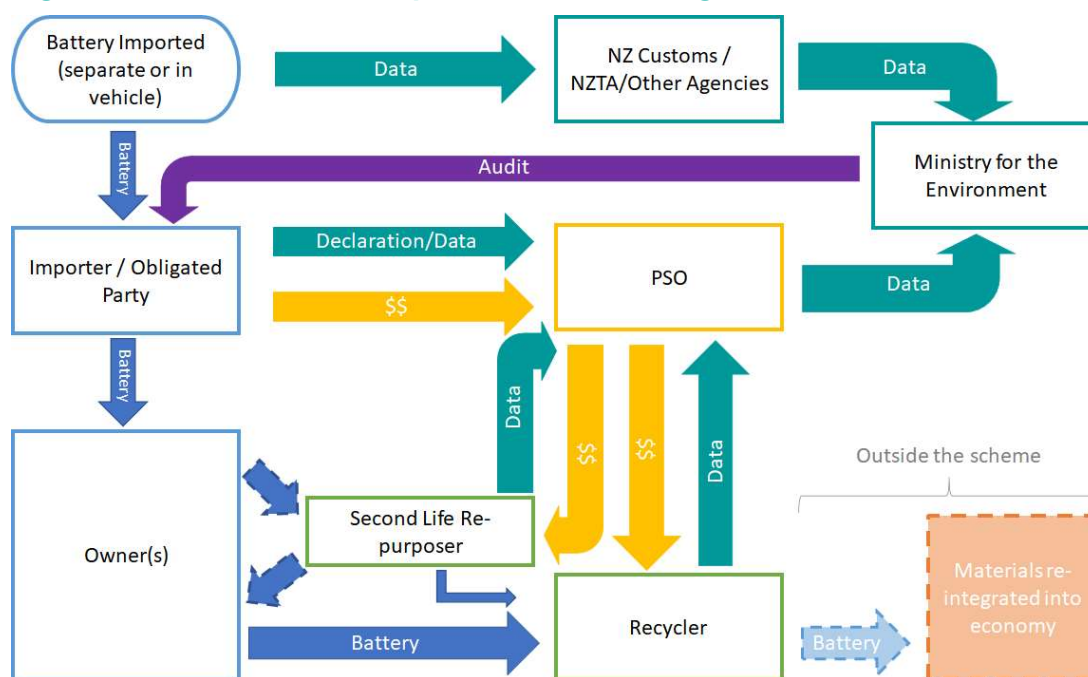
- Complies with the requirements of the WMA
- Complies with the General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020 (Product Stewardship Guidelines).
- Delivers a circular product stewardship scheme that will help deliver a circular economy for large batteries

- Supports and aligns with the needs of the range of organisations involved in the battery and related industries
- Is equitable and comprehensive, and avoids loopholes and free riders
- Is simple and easy to understand, convenient, and accessible for consumers
- Is able to evolve over time as the needs of the sector expand and change, and as new technologies and processes come into play
- Is well governed, managed, and provides transparency and accountability
- Provides for input from all stakeholders
- Is affordable and efficient, and minimises administration costs.

## E.5.0 Proposed Scheme Design

The diagram below provides a high-level overview of the proposed scheme design.

**Figure E. 1: Overview of Proposed Scheme Design**



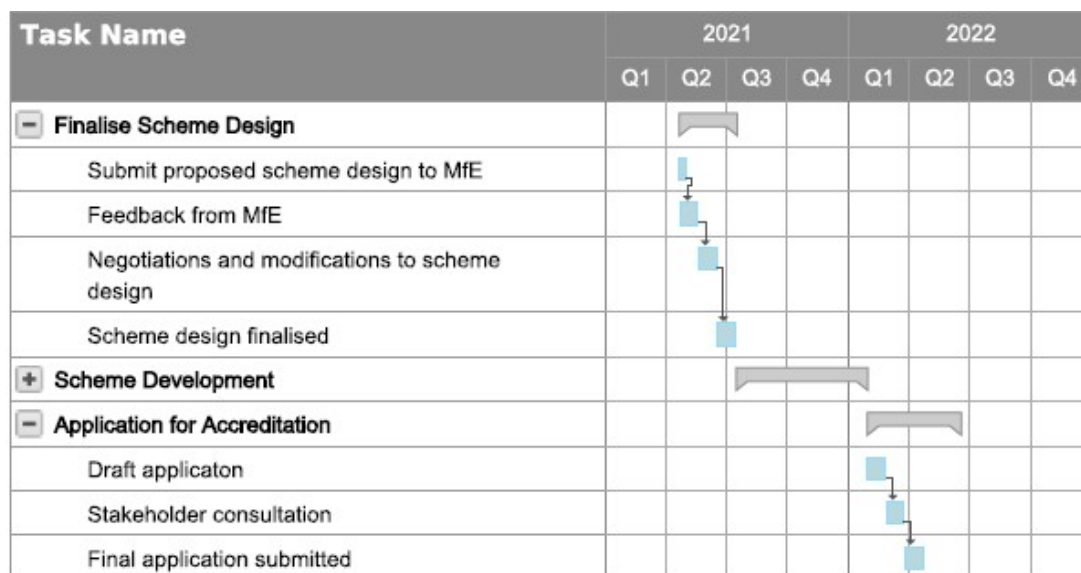
The proposed scheme is as follows:

1. When a large battery is imported into New Zealand (either as a battery or in a vehicle or other machinery), or manufactured in New Zealand, information on the obligated item is recorded by Customs and potentially other agencies, such as the New Zealand Transport Agency (NZTA).
2. Obligated parties importing the batteries provide information the items they are importing to the Product Stewardship Organisation (PSO). *Ideally the provision of this information is required under regulation.*

3. The PSO reviews and records the information along with that from other obligated parties. The PSO calculates the financial obligation of each party (based on the total costs of operating the scheme for that period, divided by the proportion of the numbers of batteries each obligated party imports in that period). The PSO then bills each obligated party (e.g. monthly).
4. The PSO provides regular information on the batteries imported to the Ministry for the Environment which then periodically checks this information against data from Customs or other agencies and audits each obligated parties' declarations.
5. The importers/obligated parties sell the products, which then move through the value chain (noting there may be multiple owners) as normal, until they reach end-of-use or end-of-life.
6. At end-of-use (where they may be, for example, removed from a vehicle and repurposed in another application such as in stationary storage), the accredited 'second-life repurposer' records details about the battery and provides this to the PSO. If applicable, they may also make a claim for payments for the handling and upgrading of the battery.
7. At end-of-use (where there is no further economic value) an accredited recycler will accept the battery at no cost to the owner. The recycler records details about the battery and provides these to the PSO. The PSO then makes appropriate payments to the recycler to cover the net costs of recycling.

## E.6.0 Timelines and Implementation

A summary of the key tasks and proposed timelines is provided in the Gantt chart below.



The timelines assume that an application for accreditation will be made within one year of the date of submission of this proposed scheme design, as stipulated in the Product Stewardship Guidelines.

Timelines for approval of the scheme by the Minister, and enactment of required regulations, are dependent on a range of factors. Government is reportedly targeting 2023 for the launch of product stewardship schemes that are currently well advanced in their design.

## E.7.0 Conclusions

---

The Battery Product Stewardship Research Project has successfully developed a proposed circular product stewardship scheme design that reflects the input of stakeholders and has their wide support.

The Battery Industry Group (B.I.G.) is of the view that the proposed design fulfils the design objectives set out for the project.

Key next steps include establishing a 'transition team' to agree the scheme design, set up a PSO to deliver the scheme, and securing funding to enable the work to be undertaken and the scheme to be established to ensure a sustainable, circular economy value system for this important technology.

# Contents

---

<b>Executive Summary .....</b>	<b>i</b>
<b>1.0 Introduction .....</b>	<b>4</b>
1.1 Product Stewardship Scheme Development .....	4
1.2 Milestone Three Report .....	5
<b>2.0 Milestone Three Methodology .....</b>	<b>7</b>
<b>3.0 Import/Export Barriers .....</b>	<b>7</b>
3.1 Introduction .....	7
3.2 Dangerous Goods.....	8
3.3 Batteries as Waste .....	8
3.4 Import/Export Regulations Depend on Mode of Transport .....	8
<b>4.0 Stakeholder Consultation .....</b>	<b>9</b>
4.1 Media Engagement for Milestone Three .....	10
<b>5.0 Key Product Stewardship Scheme Elements.....</b>	<b>11</b>
<b>6.0 Proposed Scheme Design.....</b>	<b>12</b>
6.1 Overview .....	12
6.2 Scope of the scheme.....	13
6.2.1 Definitions .....	13
6.2.2 Obligated Parties.....	16
6.3 Overall Scheme Structure .....	17
6.3.1 Co-Design.....	17
6.3.2 Funding the Scheme .....	18
6.3.3 Data Gathering.....	20
6.3.4 Targets and Reporting.....	22
6.3.5 Responsibility for Collection and Recovery.....	24
6.3.6 Standards and Accreditation.....	26
6.3.7 Compliance and Auditing .....	27
6.3.8 Development over Time .....	28
6.3.9 Orphan and Legacy Product .....	29
6.4 Preferred Organisational Model .....	29



6.4.1	<i>Overview of Proposed Structure</i> .....	29
6.4.2	<i>Product Stewardship Organisation (PSO)</i> .....	30
6.4.3	<i>Governance Board</i> .....	31
6.4.4	<i>Advisory Board</i> .....	33
6.4.5	<i>Programme Manager</i> .....	34
6.4.6	<i>Service Providers</i> .....	35
6.4.7	<i>Proposed Pathway to Establish a PSO</i> .....	35
6.5	<i>Programme Manager Specifications (Programme Delivery)</i> .....	37
6.5.1	<i>Identifying Obligated Parties</i> .....	37
6.5.2	<i>Data Management</i> .....	38
6.5.3	<i>Accrediting and/or Contracting Service Providers</i> .....	38
6.5.4	<i>Auditing of Accredited/Contracted Service Providers</i> .....	39
6.5.5	<i>Billing and Payments</i> .....	39
6.5.6	<i>Education and Communication</i> .....	40
6.5.7	<i>Research &amp; Development</i> .....	41
6.5.8	<i>Reporting &amp; Secretariat</i> .....	41
6.6	<i>Budgets and Financial Flows</i> .....	42
6.6.1	<i>Total Scheme Costs</i> .....	42
6.6.2	<i>Breakdown of Total Scheme Costs</i> .....	44
6.7	<i>Regulatory and Legislative Requirements</i> .....	45
6.7.1	<i>Regulations Under the WMA</i> .....	45
6.7.2	<i>Commerce Commission Guidelines</i> .....	46
6.7.3	<i>Hazardous Substances and Dangerous Goods Regulations</i> .....	47
6.7.4	<i>Other Supporting Actions</i> .....	47
6.8	<i>Key Interactions</i> .....	47
6.8.1	<i>Interactions with the Ministry for the Environment</i> .....	47
6.8.2	<i>Interactions with Customs</i> .....	48
6.8.3	<i>Interactions with New Zealand Transport Agency</i> .....	48
6.8.4	<i>Interactions with Key Stakeholders</i> .....	48
6.8.5	<i>Interactions with Other Schemes</i> .....	48
6.9	<i>Caveats</i> .....	49
7.0	<b>Timelines and Implementation</b> .....	51

<b>8.0</b>	<b>Summary and Conclusions .....</b>	<b>53</b>
8.1	Conclusions .....	53
8.2	Next Steps .....	53
<b>APPENDICES</b>	<b>.....</b>	<b>55</b>
A.1.0	General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020 .....	56
A.2.0	Stakeholder Consultation Information .....	60
A.3.0	Stakeholder Meeting Slide Deck.....	79
A.4.0	Stakeholder Consultation Q&A .....	96
A.5.0	AA Member Survey.....	101
A.6.0	Stakeholder Submissions on Proposed Scheme.....	104
A.7.0	Governance Options .....	109
A.8.0	Import/Export of Large Batteries .....	113
A.9.0	Product Stewardship Scheme Development Process .....	120
A.10.0	Transition Costs .....	122
A.11.0	Guidelines on the Safe Handling, Transportation Collection, and Storage of Large Used Batteries .....	123
A.12.0	B.I.G. Members (as at April 2021) .....	124

## List of Tables, Figures and Boxes

---

Figure E. 1: Overview of Proposed Scheme Design .....	iii
Table 1: Project Plan Activities and Deliverables for Milestone Three .....	5
Table 2: Stakeholder Consultation Timetable .....	9
Figure 1: Overview of Proposed Scheme Design .....	12
Figure 2: Overview of Proposed Structure .....	30
Figure 3: Estimated Total Scheme Costs Per Annum by Scenario .....	42
Table 3: Estimated Total Scheme Costs Per Annum by Scenario .....	43
Table 4: Summary of Base Scenario Scheme Costs .....	44
Table 5: Battery Classifications and Related Basil Permits (Lead Acid Batteries Excluded) .....	114
Table 6 New Zealand Battery Import Licenses Issued (as of March 2021) .....	115
Table 7 New Zealand Export Licenses Issued (as of March 2021) .....	115
Figure 4 Dangerous Goods Regulatory Systems Map Diagram (source: Ministry of Transport, 2020) .....	117



# Glossary

---

<b>Advanced recycling fee / Advance disposal fee</b>	A charge levied on products (usually when they are placed on the market) that covers the cost of end-of-life management including recycling/disposal. The charge can be applied directly to a product at the point of sale or can be calculated based on product sold and charged back to the producer/importer.
<b>Battery upgrader</b>	Term used in this document to refer to organisations that repair/refurbish batteries, modify or aggregate them for second-life applications or similar.
<b>EECA</b>	Energy Efficiency and Conservation Authority
<b>End-of-life</b>	This is when a battery has no further use as a battery and is then recycled or otherwise disposed of.
<b>ELB</b>	End of life battery
<b>ENA</b>	Electricity Networks Association
<b>End of use</b>	This term refers to where a battery comes to the end of the use for which it was first intended. For example, a battery may be used initially in a vehicle but then be taken out of that vehicle and find further life either in another vehicle or in a different application such as stationary storage.
<b>ICNZ</b>	Insurance Council of New Zealand
<b>IT</b>	Information technology
<b>NZTA</b>	New Zealand Transport Agency
<b>MTA</b>	Motor Trade Association
<b>OEM</b>	Original Equipment Manufacturer
<b>PSO</b>	Product Stewardship Organisation. This is not a legally defined term under the WMA but is commonly used to refer to an organisation carrying out duties associated with the administration of the scheme. A scheme may have more than one organisation responsible for its operation. For

	example, there may be one organisation that carries legal responsibility for the scheme (including governance), and other that carries out day to day operations.
<b>Product Stewardship Guidelines</b>	The General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020. Refer: <a href="https://gazette.govt.nz/notice/id/2020-go3342">https://gazette.govt.nz/notice/id/2020-go3342</a>
<b>Programme manager</b>	An entity appointed/contracted by the PSO to carry out the day-to-day operations of the scheme.
<b>Recycling</b>	‘Recyclable resource recovery’ is when materials are processed to obtain the same (high grade) <i>or</i> lower grade quality. The first option is a value optimisation approach consistent with the principles of circular economy, and the second, commonly known as ‘recycling’, is in fact ‘downcycling’ - where the value of materials deteriorates with each round of recycling. Recycling is at the low end of the ‘waste hierarchy’ whereas reuse of entire products, ideally with high value material recovery at the end, is a more ‘circular’ solution.
<b>Repurposed / Second-life</b>	Repurposing batteries simply means reusing them in another application, giving them a ‘second-life’
<b>Remanufacture / Refurbishment</b>	Battery remanufacture, also known as ‘refurbishment’, involves rebalancing or replacing cells or modules, swapping out damaged cells to extend the life of the battery
<b>Scheme Manager</b>	A legally defined term under the WMA. A scheme manager is defined as “the contact person for an accredited scheme”. The scheme manager is the entity with legal responsibilities for the scheme under the WMA.
<b>SOH</b>	State of Health. A measure of the remaining capacity of a battery. Usually measured as a percentage (e.g. 80% SOH). This is how much of its originally specified capacity it retains.
<b>VINZ</b>	Vehicle Inspection New Zealand
<b>VTNZ</b>	Vehicle Testing New Zealand
<b>WMA</b>	Waste Minimisation Act 2008



# 1.0 Introduction

---

## 1.1 Product Stewardship Scheme Development

This document puts forward a proposal for a ‘circular’ product stewardship scheme for large batteries. The New Zealand Battery Stewardship Research project has worked to identify the most appropriate integrated solution for New Zealand, for our current state of play and different future scenarios that will support a circular economy (taking into account changing battery chemistries, volumes, new recycling technologies and other disruptive technologies such as hydrogen). The context and scope for this project is provided in the “Vector New Energy Futures Paper – Batteries and the Circular Economy”, and its “Technical Addendum”. This Paper was used as a reference point throughout this project to ensure the proposed scheme acknowledges and responds to the environmental, societal (including Māori), cultural and circular economy context for Aotearoa.

There are three key parts to the proposed product stewardship development project:

1. Research into the value chain for large batteries to understand key steps and interactions, chain of custody, costs, potential for recovery charges, issues and risks including health and safety requirements at each stage, consumer response, linkages and expected changes over time;
2. Where possible, trialling and testing of collection and processing through practical efforts to recycle current large battery stockpiles. The learnings from these processes will feedback into the value chain research (NB: *The costs and deliverables of this project element do not form part of deliverables contracted to the Ministry for the Environment*); and
3. Development of a ‘co-designed’ product stewardship scheme that has industry support and meets the requirements of the Waste Minimisation Act (WMA) 2008 and the Ministry for the Environment’s proposed Product Stewardship Guidelines. The scheme will provide flexibility (with pathways that can adapt as the sector develops) and align where appropriate with other product stewardship schemes including portable batteries.

The proposed scheme design set out in this document makes recommendations on the following:

- Scope of the scheme
- Overall scheme structure (‘voluntary’, ‘regulatory’, ‘co-design’) and design including:
  - Preferred organisational model (Governance, ownership, compliance, regional variations, auditing, etc.)
  - Programme manager specifications (programme delivery)
  - Budgets and financial flows
  - Regulatory requirements
  - Key roles and interactions



- Timelines and implementation

The scope does not cover procedures and processes for the administration of the scheme, or detail of any standards, performance measurements, targets, or reporting. It is expected that these would be developed by the implementing organisation once the scheme is formally approved. How the current project fits into the overall product stewardship scheme development process is outlined in Appendix A.9.0.

## 1.2 Milestone Three Report

This report presents the outcomes for Activities 1A, 2A, 3A, and 4 of Milestone Three. The Activities and Deliverables for Milestone Three as detailed in the Project Plan are shown in the table below:

**Table 1: Project Plan Activities and Deliverables for Milestone Three**

Activity	Deliverable
1A. Identify import and export barriers 1B. Analyse regulatory and/or legislative gaps and make recommendations with respect to import and export of large batteries and their classification 1C. Seek Ministry review and approval before publication if report includes references to the Ministry's priority work programme	1. Report on import and export barriers. This report will include: 1A. Analysis of import and export barriers 1B. Analysis of regulatory and/or legislative gaps with respect to import and export of large batteries and their classification 1C. Provide a copy of the report to the Ministry for review and approval of the references before publication
2. Conduct at least 2 workshops to develop scheme design	2. Summary report on workshop outcomes and participant feedback

3. Conduct stakeholder engagement through at least 10 meetings/conference calls of the B.I.G. stakeholder groups (including governance and core delivery groups)	3. Meeting minutes and/or presentation slides
4A. Identify key design elements of a product stewardship scheme for large batteries  4B. Seek Ministry review and approval before publication if report includes references to the Ministry's priority work programme	4A. Research report identifying key design elements of a product stewardship scheme for large batteries.  4B. Provide a copy of the report to the Ministry for review and approval of the references before publication.
5. Develop a design for a product stewardship scheme for large lithium batteries	5. Detailed report on the proposed design of a product stewardship scheme for large lithium batteries. It will include: <ul style="list-style-type: none"> <li>i. Scope of the scheme</li> <li>ii. Overall scheme structure ('voluntary' 'regulatory', 'co-design') and design including:</li> <li>iii. Preferred organisational model (Governance, ownership, compliance, regional variations, auditing etc.)</li> <li>iv. Programme manager specifications (programme delivery)</li> <li>v. Budgets and financial flows</li> <li>vi. Regulatory requirements</li> <li>vii. Key roles and interactions</li> <li>viii. Timelines and implementation</li> </ul>
6. Milestone 3 Governance Group Meeting and sign-off of milestone deliverables	6. Governance Group minutes including minuted sign-off of milestone deliverables

7. Create clear, practical guidance document for the sector on the safe handling, storage, and transport of large batteries including lithium-ion batteries.	7. Copy of the guidance document for safe handling, storage and transport of large batteries including lithium-ion batteries
8. Submitting Ministry reporting documents, ensure Ministry sign-off prior to publication	8. Ministry documentation: <ul style="list-style-type: none"> <li>i. Milestone report</li> <li>ii. Milestone claim form</li> <li>iii. Summary of Expenses</li> <li>iv. Copy of actual Invoice</li> <li>v. Tax invoicing the Ministry</li> </ul>

In broad terms, Milestone Three builds on the base of information established in Milestones One and Two. Through substantial stakeholder engagement it has further refined and developed the broad approaches outlined in Milestone 2 to generate a proposed scheme design.

## 2.0 Milestone Three Methodology

The core of the Milestone Three methodology was stakeholder consultation. The research undertaken for Milestones One and Two was used to develop a draft scheme design. This design was then written up in a summary format (refer Appendix A.2.0) and reviewed and approved by the Governance Group before being made available for consultation.

Further detail on the stakeholder consultation is presented in section 4.0.

Feedback from the consultation process was reviewed and taken into account in further amending the draft scheme design. The stakeholder feedback received is presented in Appendix A.6.0

## 3.0 Import/Export Barriers

### 3.1 Introduction

Existing international and national guidelines can restrict the importing/exporting of (waste) batteries. Depending on the battery's lifecycle stage, chemistry, origin, and

destiny and mode of transportation, it might, or might not, be classified as Dangerous Goods or hazardous waste.

### 3.2 Dangerous Goods

Dangerous Goods are substances or articles with hazardous properties which, if not properly controlled during transport, present potential hazards to health, safety and the natural or built environment and anything in it. Within international frameworks for managing hazardous substances, the term 'Dangerous Goods' refers to items that are potentially dangerous specifically during transportation and this term is used in New Zealand's transport legislation.

International and associated domestic regulatory frameworks have been established to ensure Dangerous Goods are transported safely and effectively. These are made up of:

- The overarching international framework of the United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (UN Model Regulations), under which dangerous goods are classified and regulated at the highest level;
- International frameworks referencing the UN Model Regulations, regulating transport of dangerous goods in the aviation and maritime sectors; and
- Domestic transport frameworks comprising legislation covering **air, sea, land, and rail transport** — these include Acts, dedicated rules containing much of the detail for regulating dangerous goods, and regulations which include offences and penalties.

### 3.3 Batteries as Waste

The overarching international legislation for transboundary movements of (battery) waste, the Basel Convention, does not have specific classifications for lithium-ion, nor for specific sizes of, batteries. In New Zealand, the Basel Convention is enacted through the "Imports and Exports (restrictions) Prohibition Order (No 2) 2004, which outlines that, amongst other requirements, batteries can only be exported if they cannot be processed onshore.

Implementation of this Order is through permits issued by the Environmental Protection Authority, which references the Basel Convention's appendices for the classification of items. If batteries are exported for reuse (i.e., they can still function as a battery), they might not be considered waste (and not require a permit) depending on the receiving countries' rules.

### 3.4 Import/Export Regulations Depend on Mode of Transport

However, when transporting batteries to and from New Zealand, specific rules apply depending on the mode of transportation. Strict guidelines are applied by airlines, due to the known risks and potentially catastrophic results of battery fires. Because of that,

and because of the size of batteries discussed in this document, the vast majority of any import and export of large batteries is likely to occur through maritime transport.

Refer to Appendix A.8.0 for discussion of these regulations in more detail. For rules and regulations regarding the transport, storage, and handling of batteries within New Zealand, please also consult the B.I.G. safety and logistics guidelines<sup>2</sup>.

## 4.0 Stakeholder Consultation

---

A programme of stakeholder consultation was undertaken to input into the proposed scheme design.

The following workshops were held which inputted into the development of a draft scheme design for the purposes of stakeholder consultation:

- Battery User Group Workshop: 20 November 2020. This was reported on during Milestone Two. Please refer to the Milestone Two report.
- Governance Group Meeting: 18 February 2021. Refer to the Governance Group meeting minutes.

A draft scheme design was developed and presented as part of a package of stakeholder information. A copy of the stakeholder consultation information is provided in Appendix A.2.0. This information was made available via the B.I.G. website (<https://big.org.nz/>) as well as on social media and being e-mailed to all 174 B.I.G. members.

The consultation consisted of a series of in-person meetings, presentations, and webinars. Each of these interactions was targeted at specific stakeholder groups, to enable the presentation of tailored information and focused discussion. Below is a copy of the consultation timetable.

**Table 2: Stakeholder Consultation Timetable**

Date	Organisation (s)	Approach
Wed 10 March 2021	VIA	In-person presentation
Mon 15th March 2021	B.I.G. Safety & Logistics Group	Webinar
Mon 15th March 2021	B.I.G. Battery User Group	Webinar

---

<sup>2</sup> B.I.G. Safety and Logistics Working Group, 2021, Guidelines on the Safe Handling, Transportation, Collection, and Storage of Large Used Batteries, a Eunomia Research & Consulting NZ report prepared by Hannah Blumhardt

<b>Mon 15th March 2021</b>	B.I.G. Battery Innovation Hub	Webinar
<b>Weds 17th March 2021</b>	All other B.I.G. Stakeholders, Sustainable Business Council, Sustainable Business Network	Webinar
<b>Wed 17 March 2021</b>	MIA	In-person presentation
<b>Thurs 18th March 2021</b>	WasteMINZ members	Webinar
<b>Fri 26 March 10 2021</b>	ENA, VTNZ, MTA, VINZ, ICNZ, NZTA	Webinar
<b>Friday 26 March 2021</b>	MIA	Video conference

A copy of the generic slide deck used for the stakeholder engagement is provided in Appendix A.3.0

A record of the questions and responses during the webinars and discussions is provided in Appendix A.4.0

In addition, a number of informal phone calls and discussions were held with a range of stakeholders to discuss issues in more detail. This included discussions with MIA, VIA, Zero Waste Network, and Auckland Council.

A survey of AA members was also conducted during Milestone Three that received 1,415 responses in relation to end of life EV batteries. Refer to A.5.0 for details.

During Milestone Three there have been weekly Core Delivery Team meetings as well as two Governance Group meetings. The design of the scheme has been a key focus at these meetings.

## 4.1 Media Engagement for Milestone Three

As part of the overall stakeholder engagement during Milestone Three, there were a number of engagements with the media. While these were mostly unsolicited, the engagement was constructive and enabled the B.I.G. to present positive stories about the work being undertaken. The media engagement included:

- An article on the Sustainable Business network website.  
<https://sustainable.org.nz/sustainable-business-news/have-your-say-on-the-future-of-large-batteries-in-nz/>

- An article on EVs in the March 13-19, 2021 issue of the Listener that explained the role of B.I.G. in developing a product stewardship scheme for larger batteries and included interviews with several B.I.G. members.
- An article on Newsroom (<https://www.newsroom.co.nz/evs-dont-mistake-a-speed-bump-for-a-roadblock>) written by B.I.G. member Buddhika Rajapakse, which was in response to a previous Newsroom article of 5 March 2021 that addressed concerns around Electric Vehicle batteries but which did not mention the work of B.I.G. (<https://www.newsroom.co.nz/ideasroom/the-problem-with-switching-to-evs>).
- An article in the Spinoff which mentioned the work of B.I.G. in developing a product stewardship scheme (<https://thespinoff.co.nz/business/04-03-2021/new-zealands-ev-revolution-may-not-come-easy/>)
- Article in Stuff on B.I.G. <https://www.stuff.co.nz/motoring/evs/124607176/big-plans-for-old-ev-batteries>

This media coverage meant that stakeholders who may not have been aware of the proposed product stewardship scheme were notified of it and able to read the proposed scheme on the B.I.G. website.

Other positive publicity for B.I.G. included positive mention at Drive Electric's Annual Members Event. This event took place on Tuesday 6th April 2021 in Parliament's Grand Hall, Wellington.

## 5.0 Key Product Stewardship Scheme Elements

---

The requirements that have informed this product stewardship scheme design include the following:

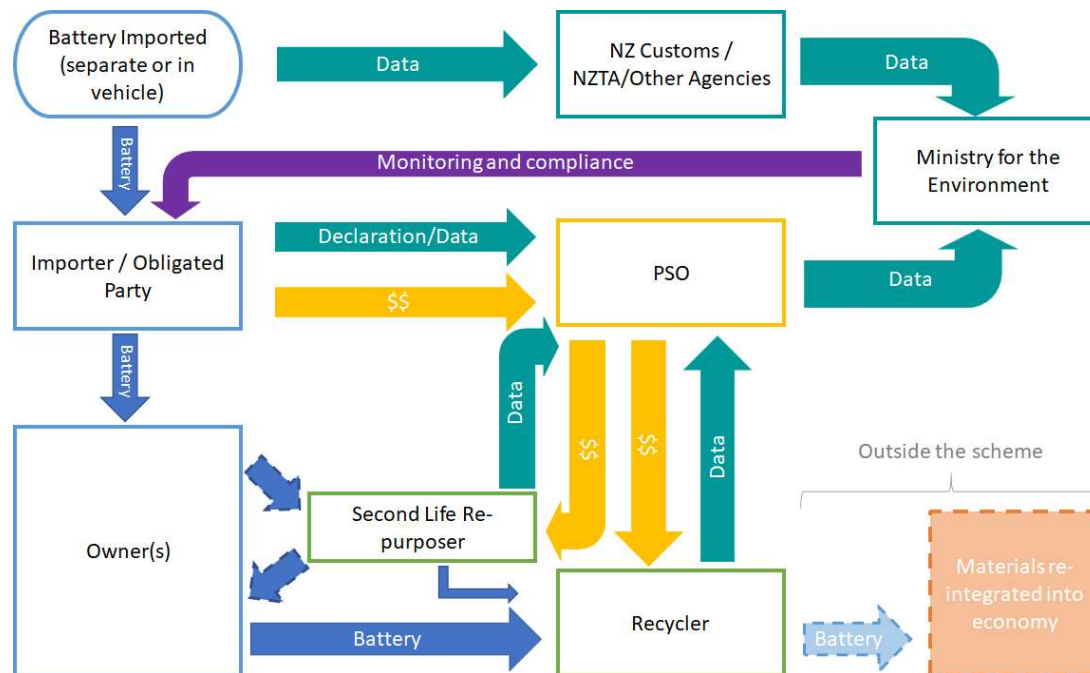
- Complies with the requirements of the Waste Minimisation Act
- Complies with the Ministry for the Environment's (MfE's) Product Stewardship Scheme Guidelines
- Delivers a circular product stewardship scheme that will help deliver a circular economy for large batteries
- Supports and aligns with the needs of the range of organisations involved in the battery and related industries
- Is equitable and comprehensive, and avoids loopholes and free riders
- Is simple and easy to understand, convenient, and accessible for consumers
- Is able to evolve over time as the needs of the sector expand and change, and as new technologies and processes come into play
- Is well governed, managed, and provides transparency and accountability
- Provides for input from all stakeholders
- Is affordable and efficient and minimises administration costs.

## 6.0 Proposed Scheme Design

### 6.1 Overview

The diagram below provides a high-level overview of the proposed scheme design.

**Figure 1: Overview of Proposed Scheme Design**



The proposed scheme is as follows:

1. When a large battery is imported into New Zealand (either as a battery or in a vehicle or other machinery), or manufactured in New Zealand, information on the obligated item is recorded by Customs and potentially other agencies, such as the New Zealand Transport Agency (NZTA).
2. Obligated parties importing the batteries provide information the items they are importing to the Product Stewardship Organisation (PSO). *Ideally the provision of this information is required under regulation.*
3. The PSO reviews and records the information along with that from other obligated parties. The PSO calculates the financial obligation of each party (based on the total costs of operating the scheme for that period, divided by the proportion of the numbers of batteries each obligated party imports in that period). The PSO then bills each obligated party (e.g. monthly).
4. The PSO provides regular information on the batteries imported to the Ministry for the Environment which then periodically evaluates this information against data from Customs or other agencies and checks obligated parties' declarations.



5. The importers/obligated parties sell the products, which then move through the value chain (noting there may be multiple owners) as normal, until they reach end-of-use or end-of-life.
6. At end-of-use (where they may be, for example, removed from a vehicle and repurposed in another application such as in stationary storage), the accredited 'second-life re-purposer' records details about the battery and provides this to the PSO. If applicable, they may also make a claim for payments for the handling and upgrading of the battery.
7. At end-of-use (where there is no further economic value) an accredited recycler will accept the battery at no cost to the owner. The recycler records details about the battery and provides these to the PSO. The PSO then makes appropriate payments to the recycler to cover the net costs of recycling.

## 6.2 Scope of the scheme

### 6.2.1 Definitions

The following definition of a "large battery" under the scheme is proposed:

"Large batteries" will have a **multi-level** definition.

1. The first definition level will be by *use*
2. The second definition level will be by *weight*
3. The third level definition will be by *handling*.

For a battery to be considered a 'large battery' under the scheme, it will need to pass at least one of the levels of definition. Under this approach, all batteries used in stationary storage or for motive power for specified vehicles will be part of the scheme. If they do not fall into one of the specified uses, then they will be considered a large battery if they are over the threshold weight or meet the handling requirements.

It is proposed that the definition used for this scheme also be used to delineate the difference between large and small batteries for the e-waste product stewardship scheme. Where there is a lack of clarity or dispute over whether a particular battery falls under the definition or not, this will be adjudicated by the Governance Board (refer section 6.4.3.1).

#### 6.2.1.1 Definition by Use

The following uses are proposed initially for the scheme:

- Stationary energy storage:
  - Residential stationary storage
  - Commercial stationary storage
  - Utility scale stationary storage
- Batteries used to supply motive power to vehicles, nominally of the following types:

- Motorcycles
- Cars
- Vans and Utility vehicles
- Recreational vehicles
- Trucks
- Buses
- Earthmoving and construction vehicles
- Forklifts
- Ferries and powered watercraft
- Aircraft.<sup>3</sup>

The precise list and definitions for each use will be finalised prior to the application for accreditation in consultation with key stakeholders. It is also proposed that the list be reviewed and updated regularly to take account of new technologies and clarify definition issues around the boundaries.

### Modules and Cells

One of the issues that a definition has to address is the importation of modules and or cells which are then used in large battery applications – either as replacements for faulty modules or cells or made up into packs for use in stationary storage or vehicles. The definition by use would potentially capture these. If they are a type of module or cell designed for use as part of larger packs, then this would be deemed to qualify as a large battery on the basis of the first level definition.

#### 6.2.1.2 Definition by Weight

It is understood that the battery weight will be information available for all obligated battery types as part of the product information available to importers or from OEMs.

For the purposes of the definition, the weight will include the total weight of all modules that make up a battery pack. Any battery management systems (BMS), thermal management systems and casing is excluded, except where these are not readily separated from the modules or cells.<sup>4</sup>

It is proposed to set the weight at a level that will not automatically include batteries from uses for which the scheme is not designed (e.g. scooters, e-bikes). Nominally, a weight of **5kg** would exclude most of these types of batteries. The threshold weight will ultimately be determined through further consultation with stakeholders prior to application for accreditation.

---

<sup>3</sup> The proposed definitions would exclude e-bike batteries, e-scooters, electric skateboards, and Segway's, but not necessarily golf carts or mobility scooters if these use battery types other than lead acid.

<sup>4</sup> Additional research may be required to understand how this definition relates to current and future battery designs, and this definition may be refined further.

### 6.2.1.3 Definition by Handling

The final definition will be by handling. The key test here will be whether the battery is able to be safely transported to and deposited in a drop-off facility for small batteries. For this test to be able to be applied, the facilities available for drop-off of small batteries, and their acceptance criteria will need to be known. Until the scheme design for e-waste (including small batteries) has been finalised, this definition will not be able to be applied.

### 6.2.1.4 Chemistries Included

For the purposes of the scheme all chemistries will be assumed included, unless specifically exempted. Battery chemistries are continually evolving, so a 'positive' definition that attempts to define what is included risks becoming out of date quickly<sup>5</sup>. For clarity however, the following broad battery technologies are assumed to be included:

- Lithium based chemistries
- Nickel Metal Hydride
- Fuel cell technologies.

### 6.2.1.5 Exemptions

Criteria for exemptions will need to be determined, but these may include where there is no market failure at end-of-life, or where the particular chemistry is not used in large batteries. Exemptions can be made or removed during the operation of the scheme. Decisions on exemptions would be made by the Governance Board. Proposed initial exemptions include:

- **Lead acid.** These are exempted at this stage because it is considered that there is no market failure in providing an end-of-life solution.<sup>6</sup> However, it is noted that lead acid batteries are a priority product and will therefore be included in the e-waste product stewardship scheme.
- **Flow batteries.** These batteries have an extremely long lifespan and can be refurbished by replacing fluids. Further research is recommended to determine whether end-of-life flow battery fluids are an issue, and if so, whether inclusion in a product stewardship scheme would be an appropriate tool for management.
- **Nickel Cadmium.** This chemistry is not currently used for large batteries.

---

<sup>5</sup> Refer the Milestone Two report for further discussion

<sup>6</sup> This situation will need to be evaluated on an ongoing basis and may change. For example if a scrappage scheme for older combustion engine vehicles is implemented, this could accelerate the removal of lead acid batteries, and this may require management

## 6.2.2 Obligated Parties

Any person or entity importing a battery into New Zealand or manufacturing a battery in New Zealand that meets the definition of a large battery (as presented above) will be obligated under the scheme and would have to submit a declaration to the PSO and pay the applicable fee.

### 6.2.2.1 Where the Importer is Not the Owner

It is proposed that where an importer is not the owner of the battery (or vehicle with an obligated battery), but is acting as an agent for the owner, that the *importer* is the obligated party. In this instance it will be incumbent on the importer to have knowledge of the goods being imported and to be able to make the appropriate declaration to the PSO. Because the schedule of fees will be made available in advance (and may also be available via an online database of all battery models – see 6.5.2), the advance disposal fee liable on the battery will be able to be calculated and simply on-charged to the owner as part of the cost of the importation service.

### 6.2.2.2 Importing End of Life Batteries

Batteries may be brought into New Zealand at the end of their life. There are two main circumstances where this could occur:

- they are removed from maritime vessels or aircraft during maintenance or refurbishment
- they are being imported as an end-of-life product (for example from the Pacific Islands).

It is proposed that the organisations removing the batteries from the vessels or importing the batteries as a waste product be identified as obligated parties and be required to register with the scheme.

However, there may be issues with administering and auditing the obligation under current provisions. Specifically:

- It is not clear if the obligation to pay the advanced disposal fee would be able to be enforced under the current wording of S22(1)(a) where the batteries are not being placed on the market following importation (refer to section 6.7.1 for further discussion).
- Waste removed from vessels or aircraft does not (to our knowledge) require an import permit and is not specifically tracked, and hence (under current processes) the obligation may not be able to be audited to ensure compliance.

Further work on this element will be required to identify a practical solution.

### 6.2.2.3 Scheme Registration

It is proposed that obligated parties be required to register with the PSO. Registration with the PSO would be part of fulfilling their requirements under regulations made in accordance with S22(1)(a) of the WMA.

Registration would entail providing the PSO with key organisational details. This would be expected to include, but not be limited to the following:

- Organisation name
- Organisation type(s) (e.g. importer, OEM)
- Brief description of activities undertaken in relation to large batteries
- Contact names
- Contact details
- New Zealand Company registration ID

Registered parties will be expected to provide declarations at the stipulated intervals on the quantity of batteries imported or manufactured in NZ (refer 6.3.3.1), and would be kept informed of any changes to the scheme including obligations, and levels of fees.

### Thresholds for Scheme Registration

Private individuals who manufacture or import large batteries, or vehicles/equipment containing large batteries, would be exempt from registering with the scheme if:

1. The batteries/vehicle/equipment are declared to be for personal use; and
2. No more than the equivalent of one vehicle/vehicle battery/item of equipment, or household lot of stationary storage batteries are imported/manufactured in a 12-month period.

Note: it is proposed that private individuals would *still be obligated to pay the advance disposal fee*.<sup>7</sup> However, there is some uncertainty whether this would be enforceable under current legislation. Refer to section 6.7.1.

## 6.3 Overall Scheme Structure

### 6.3.1 Co-Design

The proposed product stewardship scheme for large batteries is a ‘co-design’ scheme. It has been designed by industry and key stakeholders in line with the requirements of Waste Minimisation Act 2008 (WMA) and the “General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020” (the Product Stewardship Guidelines) and will require regulation under the WMA to enable it.

---

<sup>7</sup> This could be enforced through either the importer being the obligated party, and them passing on the fee, or via Customs or NZTA checking that the battery has had the fee paid and informing the obligated party of the need to pay the fee before customs clearance/vehicle registration can be completed.

## 6.3.2 Funding the Scheme

### 6.3.2.1 Source of Funding

The full costs of operating the core scheme activities would be met by an advanced recycling fee and charged to obligated parties on the basis of product imported into New Zealand or manufactured in New Zealand and placed onto the market in New Zealand.

Other non-core costs may be met by other funding sources. For example, the PSO could offer professional training courses on a user-pays basis or seek to recoup costs of compliance from offenders where there has been a breach of standards set by the scheme. In addition, registered scheme participants and/or the PSO could seek funding from external sources for projects that would add value to the scheme (such as the development or deployment of new technology).

### 6.3.2.2 Basis of Fees

The rate of the advanced recycling fee would be on a cost per kg basis and would be reviewed annually. It is proposed that it be calculated as follows:

*The projected net costs of running the Product Stewardship Scheme in a given year divided by the projected total weight of batteries imported/manufactured and placed on the market in NZ in a given year.*

The use of projected costs and projected battery import/manufacture data will enable a *schedule of fees* to be produced which is then updated annually. This will give obligated parties the ability to calculate the level of their financial obligation each year and make appropriate provisions. It will also enable the schedule to be Gazetted by the Government if required.<sup>8</sup>

Because projections of both costs, and the quantities of batteries obligated under the scheme, are likely to vary from actual figures, there will usually be a deficit or surplus that will need to be carried forward from year to year, and which would impact the calculation of the next years fees. Unless debt financing is to be undertaken (a governance decision), an operating cashflow buffer will need to be maintained to cover variances between budgeted and actual income.

The per kg rate can be modulated by environmental criteria. This is discussed in the following section.

### 6.3.2.3 Modulation of Fees

Fees would be modulated in order to reward/encourage manufacturers for good environmental design.

---

<sup>8</sup> Recent advice from the Ministry for the Environment is that, even if a PSO is charging obligated parties directly, because the payment is mandated by regulation, the charges are considered a tax administered by a third party. This means that the fees would need to be set by regulation and updated regularly.

The Product Stewardship Guidelines<sup>9</sup> (S4(1)) requires that:

*“Full net costs for stewardship of priority products at end-of-life met by product or producer fees proportional to the producer’s market share and **ease of reuse or recyclability** of their product.”*

In the Milestone Two report it was found that there are very limited accurate, reliable, and readily accessible measures of a large battery’s ease of reuse or recyclability on which fee modulation could be based. The fees charged to obligated parties would therefore initially be modulated according to the following criteria:

- Broad battery chemistry type (e.g. Li-ion, solid state, nickel-metal hydride / NiMH). This will reflect costs and issues associated with handling and recovery.
- Warranted battery life. This is a proxy for expected battery life. A longer life battery will defer costs associated with its recovery.

The basis and level of modulation would be determined by the PSO annually and publicised to registered participants through the schedule of fees. The PSO would be responsible for reviewing the fee modulation annually, determining its appropriateness and effectiveness, and making any changes to the basis of calculation.

Other bases for fee modulation may be undertaken on a case-by-case basis. For example, if a manufacturer or importer presents verifiable evidence that their product has a clear, added value, reuse, or recycling pathway, the PSO could calculate and offer a fee modulation for that product. This could include OEM or importer’s programmes to take product back into their internal value chains.

Other fee modulations may be added over time as the basis for modulating the fees is established. This may include for example:

- Modulating the fee on the basis of a product meeting recognised international standards in relation to environmental criteria.
- Modulating the fee on the basis of verified information provided by a digital battery passport (for example on material provenance, design for second-life).

#### 6.3.2.4 Export of Batteries

Where batteries are exported as products (i.e. not end-of-life) fees paid in relation to their import or manufacture would be refunded. The proposed process is that the claim would be made upon presentation of proof of export.

If batteries are manufactured in New Zealand or imported and then exported without being placed on sale or used in New Zealand, then they would not be obligated under

---

<sup>9</sup>Ministry for the Environment: General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020

the scheme. This may be applicable, for example, where a company import batteries for installation or sale in the Pacific Islands.<sup>10</sup>

### 6.3.3 Data Gathering

#### 6.3.3.1 Data Gathering by PSO

##### Declarations

Obligated parties that have registered with the PSO will be required to provide data to the PSO on the quantity of large batteries they imported/placed on the market in the given time period.<sup>11</sup> It is the strong preference that, as part of this proposed scheme design, **provision of data by obligated parties to the PSO be mandatory**.

The precise data that is sought from obligated parties is yet to be formally determined. Initial work on this aspect indicates that the information sought is likely to include the following:

- Name of obligated party/importer
- Unique battery ID<sup>12</sup>
- Vehicle or system brand
- Battery brand
- Model name/number
- Chemistry
- Weight
- Capacity
- Dimensions
- Date of import
- Warranty period
- State of health (SOH)
- Other technical and safety specifications (e.g. voltage, safe temperature range, current, etc.)

---

<sup>10</sup> It should be noted that at the present time the operation of the scheme does not extend to the Pacific Islands. Extension of the scheme to the Pacific Islands would be a topic for negotiation between the New Zealand Government, the PSO, and the Governments of any Island nations to which it was proposed the scheme would apply.

<sup>11</sup> At present it is not clear if the provision of data by registered parties would be a legal requirement under S22(1)(a) of the WMA (in other words if they have to provide data to be considered to be operating 'in accordance with' the scheme), or if further legal/regulatory provision will need to be made – refer section 6.7.

<sup>12</sup> If possible, this may extend to module ID



## Interval for Declarations

The time interval for making declarations is yet to be determined. The key factors to balance are to minimise administration for the obligated parties (which points to a longer time period), and to make it regular enough to ensure the information is current, and circumstances have not changed (which points to a shorter time period). A **reporting period** between 1 and 3 months is likely, with **1 month** as the default at this stage.

Even if no batteries have been imported in the period a nil declaration would be required from registered parties.

## Data Systems

Central to the design of the scheme is the concept of being able to track large batteries through their life cycle.

Through their Battery Innovation Hub working group, B.I.G. has been exploring the potential of a blockchain-based technology, produced by the company Everledger<sup>13</sup>. The technology promises to enable the following functions which would be highly relevant to the operation of the scheme:

- Track the provenance of materials used in the batteries
- Track individual battery packs through the value chain
- Track individual battery modules through the value chain
- Hold key metrics on each battery/module such as those noted under 6.3.3.1 above.
- May also track actions taken with the battery at key points where it interacts with the system such as any changes of modules/cells or other repair work or upgrading, damage etc.
- It promises to be able to manage financial interactions and billing
- It allows multiple users throughout the value chain to have different levels of access. This would enable it to be used by registered obligated parties, services providers, government agencies, as well as the PSO,

These features could enable it to be used as the primary platform to manage batteries under the scheme. The platform has been demonstrated to the Ministry for the Environment who, it is understood, are interested in the potential for application to a wider range of product stewardship schemes.

*It should be noted that, while Everledger is a potential platform of interest, no decisions have been made regarding its use, and a formal procurement process would need to be undertaken to find an appropriate IT systems supplier.*

---

<sup>13</sup> <https://www.everledger.io/>

### 6.3.3.2 Data Gathering by Government

Data on imported batteries collected by New Zealand Customs could be supplied to the Ministry for the Environment [for use in monitoring and compliance of WMA regulations such as 22\(1\)\(a\)](#).

An initial exploration of data requirements and issues was undertaken as part of Milestone Two. However, the exact data able to be accessed by the different agencies and the processes for gathering and supplying the data will need to be negotiated. It is expected that this work will be progressed (but may not be finalised) prior to the application for accreditation is submitted.

### 6.3.4 Targets and Reporting

The Product Stewardship Guidelines state the following in section 5(1)(c):

- i. All schemes will set and report annually to the Ministry for the Environment on targets that include as a minimum:*
  - a. significant, timely and continuous improvement in scheme performance;*
  - b. performance against best practice collection and recycling or treatment rates for the same product type in high-performing jurisdictions;*
  - c. a clear time-bound and measurable path to attain best practice;*
  - d. implementation phase-in to reflect availability of markets and infrastructure;*
  - e. new product and market development to accommodate collected materials;*
  - and*
  - f. measures for public awareness of scheme participant satisfaction and a record of response by the scheme to concerns raised.*
- ii. Targets will be reviewed and adjusted no less than every three years from the date of accreditation, taking into account changes in the market, natural events and technology.*

Most of these targets are administrative in focus and will be developed by the project team, in consultation with the MfE as part of the final scheme design and application for accreditation.

The key target of scheme performance, which is explored further in this document, and for which a metric is proposed, is target (b). “*performance against best practice collection and recycling or treatment rates for the same product type in high-performing jurisdictions;*”

A discussion of this is provided in Appendix A.7.3.

#### 6.3.4.1 Proposed Recycling and Reuse Metrics

**Recovery Metric.** Targets will be based on the annual quantity (tonnage) of large batteries recovered (recycled/reused under the scheme) versus the annual tonnage of large batteries dumped illegally or otherwise attempted to be disposed of outside of the scheme.

The key metric for the scheme relates to what happens at end-of-life. Data on illegal disposal (e.g. abandoned cars) is likely to be a reasonable proxy for how the scheme is impacting what happens at end-of-life. It should be noted however that abandoned car and illegal dumping data is currently gathered by most Territorial Authorities, but it is not (to our knowledge) collated nationally. Also, each Territorial Authority has different methods of collating and recording data, and to our knowledge, none separate out Electric Vehicles from other vehicles. Developing a reliable metric for illegally dumped vehicles and batteries would be necessary to enable this target calculation.<sup>14</sup>

It is also worth noting that if batteries are captured through illegal dumping clean up by Territorial Authorities these are likely to then be recycled through the correct channels and will appear in the data as such. The metric would therefore have to take proper account of this.

**Stockpile Metric.** In addition, a separate target is proposed for the proportion of batteries stockpiled versus the proportion recycled/reused under the scheme. Stockpiling is likely to occur at auto dismantlers and recycling points. While some of these locations where batteries accumulate will be accredited operators under the scheme, it can also be expected that some won't. Obtaining data from operators that are not part of the scheme could be problematic.

While a certain level of stockpiling is expected as part of the management of the flows of materials (consolidating loads for economic transport etc.), a stockpile metric would illuminate any changes to regular or expected patterns that could reflect issues with end of use/end-of-life markets. If these are not functioning effectively this could result in a stockpiling of batteries/end-of-life Electric Vehicles.

It is proposed that the targets consist of a single rate covering batteries both recycled and those given a second-life. Data would also report the split between recycling and second-life, but there would be no targets for the proportion of the split.

**Reuse Metric.** While second-life applications are desirable from a circular economy perspective, the level of economically and environmentally efficient second-life activity is unknown at this point, and may vary over time, by battery type, brand etc. A specific second-life target could be introduced in the future if this becomes clearer.<sup>15</sup>

---

<sup>14</sup> Ideally the metric would capture large batteries going through other routes such as landfill disposal. However, to our knowledge, large batteries (particularly lithium ion) are not accepted at any landfill, therefore the only way these would be disposed of is without the operator's knowledge, and hence we would not expect any data from this source.

<sup>15</sup> An example of a methodology for calculating circular economy impacts is the Ellen MacArthur Foundation's Material Circularity Indicator. [https://www.ellenmacarthurfoundation.org/assets/downloads/insight/Circularity-Indicators\\_Methodology\\_May2015.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/insight/Circularity-Indicators_Methodology_May2015.pdf). These types of metrics could be investigated for their applicability to the scheme.

**Targets Apply to the Whole Scheme.** It is proposed that the targets set under the scheme apply to the scheme as a whole initially, and there are no individual obligated party targets. The scheme as proposed makes no distinction between how end-of-life batteries from obligated parties are treated. If an obligated party wishes to take back its own product, the expectation would be that their product has the same targets applied as for the overall scheme.

### 6.3.5 Responsibility for Collection and Recovery

#### 6.3.5.1 Definition

Under the proposed scheme design, the PSO will have responsibility for ensuring appropriate collection and recovery of obligated products when they come to the end of use or end-of-life.

A large battery is not at its 'end-of-life or end of use' until a decision has been made that it is no longer wanted for the original purpose for which it was intended. Up until that time, the ownership remains with the person who has it in their control.

The Product Stewardship Organisation (PSO) becomes *responsible* for the management of the end-of-life battery (ELB) at the point that it is made available for collection within the programme structure.

The PSO is then *responsible for ensuring that this ELB is then collected and processed* according to the policies that govern the programme.

The *ownership* of the ELB may change as it passes through the value chain. The ownership of the ELB will be made explicit in any contracts or service level agreements of suppliers to the PSO.

#### 6.3.5.2 Functions

The key functions to deliver collection and recovery within the programme structure are expected to include:

- Collection/dropoff
- Battery assessment (of state of health, safety, state of charge, options for 2<sup>nd</sup> life or reuse, options for repair or refurbishment etc.)
- Decommissioning/dismantling
- Repair and refurbishment
- Second-life re-purposing/re-manufacture
- Transport and storage<sup>16</sup>
- Recycling
- Data management.

---

<sup>16</sup> This may include maintaining a rental fleet of fireproof containers for collecting/storing/transporting or large, used batteries – especially damaged ones.

### 6.3.5.3 Service Delivery Mechanisms

It is proposed that the functions involved in the collection and recovery of large batteries be undertaken through a range of mechanisms. The PSO will appoint a Programme Manager to carry out the necessary functions associated with operation of the scheme. It is proposed that the Programme Manager then determines the most appropriate way for each function to be delivered. This may include:

- Undertaking functions in-house
- Contracting external parties to undertake the functions
- Accrediting service providers to undertake the functions as part of the scheme
- Requiring/allowing obligated parties (i.e. importers/manufacturers) to take back and manage product in accordance with the provisions of the scheme.

Further discussion of these functions is provided in Section 6.5.3.

### 6.3.5.4 Product Take Back

Where an importer or manufacturer takes their own product back and reuses or recycles the product, it is expected that this would be characterised under the scheme as follows:

- Importers/manufacturers would be liable to pay the advanced recycling fee on all product imported/placed on the market in New Zealand. Their product would therefore be treated no differently to other products at the point of obligation.
- Importers/manufacturers taking their own product back would seek to become 'Accredited Service Providers' under the scheme. They would be required to meet the same standards for the recovery functions they undertake as any other service provider. This will provide some assurance that scheme outcomes are being upheld across all recovery scenarios.
- As an Accredited Service Provider, the importers/manufacturers would be eligible to make claims to receive payment for the relevant services they provide in taking back their product.

This would ensure that if a manufacturer's product is not in fact taken back, or for some reason they only partly fulfil their intended take back function, additional costs are not imposed on the scheme. It also guards against non-contribution to the scheme in the event that the importer/manufacturers exit the New Zealand market for any reason or ceases to provide the product takeback service.

### 6.3.5.5 Leased Product

Where a company offers products on a lease basis, which involves taking their product back at the end of use, the same provisions as above would apply. In other words, the importer/manufacturers would pay the advanced disposal fee the same as for any other obligated party and would then be able to apply for accreditation as a service provider to the scheme and claim back costs of collection and recovery as appropriate.

### 6.3.5.6 Geographic Coverage

The Programme Manager will be responsible for ensuring that in determining Accredited Service Providers, geographic coverage is sufficient such that there is “convenient collection of the priority product for household and business consumers at end-of-life, including rural populations” in accordance with the requirements of the product stewardship guidelines.

It is expected that there will need to be further clarification from the Ministry for the Environment around what constitutes “convenient collection” in this context. How this is defined will be an important factor in determining the level of service provision.

### 6.3.6 Standards and Accreditation

Parties that provide services to the scheme will be required to deliver those services to clear standards. This will be vital to ensuring the integrity and effectiveness of the scheme. Before the scheme is launched, the PSO will identify, develop, and publish appropriate standards that pertain to each step of the value chain. Areas where standards will need to be developed or identified include:

- Collection/drop-off locations
- Battery assessment
- Decommissioning/dismantling
- Repair and refurbishment
- Second-life re-purposing/re-manufacture
- Transport and storage
- Recycling
- Data management.

Where possible, existing standards will be referenced. Guidelines for the safe transport, handling and storage of large batteries have been developed as part of this project and are provided in A.11.0.

Standards may cover (but not be limited to):

- Customer service metrics
- Health and safety<sup>17</sup>
- Environmental standards
- Social procurement
- Employment relations
- Financial viability
- Communications and public relations

---

<sup>17</sup> For example, In the UK there has been some consideration of the level of safety skills required by different people in the process for EV batteries, for example: [https://faraday.ac.uk/wp-content/uploads/2019/11/Faraday\\_Insights\\_4.pdf](https://faraday.ac.uk/wp-content/uploads/2019/11/Faraday_Insights_4.pdf). These and other similar initiatives could be utilise to for the basis for appropriate standards and training.

- Reporting and transparency.

Any service provider accredited or contracted to the Scheme will be required to meet the appropriate standards in order to maintain their accreditation or contract and make claims for work undertaken in accordance with the scheme. Refer to 6.5.3 for further details.

Although the Scheme boundary is defined as ending once a product has been processed by an approved recycler, the service provider accreditation process affords potential for the scheme to have influence beyond this point. Specifically, as one of the required standards for accreditation, recyclers could be required to provide transparency around the markets that the recovered materials are supplied to, as well as how any disposed materials are handled.

### 6.3.7 Monitoring and Compliance

The scheme will have two distinct compliance functions:

- Ensuring obligated parties are compliant with the scheme
- Ensuring accredited/contracted parties delivering services on behalf of the scheme are operating to the expected standards.

#### 6.3.7.1 Obligated Party Compliance

It is expected that there will be two different sets of processes in respect to obligated party compliance:

**Checking Obligation.** Processes carried out by (or on behalf of) the PSO are: to identify obligated parties; inform them of their obligations and the steps required to meet them, and; follow up to check that compliance is occurring. Where non-compliance is found, there will be processes in place to provide the obligated parties opportunity to remedy the situation. This is a role that would be contracted to the Programme Manager to undertake. If there is ongoing non-compliance that constitutes a breach of the regulations, it is expected that this would be referred to the Ministry for the Environment for enforcement. Refer 6.5.1.1 for an overview of proposed compliance tasks.

**Auditing Declared Data.** Data supplied by obligated parties to the PSO will be made available to the Ministry for the Environment. It is proposed that the Ministry for the Environment would audit this data alongside data obtained from New Zealand Customs and other agencies, such as the New Zealand Transport Agency, that may be gathering relevant data (*It is noted that the Ministry for the Environment currently has ability to request New Zealand Customs to provide in relation to priority products (WMA section 24) data, and access to appropriate data from other agencies would need to be negotiated or require a change in statute*).

In order to be able to meaningfully use data from different sources for the purposes of auditing, it will need to be compatible in a number of ways. The main data fields that will need to be aligned are:

- Obligated party details
- Battery unique ID
- Date of import/manufacture in NZ

### 6.3.7.2 Accredited Operator Auditing

As is set out in 6.3.6 above, it will be important to have appropriate standards in place for service providers who are responsible for delivering services on behalf of the scheme. In order to ensure that these standards are being maintained, an audit programme is proposed. This would be one of the responsibilities of the Programme Manager. Potential methods for undertaking the audit programme are set out in section 6.5.4.

### 6.3.8 Development over Time

One important feature of the scheme is that it is designed to evolve over time in response to the needs of the sector. There are a number of dynamics which will inform this evolution:

- The number of end-of-life batteries is currently low but is expected to grow over time. Numbers will grow slowly initially because the end-of-life figures reflect historical use patterns, but the numbers are then expected to grow faster as more batteries move through their life-cycle;
- The numbers of large batteries entering use is expected to grow substantially, driven by increasing prevalence of electric vehicles and the wider use of batteries in stationary storage applications;
- There will be ongoing technological changes in the sector, including in battery technology, which could impact use cases, lifespan, ease of handling and transport, second-life applications, recyclability, and the value from recovered materials;
- Similarly, there could be new processes/technology to further enable second-life and the recycling of product, including changing economics of recovery;
- There may be new models of consumer use and service delivery which affect product design, ownership, and lifecycles.

These factors, and others, will change the requirements of large battery product stewardship, and the scheme will need to change and adapt over time to ensure that it is meeting the scheme objectives in the most efficient and effective manner.

There are a number of different scheme elements, as presented in this proposal, that are designed to enable the scheme to adapt over time. Some of these features are:

- **Advanced recycling fees based on the cost of the scheme operation.** This means that fees do not have to try and anticipate future costs and can adjust as the costs of running the scheme change. It also takes account of any legacy or orphan product.
- **Flexibility in service delivery.** The scheme is set up to allow a number of models of service delivery according to what is most appropriate. For example, initially, while ELB numbers are small, existing service providers could be accredited to



deliver the scheme functions. If/when numbers get to a requisite scale, then there may be economies of scale that come into play for the delivery of certain functions, (e.g. battery assessment centres, or logistics), and it may at that point make sense to issue a contract (or contracts) for delivery of these functions regionally or nationally.

- **Provision for product take-back and leasing.** Different ownership and service delivery models can be accommodated with the scheme framework. There is potential for these to further support circular economy outcomes.
- **Obligated parties provide data directly.** This allows for a range of different ways for product to enter New Zealand and be placed on the market, and will be flexible as large batteries find new applications

### 6.3.9 Orphan and Legacy Product

All end-of-life batteries will be managed through the scheme. Because the scheme levies fees based on market share of current product but pays for all batteries entering end-of-life, regardless of their provenance, the way the scheme is designed means there will be no legacy or 'orphan' product.

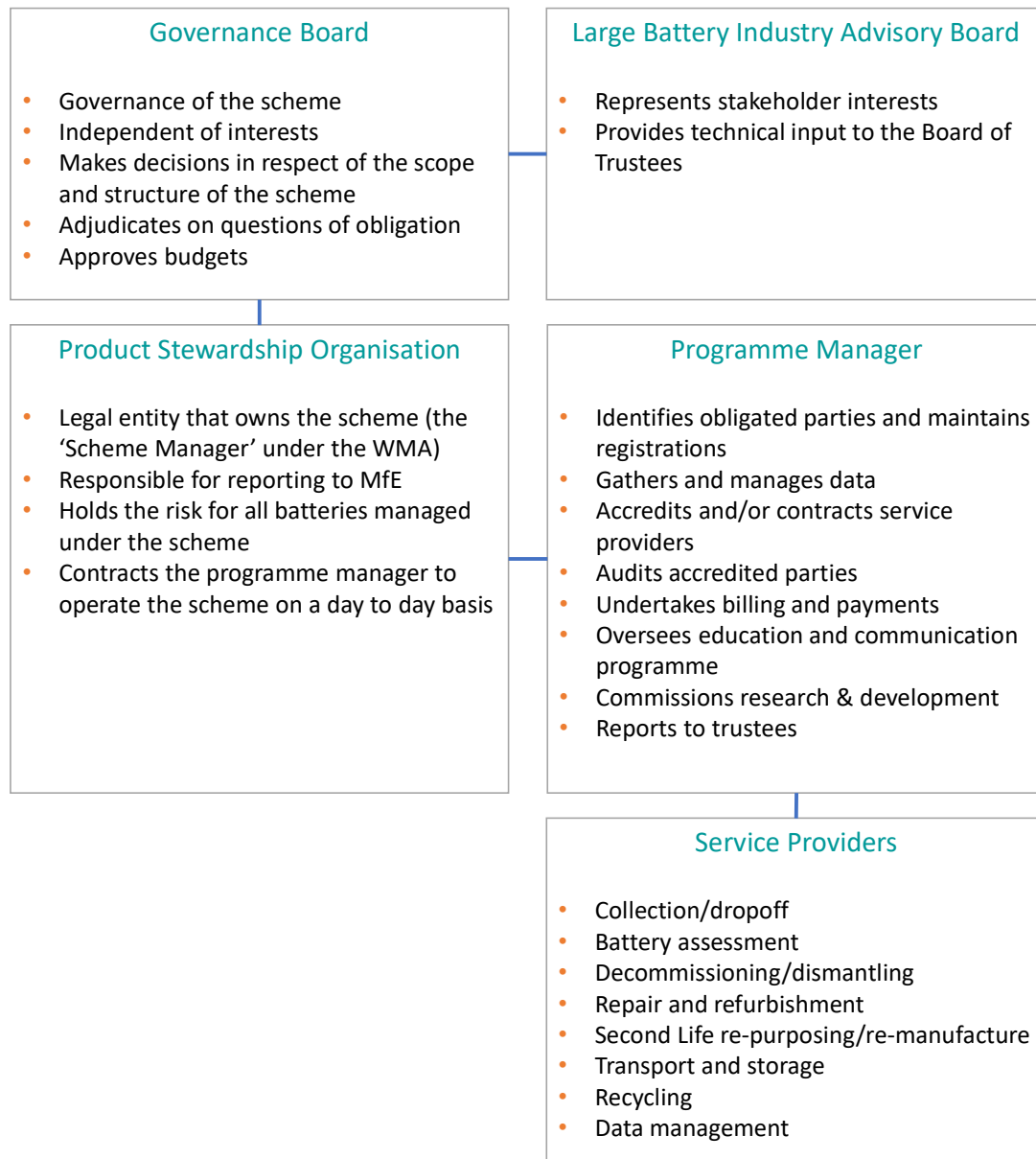
## 6.4 Preferred Organisational Model

### 6.4.1 Overview of Proposed Structure

The proposed structure aims to separate out the governance, management, and advisory functions of the scheme. This structure is designed to allow for independence and transparency in governance, while allowing for effective stakeholder and expert input, and flexibility in operation.

The proposed structure is outlined in the diagram below.

**Figure 2: Overview of Proposed Structure**



The key features of each of the above entities is noted in the sub sections below.

## **6.4.2 Product Stewardship Organisation (PSO)**

A single PSO is proposed for the scheme.

### **6.4.2.1 Legal Structure**

In accordance the Product Stewardship Guidelines [section 4(1)i], the scheme will be managed by a legally registered not-for-profit entity.

No determination of the type of legal entity most appropriate for the PSO has been made. This will depend on the outcome of ongoing discussions to establish the PSO. Options for the legal entities and their appropriateness are noted in Appendix A.7.1.

#### 6.4.2.2 Role of PSO

The PSO would undertake the following key functions in the context of the product stewardship scheme:

**Legal Entity.** The PSO would be the legal entity that owns the scheme. It would be the ‘scheme manager’ as defined under the WMA, and undertake the responsibilities conferred on it in the WMA including, but not limited to:

- Being the contact for the scheme [s5]
- Applying for accreditation of the scheme, and any variations [13(1), 14(1)(a), 15(4), 16(3), 17(2), 18(2)(a)(b)]
- Participating in audits of the scheme [s88(1)(f)]
- Paying for costs associated with auditing the scheme [s20(b)]

**Reporting:** The PSO will be the entity responsible for reporting to MfE on its performance, including meeting agreed targets (refer section 6.3.4)

**Holding Risk:** The PSO will hold the risk for all batteries managed under the scheme. In other words, if an accredited or contracted operator fails to carry out its agreed obligations (for example if the entity goes out of business and leaves a stockpile of batteries, or creates an environmental liability which they are unable to remedy) the PSO will have ultimate responsibility for ensuring the situation is remedied.

**Ensuring Required Tasks are Carried Out.** In practice this is expected to entail the PSO contracting the programme manager to operate the scheme on a day to day basis, and overseeing its activities to ensure they are being carried out to the necessary standards and completeness to ensure the scheme is effective in meeting its objectives.

#### 6.4.3 Governance Board

##### 6.4.3.1 Role

The Governance Board will undertake the following key functions:

**Decision Making:** The Governance Board will be responsible for all decisions in respect of the scope and structure of the scheme as it evolves over time. This may include consulting and negotiating with the Government and key stakeholders regarding any proposed changes.

**Appointing and Reviewing the Performance of the Programme Manager:** The Governance Board will be responsible for appointing the entity to run the programme, including determining the criteria for selection, and the terms and structure of any appointment. It is expected that such terms will also include

regular performance reviews and reporting clauses, and that the Governance Board will carry out such reviews.

**Budget Approval:** The budgets for the operation of the scheme are expected to be set annually based on projected costs and income (refer section 6.3.2). The Governance Board will be responsible for reviewing these projections (including the methods of calculation) and approving the annual budgets and schedule of fees.

**Approve Reports and Report to Government:** It is expected that the Programme Manager will generate performance reports on key metrics of the scheme (including but not limited to agreed targets – refer section 6.3.4), for the purposes of monitoring the scheme and reporting to the Ministry for the Environment. The Governance Board will review and approve reporting and supply these to the Ministry for the Environment in accordance with the requirements for accredited schemes.

**Adjudicate on Questions of Obligation:** While the identification of obligated parties is intended to be as clear as possible, it is anticipated that there will be instances where individual circumstances result in some ambiguity around obligation. On the basis of information provided by the programme manager and the interested parties, the Governance Board will be expected to adjudicate on these issues and determine obligation. It is noted that if a legal interpretation is required, this is outside of the remit of the Governance Board and a decision by Government, or through the courts, may be required.

All governance activities will adhere to the Commerce Commission guidelines on collaborative activities between competitors<sup>18</sup> and follow governance best practice guidelines (for example the Institute of Directors of New Zealand Code of Practice for Directors), including for the identification and management of conflicts of interest.

#### 6.4.3.2 Composition

It is important that the members of the Governance Board are independent of commercial, political, or other interests, and have the requisite skills and experience to carry out the functions required. No set number of Board members is proposed at this point, although it is anticipated that there would be around 5-10 members, as this would allow for a sufficient range of skills and experience to be represented while enabling ease of management.

As required in the Product Stewardship Guidelines, Board members will be appointed through an open and transparent process, and through established formal channels,

---

<sup>18</sup> [https://comcom.govt.nz/\\_\\_data/assets/pdf\\_file/0025/151846/Product-stewardship-schemes-Fact-sheet-June-2019.pdf](https://comcom.govt.nz/__data/assets/pdf_file/0025/151846/Product-stewardship-schemes-Fact-sheet-June-2019.pdf)

liaise with the Advisory Board to ensure the interests of producers and consumers of the priority product and the wider community are represented.

Provisional criteria for members of the Governance Board include the following:

- Experience and expertise in senior governance roles
- Knowledge and experience of product stewardship schemes
- Understanding of circular economy principles and business models
- Knowledge and experience in the wider industry in which large batteries operate, or in related industries (for example, the electricity sector, the transport sector), while not having any direct interest in large batteries
- Linkages with other related product stewardship schemes (for example, tyres, e-waste)
- Expertise or experience in financial management
- Expertise or experience in data management
- Experience or expertise in organisational structures and planning.

It is proposed that Governance Board members, in particular the Chair, be financially recompensed for their time. This is to recognise the potential time commitment and level of expertise and professionalism required of the Board.

## 6.4.4 Advisory Board

### 6.4.4.1 Role

The Advisory Board will be responsible for canvassing and representing stakeholder interests.

It is proposed that the Advisory Board operate in a non-statutory role and be comprised of volunteers. Depending on the scope, scale, and workload of the group, there may be a provision for a paid Secretariat (nominally to be provided by the Programme Manager).

In order to ensure that the Advisory Board has appropriate opportunity to assess issues and provide advice to the Governance Board, a number of measures are proposed (these may be amended depending on what is practical and effective), potential measures include:

- Programming regular (e.g. quarterly) meetings of the Advisory Board
- Including an Advisory Board input agenda item at each Governance Group meeting
- Providing a copy of the Governance Group agenda to the Advisory Board in advance of each meeting
- Stipulating, in the Governance Group policies and processes, that the Advisory Board's input must be sought before making decisions relating to the structure and scope of the product stewardship scheme

- In recognition of the fact that there may be a variety of divergent views held by members of the Advisory Board, that the range of views be required to be presented to the Governance Group on a given topic.

#### 6.4.4.2 Composition

It is proposed that representatives are nominated by stakeholders and appointed by the Governance Board. No absolute limit on size is proposed at this stage, and it may be appropriate for key interests to be represented by more than one party. The stakeholder groups expected to be represented include the following:

1. New vehicle industry
2. Used vehicle industry
3. Stationary storage sector
4. Electricity network operators and generators
5. Recycling operators
6. Second-life operators
7. Mechanics
8. Private Electric Vehicle users
9. Fleet Electric Vehicle users
10. Stationary storage users
11. Transport operators
12. Iwi
13. Insurance industry
14. Vehicle testing
15. Territorial Authorities
16. Battery manufacturers
17. Auto dismantlers
18. Other related product stewardship schemes
19. Environmental/sustainability/circular economy groups
20. Community sector
21. Academic and research sector
22. Government agencies

The term of members, and structure of the Advisory Board, has yet to be determined. In considering the structure and the membership, care will need to be taken to ensure that it is both adequately representative and able to function effectively and efficiently.

The Advisory Board could also elect to seek expert input from outside of the Board on key issues and/or establish subcommittees to provide advice to the Governance Board.

#### 6.4.5 Programme Manager

The Programme Manager would be a separate legal entity to the PSO. It is proposed that it would be formally contracted to the PSO to deliver certain functions on behalf of the PSO. The Programme Manager could be an entity set up specifically to run the large batteries product stewardship programme, a private organisation with appropriate skills, or an organisation that also provides programme manager services to related schemes

(such as e-waste or tyres). A formal process would be undertaken to identify and procure the services of the Programme Manager.

The Programme Manager would be responsible for carrying out the day-to-day functions of the scheme. These core functions are expected to include:

- Identifying obligated parties and maintaining registrations
- Gathering and managing data
- Accrediting and/or contracting service providers
- Auditing accredited parties
- Undertaking billing and payments
- Overseeing education and communication programmes
- Commissioning research & development
- Reporting to trustees

Refer to section 6.5 for further detail on the role of the Programme Manager.

#### 6.4.6 Service Providers

It is proposed that the core functions that comprise delivery of the scheme on the ground will be carried out by a range of service providers. Service providers will be independent businesses or organisations that are either accredited by the scheme (via the Programme Manager) or contracted to the scheme (via the Programme Manager). These functions are expected to include (but not be limited to):

- Collection/dropoff
- Battery assessment
- Decommissioning/dismantling
- Repair and refurbishment
- Second-life re-purposing/re-manufacture
- Transport and storage
- Recycling
- Data management.

#### 6.4.7 Proposed Pathway to Establish a PSO

A range of key steps need to be undertaken in order to set up a PSO, namely:

- **Defining the criteria for the PSO.** This will be done by the B.I.G. Core Delivery Team and the B.I.G. Governance Group and will align with the Product Stewardship Guidelines which state *“Proper governance is necessary to ensure that the scheme:*
  - *carries out what it says it will*
  - *provides a process for decision-making with appropriate checks and balances*
  - *is monitored and reviewed regularly*
  - *can adjust to advice, challenges, criticisms and opportunities*

- *is an equitable scheme, including managing conflicts of interest and giving all participants an opportunity to provide comments and be aware of the actions performed on behalf of them*
  - *records all important information and reports it to relevant stakeholders.”*
- The criteria for the PSO will also reference the original aims of B.I.G. i.e. that the scheme:
  - should be **flexible** (to be able to manage changing technologies and socio-economic and environmental context),
  - should **enable and support a circular economy** solution for large batteries (including the opportunity for second or third life and adherence to circular economy principles)
  - is evidence-based, including being informed by trials of existing end-of-use and end-of-life management of large batteries
  - aligns where possible with similar activities for small batteries.
- **Identifying and interviewing candidate organisations** for setting up and managing the PSO who meet the agreed criteria. This will be done by the B.I.G. Core Delivery Team and the B.I.G. Governance Group.
- **In discussion with MfE, proposing one organisation to set up and manage the PSO**
- A representative from an independent organisation will be invited to **take over as Chair of B.I.G.** to manage the Scheme through the transition phase and setting up of the PSO. The transition phase is likely to include the following activities:
  - Working with MfE to get scheme design approval
  - Establishing the legal entity for the PSO
  - Applying for accreditation
  - Undertaking Cost-benefit analysis and Life Cycle Assessment
  - Public consultation
  - Refining scheme
  - Implementation
  - Engagement events and ongoing communication including with B.I.G. members, Government, industry stakeholders and the general public.
- The current members of the Core Delivery Team will be **invited to join the current B.I.G. Governance Group** (unless they continue to be involved in delivery of the transition activities) to ensure that the original aims of B.I.G. are met e.g. circular principles are adhered to. The B.I.G. Governance Group will continue during the transition until the PSO is established and appropriate governance arrangements are in place.
- Time, effort and resources will be required to take the scheme through its transition phase to the establishment of a PSO. Detailed activities and estimated costs have been included in Appendix A.10.0.



## 6.5 Programme Manager Specifications (Programme Delivery)

The Programme Manager would undertake the core functions outlined in the following subsections.

### 6.5.1 Identifying Obligated Parties

- **Identify obligated parties.** This would be one of the core tasks of the Programme Manager. It is proposed that the Programme Manager works with relevant industry bodies (e.g. MIA, VIA, MTA, ENA, EECA) to identify potential obligated parties as well as other research techniques (such as internet searches, company databases, leads from other parties etc.).
- **Maintain a database of obligated parties.** Details of potentially obligated parties would be recorded in a database. It is likely that there will be some parties (such as certain vehicle importers), who do not currently handle large batteries but are likely to in the future. These parties will be maintained in the database and provided with regular communication to ensure they are aware of their obligations if their circumstances change.
- **Inform potentially obligated parties of their obligations.** Once obligated parties have been identified, the Programme Manager would inform them about their obligation under the scheme and what is required for compliance.
- **Register obligated parties.** Obligated parties will be required to formally register and provide a regular declaration of the batteries imported/manufactured in NZ.

#### 6.5.1.1 Auditing of Compliance

Obligated parties will be required to submit a regular declaration regarding the number of batteries they have imported/manufactured. Even if no batteries have been imported in the period a nil declaration would be required. An audit programme would be drawn up and agreed with the PSO. The audit programme may include (but not be limited to):

- Following up registered parties who have not provided a declaration
- Auditing where there are anomalies in the pattern of batteries imported
- Checking vehicle registration data
- Profiling of obligated parties to identify potential non-compliant parties
- Random auditing of obligated parties
- Auditing of potentially obligated parties who have not registered.

Enforcement action by the Programme Manager (on behalf of the PSO) would be limited to removal of registration under the scheme (and hence the ability to place obligated product on the market), or removal as an accredited supplier to the scheme.

Compliance action for offences under S65 the WMA would be the responsibility of the Ministry for the Environment.

## 6.5.2 Data Management

This would be one of the core roles of the Programme Manager. They would be responsible for specifying, procuring, and setting up appropriate IT systems. The IT systems would need to cover the following functions:

- Database of potentially obligated parties
- Database of registered users
- Tracking of batteries on import/manufacture
- Tracking of batteries through end of use/end-of-life
- Calculation of financial obligations
- Billing of obligated parties
- Payments to accredited/contracted suppliers.

The data management would be expected to meet all professional standards including (but not limited to):

- Accuracy and completeness
- Security
- Maintenance of commercial confidentiality for sensitive information
- Maintenance of appropriate access levels.

### 6.5.2.1 Database of Battery Types

It is proposed to develop a database of battery types. Each of these battery types would then be able to be assessed by the PSO and a fee could be calculated prior to import. This would enable importers and OEMs to accurately assess their potential liability in advance and make appropriate budgetary provision.

## 6.5.3 Accrediting and/or Contracting Service Providers

The Programme Manager will determine how services are most appropriately delivered. It is expected that services will primarily be delivered through contracted or accredited parties. As noted in section 6.3.6, suppliers to the scheme will be expected to meet service standards and would be accredited before they become official suppliers to the scheme. Options for accreditation processes include:

- Establishing a 'code of conduct' that anyone accredited by the scheme would be expected to adhere to. This could have various levels of enforcement applied (from essentially no enforcement through to regular inspections of a site).
- Establishing a training programme and/or qualification which each accredited operator would have to have staff complete in order to maintain their accreditation. This could link to existing standards where applicable (e.g. AS/NZS 5377: Collection, storage, transport and treatment of end-of-life electrical and electronic equipment).
- Establishing an accreditation process that requires operators to submit written manuals or documentation to demonstrate their processes and compliance.

- Delivering compliance with service standards through a commercial contracting process. The standards would essentially be included as standards for service delivery as part of a contract. The immediate penalty for non-compliance would be cancelling of the contract. The advantage of this approach is that it utilises processes that businesses are familiar with.

Different accreditation processes are likely to be appropriate for different parts of the value chain and potentially for different stages in the evolution of the scheme.

In the case of accreditation of recyclers, it would make sense that the same recyclers are accredited under the large battery and e-waste product stewardship scheme. There could therefore be a single set of standards and a single process for this aspect.

The B.I.G. Safety & Logistics Group has developed industry guidelines for the safe handling, transport, and storage of batteries. The topic covered, and issues addressed in the guidelines are expected to form the basis for an accreditation process for these activities (refer Appendix A.11.0).

### 6.5.4 Auditing of Accredited/Contracted Service Providers

An audit programme for accredited/contracted service providers would be drawn up and agreed with the PSO. The audit programme may include (but not be limited to):

- Following up accredited/contracted service providers who have not been active
- Auditing where there are anomalies in the pattern of claims or data supplied
- Profiling of accredited/contracted service providers to identify potential non-compliant parties
- Random auditing of accredited/contracted service providers.

### 6.5.5 Billing and Payments

#### 6.5.5.1 Billing of Obligated Parties

It is proposed that billing of obligated parties will be determined during the application for accreditation of the scheme, and would take place as follows:

- A schedule of fees would be developed and published each year (refer section 6.3.2). The schedule would set out:
  - The applicable per kg rate for large batteries
  - The variations to the rate, based on set modulations
- This would allow the obligated party to calculate their likely obligation. The obligated party would submit their declaration to the PSO on an agreed interval (nominally monthly). The PSO would confirm the calculation is correct and issue the bill to the obligated party.
- Once the bill has been paid the PSO would issue an (electronic) certificate of compliance for the relevant batteries. This could be used to prove compliance with border or vehicle inspections.

It is proposed that all declarations and billing take place on an appropriate information technology (IT) platform. This will allow for full transparency and automated tracking of declarations and transactions and provide for efficient administration.

It is also proposed to develop a database of battery types, that would be accessible from within the IT platform. Each of these battery types would then be able to be assessed by the PSO and a fee calculated prior to import. This would enable importers and OEMs, who would have online access, to accurately assess their potential liability in advance and make appropriate budgetary provisions.

#### **6.5.5.2 Payments**

There are likely to be a range of mechanisms employed to effect payments made to service providers. These may include:

- Flat rate payments based on set schedules (e.g. battery removal by vehicle or battery type, recycling by weight). Developing an appropriate and fair schedule of payments will be a critical task for the programme manager. The range of activities for which payments are authorised will be able to be updated over time to reflect the realities of the scheme operation
- Re-imbursement of documented costs (e.g. transport)
- Fixed price payments for specific operations. This is likely to be applicable where services are contracted to a supplier in bulk for an agreed fee.

Payments to suppliers could take a range of forms depending on the service provided and the agreed commercial relationship.

The payments need to be fair to all parties, avoid perverse incentives, and be administratively efficient.

It is likely that the payment mechanisms will evolve over time.

#### **6.5.6 Education and Communication**

The Programme Manager would be responsible for coordination and delivery of education and communications functions on behalf of the PSO. It is noted that these functions are included as targets that the PSO would be required to report to the Ministry for the Environment on.

These are vital functions to the effective operation of the scheme. Consumer research to date<sup>19</sup> indicates that consumers require:

- A clear, convenient way for them to dispose of their end-of-life batteries (either in a vehicle or separately), that they are confident that the batteries will be managed responsibly

---

<sup>19</sup> Refer Milestone Two Report

- Easy to access, reliable information (ideally from official sources) on what to do and where to go
- No additional cost for doing the right thing.<sup>20</sup>

### 6.5.7 Research & Development

An important element in delivering a circular product stewardship scheme is supporting innovation that will enable more circular models of operation and technologies. The Programme Manager will be responsible for developing and managing a research and development programme. The research and development programme will be funded through the advanced recycling fee.

It is proposed that the programme utilise the following mechanisms:

- Identifying and prioritising key research areas
- Commissioning research projects in line with priorities
- Operating a contestable fund that is open to registered parties and accredited/contracted suppliers to apply to for support of research and development projects.

The priority research and development areas will be identified and agreed with the PSO, Governance and Advisory Boards. It is expected that they may include (but not be limited to):

- Market development for second-life applications
- Support of technologies/processes to support second-life applications
- Support for development of onshore recycling/pre-processing technologies
- Consumer research
- Support for collection infrastructure
- Funding of trials and prototypes.

### 6.5.8 Reporting & Secretariat

The Programme Manager would provide secretariat services to the Governance Board and the Advisory Board. This would include researching, collating, and providing appropriate information to these groups to enable effective decision making and advice.

The Programme Manager will also be responsible for reporting on all areas of the operation of the scheme to the Governance Board, and preparing the information required to fulfil the PSO's reporting requirements to the Ministry for the Environment.

---

<sup>20</sup> Although there was some support amongst submitters and survey respondents, the most favoured option was no bounty/refundable deposit (ReferA.5.0). An alternative mechanism to a deposit refund is simply to offer a bounty to consumers for the return of batteries and fund this by increasing the advance recycling fee. This means that the option of a bounty can be easily added if return rates are low, and this mechanism is needed.

This is expected to include reporting on targets established for the scheme for the following areas (as set out in the Product Stewardship Guidelines):

- a. significant, timely and continuous improvement in scheme performance;
- b. performance against best practice collection and recycling or treatment rates for the same product type in high-performing jurisdictions;
- c. a clear time-bound and measurable path to attain best practice;
- d. implementation phase-in to reflect availability of markets and infrastructure;
- e. new product and market development to accommodate collected materials; and
- f. measures for public awareness of scheme participant satisfaction and a record of response by the scheme to concerns raised.

As noted in 6.3.4 it is proposed that the metrics and targets to fulfil the above reporting requirements will be developed by the PSO, in consultation with the MfE as part of the final scheme design and application for accreditation.

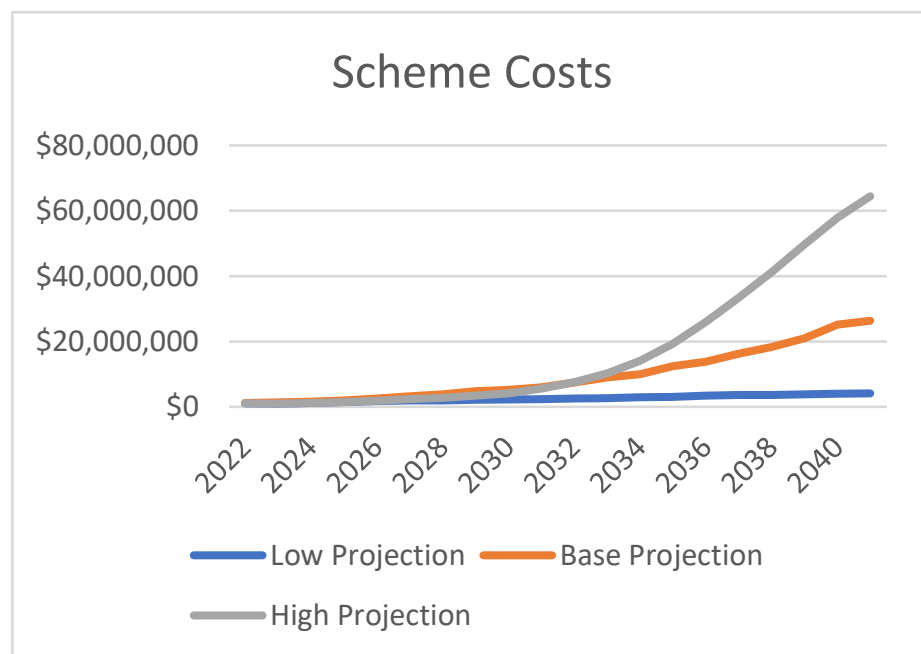
## 6.6 Budgets and Financial Flows

Budgets and financial flows were examined in the Milestone Two report. A brief summary is provided below. The financial flows are difficult to forecast as they will depend heavily on the numbers of batteries reaching end-of-life and being placed on the market. The financial modelling undertaken in Milestone Two considered low, medium, and high projections for the number of batteries to be managed by the scheme.

### 6.6.1 Total Scheme Costs

Figure 3 and Table 3 below show the estimated total scheme costs under each scenario.

**Figure 3: Estimated Total Scheme Costs Per Annum by Scenario**



**Table 3: Estimated Total Scheme Costs Per Annum by Scenario**

Year	Low Projection	Base Projection	High Projection
2022	\$1,025,233	\$1,276,123	\$1,063,322
2023	\$966,286	\$1,306,862	\$1,036,874
2024	\$1,189,982	\$1,629,697	\$1,293,290
2025	\$1,507,220	\$2,029,192	\$1,631,656
2026	\$1,782,808	\$2,585,992	\$1,987,574
2027	\$1,952,712	\$3,258,011	\$2,372,917
2028	\$2,009,015	\$3,868,122	\$2,795,669
2029	\$2,093,572	\$4,780,072	\$3,490,209
2030	\$2,213,441	\$5,234,938	\$4,167,547
2031	\$2,340,541	\$5,995,724	\$5,522,669
2032	\$2,534,587	\$7,403,580	\$7,515,808
2033	\$2,730,837	\$8,972,099	\$10,306,544
2034	\$2,928,364	\$10,035,967	\$14,131,398
2035	\$3,052,724	\$12,453,198	\$19,317,032
2036	\$3,400,818	\$13,861,688	\$26,003,232
2037	\$3,523,971	\$16,248,500	\$33,312,394
2038	\$3,642,119	\$18,320,833	\$41,248,383
2039	\$3,793,451	\$21,026,167	\$49,628,519
2040	\$3,964,676	\$25,203,234	\$57,846,848
2041	\$4,163,472	\$26,394,962	\$64,472,480

The scenarios start off with very similar operating costs for the first five years, but increasingly diverge after this. By 2041 total annual scheme costs under the low scenario are just over \$4 million, while they are over 6 times this in the central scenario

and approximately 15 times greater under the high scenario. The differences in total scheme costs are driven primarily by the number of batteries that are assumed to reach end-of-life and require recovery under the scheme. Under the low scenario 7,625 batteries are assumed to be recovered under the scheme in 2041, while for the central scenario the figure is 62,141, and for the high scenario this climbs to 138,281.

## 6.6.2 Breakdown of Total Scheme Costs

The following table shows a breakdown of the estimated scheme costs for the base scenario.

**Table 4: Summary of Base Scenario Scheme Costs**

	2022	2026	2031	2036	2041
<b>Admin</b>	\$319,006	\$364,537	\$370,009	\$374,546	\$377,815
<b>Governance</b>	\$90,000	\$120,000	\$120,000	\$120,000	\$120,000
<b>Data Management</b>	\$197,694	\$115,387	\$115,387	\$115,387	\$115,387
<b>Comms and Education</b>	\$97,808	\$115,081	\$125,156	\$138,014	\$154,425
<b>Research &amp; Market Development</b>	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000
<b>Subtotal</b>	\$814,508	\$825,005	\$840,552	\$857,947	\$877,627
<b>Recovery</b>					
<b>Removal and Assessment</b>	\$114,696	\$614,992	\$2,109,585	\$5,346,789	\$10,509,155
<b>Transport and Shipping (incl recycling offshore to 2026)</b>	\$286,152	\$1,022,852	\$2,135,257	\$5,413,098	\$10,638,484
<b>Recycling (onshore)</b>	\$0	\$0	\$624,819	\$1,583,774	\$3,112,794
<b>Contingency</b>	\$60,768	\$123,142	\$285,511	\$660,080	\$1,256,903
<b>Subtotal</b>	\$461,616	\$1,760,986	\$5,155,172	\$13,003,741	\$25,517,336
<b>TOTAL</b>	<b>\$1,276,123</b>	<b>\$2,585,992</b>	<b>\$5,995,724</b>	<b>\$13,861,688</b>	<b>\$26,394,962</b>

In the early years of the scheme, administration and development costs account for a substantial portion of total costs, however as the number of units reaching end-of-life increases, this decreases as a proportion, but, by 2041, they are in line with international averages of around 3%. Battery removal and assessment and transport storage and shipping represent the largest proportions of the total scheme costs as the scheme matures.



For further detail on this, refer to the Milestone Two report.

The above costs will be re-examined and updated prior to submitting the application for accreditation for the scheme.

## 6.7 Regulatory and Legislative Requirements

### 6.7.1 Regulations Under the WMA

In order for the scheme to be implemented as described in this document, the following legislative/regulatory tools will need to be in place:

- A declaration under S22(1)(a) of the WMA prohibiting the sale of large batteries (as defined) except in accordance with an accredited scheme.
- Clarification that “in accordance with an accredited scheme” also confers the ability for the PSO to require obligated parties to supply information. If this is not the case, then the provision of this power would be required to be made explicit through other legislation or regulation. If obligated parties are able to withhold required information, and yet still be deemed to be operating “in accordance with an accredited scheme” this could severely undermine the ability of the scheme to carry out its functions.
- Clarification that “in accordance with an accredited scheme” also confers the ability for the PSO to require obligated parties to pay advanced recycling fees as provided for in the scheme design.
- Activation of S24 of the WMA for New Zealand Customs Service to provide information about priority products to the Secretary. This will be important for the purposes of monitoring and compliance.

#### 6.7.1.1 Potential Amendment to the WMA

We note that S22 (1)(a) only places a restriction on the sale of batteries but not the use of batteries.<sup>21</sup> Our interpretation is that private users who import batteries for their own use are potentially exempt. If this is correct, it raises a number of potential issues:

- What if they import a battery then sell it, for example, five years later? Do they suddenly become obligated? It is unclear how such an obligation could practically be determined and followed up on.
- There is a danger of creating a loophole where, for example, dealers sell cars or batteries directly to buyer before import. The car or battery then becomes a private use import that is exempt. This could potentially happen if the fee is large enough to create an incentive for avoidance (it is worth noting we do not think this is likely in the early stages of the scheme).

---

<sup>21</sup> The WMA defines ‘sale’ as including transfer of ownership without remuneration. The wording in the WMA is: sale includes a) an offer for sale; and b) distribution or delivery, whether or not for valuable consideration (including delivery to an agent for sale on consignment)

Similarly, S22 (1)(a) does not appear to place any obligation in relation to the importation of batteries for end-of-life management. Our interpretation is that, while there may be a requirement for an import permit, end-of-life batteries are potentially exempt from the scheme. If this is correct, it would appear to undermine the ability of any product stewardship scheme to be able to take account of end-of-life batteries coming into the country. This is clearly an issue as the end-of-life batteries will impose immediate costs on the system and the importing parties will be free-riders.

On the basis of the above, we suggest that, if 22(1)(a) is amended to restrict sale, use, or end of life management except in accordance with the scheme, this is likely to make the obligation clearer and reduce the potential for avoidance. For clarity, the suggested amendment would not be required for the scheme to be able to function.

## 6.7.2 Commerce Commission Guidelines

Product stewardship schemes, by their nature, involve a level of collaboration between commercial organisations. There are therefore some dangers that a scheme could breach the Commerce Act.

The following agreements are illegal under the Commerce Act:

- *agreements that contain cartel provisions* – provisions in agreements that fix prices, restrict output or allocate markets (section 30)
- *agreements that substantially lessen competition* – agreements between any two or more parties (e.g., competitors, suppliers, and customers) that have the purpose, effect or likely effect of substantially lessening competition in a market (section 27).

The following features of the proposed scheme design are likely to lessen the risks of breaching the act:

- An advanced recycling fee is applied to obligated products by billing the obligated party. Under the proposed scheme design it is up to the obligated party how these costs are recovered. This reduces potential issues such as price fixing.
- There are no restrictions on how or where product is sold
- Any supplier can apply for accreditation/contracts to supply services to the scheme and, if they meet the standards, can become accredited suppliers
- Any contracts for services to the scheme will be procured through an open procurement process
- There are no proposals to allocate territories or market segments to suppliers. The only exception to this may be if a territory or market segment is not being adequately serviced by the market, a contract may be let specifically to supply that territory or market segment, but this clearly results from a lack of competition, not an intention to restrict competition.

### 6.7.2.1 Potential Issues for Clarification

1. In section 4(1)(b)(ii) of the Product Stewardship Guidelines, the collection of priority product must be 'free' to consumers. It is not clear if this would

constitute 'price fixing'. Reimbursement of costs for services provided to carry out the collection and recovery of large batteries is proposed to be set in a number of ways, potentially including using price schedules, which would provide the same level of reimbursement to all service providers. Again, it is not clear if this would constitute price fixing.

2. Product stewardship schemes should not have any formal or informal agreements that the participating members will not deal with a particular third party if these agreements would substantially lessen competition. This could be an issue if scheme participants are required to deal only with other accredited/contracted service providers (for example for accessing recycling services). It is conceivable, for example, that a particular recycler may be assessed by the PSO as not providing a service of a standard acceptable under the scheme (for example they do not meet environmental criteria). The scheme would want to have the ability to constrain other accredited/contracted service providers from using these operators.

Commerce Commission advice will be sought on the proposed scheme design before submission of the application for accreditation.

### **6.7.3 Hazardous Substances and Dangerous Goods Regulations**

Lithium-ion batteries (or other batteries that present hazards at end of life), are not properly accommodated within the present regulatory framework concerning dangerous goods, hazardous substances, and the building regulations. For example, there is no guidance on the maximum quantity of lithium (or other) batteries can be stored in one place and for how long. For this to be properly managed, it should not be left up to the sector to determine and enforce appropriate standards but should be regulated by a central government authority (such as the Environmental Protection Authority).

### **6.7.4 Other Supporting Actions**

An important theme that emerged through the consultation process was the fact that, while there was a need for appropriate management of end-of-life batteries, by targeting electric vehicles and not internal combustion engine cars, it could create a disincentive for the adoption of electric vehicles, which would appear to the contrary to the current intent of Government's Zero Carbon policy.

A solution would be to have in place comprehensive end-of-life vehicle legislation, which covers the appropriate management of all vehicles at end-of-life. As noted in the Milestone One report, this is a common approach internationally, most notably in Europe.

## **6.8 Key Interactions**

### **6.8.1 Interactions with the Ministry for the Environment**

The following are the key interactions that are anticipated with the Ministry for the Environment once the scheme is in operation:

- Reporting as required under the Product Stewardship Guidelines
- Providing data for the purposes of the Ministry undertaking monitoring and compliance
- Informing the Ministry of incidences of non-compliance for the purposes of enforcement under section 65 of the WMA.

### 6.8.2 Interactions with Customs

It is not anticipated that there would be regular or ongoing interaction between the PSO and New Zealand Customs during the operation of the scheme. However, prior to submitting the application for accreditation we anticipate there may be further discussions with Customs for the purposes of informing the final scheme design. The discussion would be intended to clarify precisely what is required on import for Customs to fulfil an appropriate compliance role, the information that Customs is able to gather for the purposes of auditing the scheme, and if any potential changes to tariff codes are required.

### 6.8.3 Interactions with New Zealand Transport Agency

It is not anticipated that there would be regular or ongoing interaction between the PSO and New Zealand Transport Agency during the operation of the scheme. However, prior to submitting the application for accreditation we anticipate there may be further discussions with NZTA for the purposes of informing the final scheme design. The discussion would be intended to clarify precisely what is required on during the first registration process for NZTA to fulfil an appropriate compliance role, the information they are able to gather for the purposes of monitoring and compliance, and if any changes to processes and procedures are required.

### 6.8.4 Interactions with Key Stakeholders

There are likely to be ongoing interactions with key stakeholders during the operation of the scheme. The main platform for this is anticipated to be through the Advisory Board. In addition, there may be a role for industry bodies to assist the PSO in identifying obligated parties. This may entail establishing formal agreements in respect of information sharing.

### 6.8.5 Interactions with Other Schemes

Key potential interactions with other schemes are noted in the table below:

Proposed Scheme	Key Interactions
E-waste	<ul style="list-style-type: none"> <li>• Definition of large battery</li> <li>• Data management</li> <li>• Lead acid battery inclusion</li> <li>• Standards and accreditation for suppliers</li> <li>• Supply of infrastructure</li> <li>• Fee structures and levels</li> </ul>

	<ul style="list-style-type: none"> <li>• Research &amp; development</li> <li>• Communications</li> </ul>
<b>Tyres</b>	<ul style="list-style-type: none"> <li>• Application to vehicles</li> <li>• Fee collection methodology</li> <li>• End of Life Vehicles</li> </ul>
<b>Refrigerant Gasses</b>	<ul style="list-style-type: none"> <li>• Application to vehicles</li> <li>• Fee collection methodology</li> <li>• End of Life Vehicles</li> </ul>

It is worth commenting that there are a number of schemes, as presently proposed, that will apply to vehicles. These include tyres, refrigerant gasses, large batteries and the e-waste scheme (through provision for lead acid batteries).

It may be reasonably argued that, from a vehicle suppliers' perspective at least, that it would be sensible for these schemes to be aligned in how they are structured and administered. This would help minimise confusion and reduce the administrative burden.

Added to this is the fact that (as noted in 6.7.3 above) the large battery scheme will apply to Electric Vehicles but there is no equivalent scheme for Internal Combustion Engine vehicles.

Introduction of a comprehensive end-of-life vehicle scheme that encompasses administration of all of the product stewardship schemes relevant to vehicles and places consistent and appropriate standards around management of all environmental risks is worth further investigation.

## 6.9 Caveats

The existence of the large battery product stewardship scheme is premised on the fact that there is a net cost associated with the end of use/end-of-life management of large batteries including their safe collection, re-purposing, and recycling. It is conceivable that if, for example, the markets for the materials recovered from large batteries rise substantially, then there may be operators that are not part of the scheme that compete with the scheme for end-of-life product. This would be an issue if these operators do not operate to the same standards as accredited/contracted service providers.

Not all aspects of the scheme design are supported by all parties. The key areas where there are differing views include the following:

- How the advance disposal fee is administered. A number of parties (most notably the MIA and MTA) expressed a preference for the advance disposal fee to be applied at the point of import/assessment and be administered by New Zealand Transport Agency through on road costs, or at point of entry (Customs). The stated reasons for this preference were:

- That it would reduce the potential for avoidance of the fee
- That it would be administratively simpler and less burdensome for the industry
- That it would improve transparency to the consumer regarding the end of life costs.

It is also noted that this approach would align with the proposed approach for end of life tyres and refrigerant gases.

- The inclusion of a refundable deposit or 'bounty' (i.e. a sum payable to consumers on surrendering an end of life battery) was supported by a number of parties. It was felt that this would help reduce incidence of illegal dumping.
- The scheme does not currently extend to the export of batteries, in particular the export of batteries to jurisdictions such as the Pacific Islands, that do not necessarily have the infrastructure or systems in place to manage these at end-of-life.

Refer to A.6.0 for detail on stakeholder submissions, including responses to the points above.

## 7.0 Timelines and Implementation

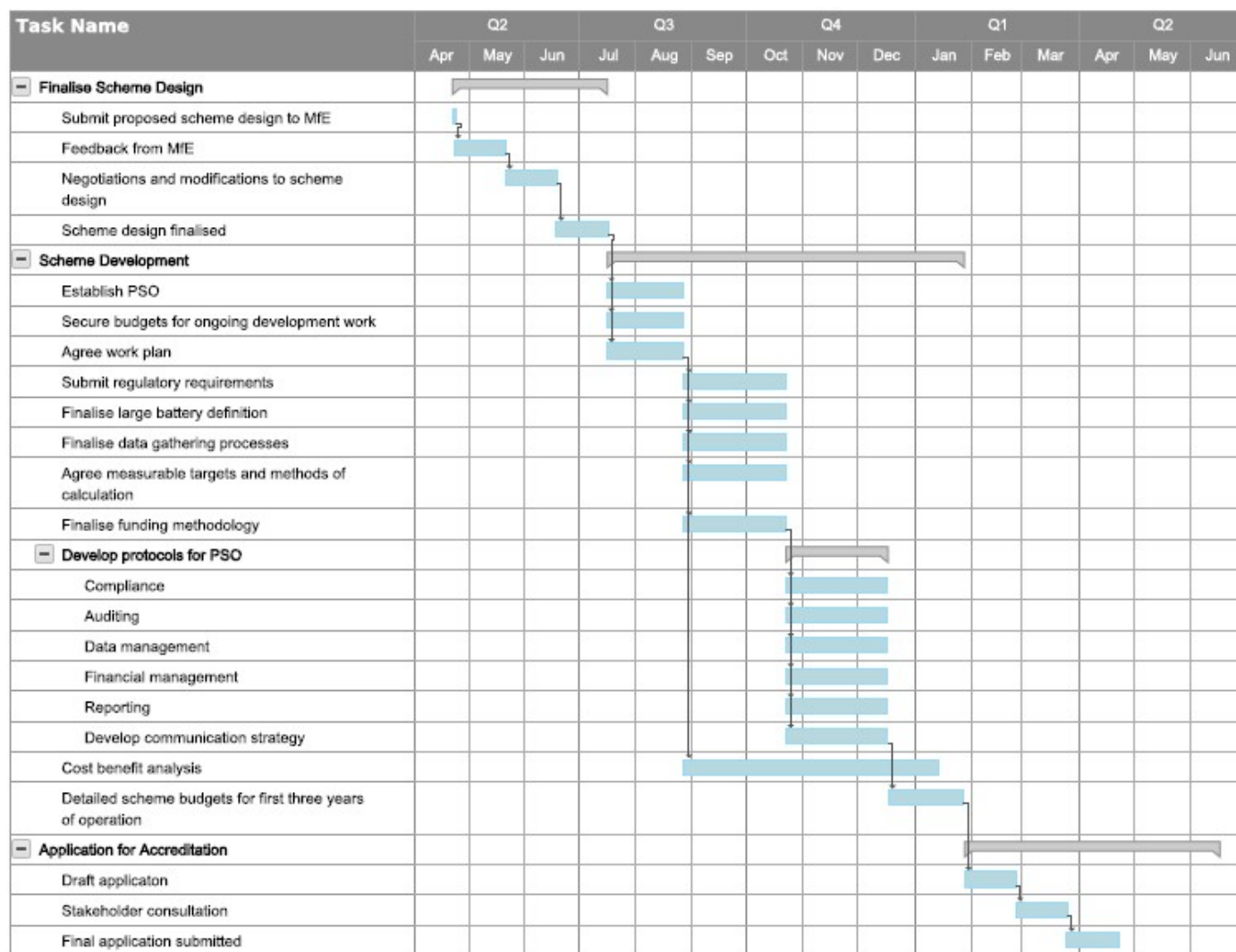
---

The Gantt chart below sets out proposed timelines to develop and submit an application for accreditation. It assumes that (as per S3(1)(b) of the Product Stewardship Guidelines) that an application for accreditation is required within one year of submitting co-design recommendations to the Government.

The ability to meet the timelines as set out below are dependent on a number of factors including the following:

- The scheme design is able to be finalised in a timely fashion. It is noted that aspects of the design may require further consultation with key parties
- Securing sufficient funding to enable the work required to develop the application, and establish a PSO
- Agreement among stakeholders on who establishes the PSO.

Timelines for approval of the scheme by the Minister, and enactment of required regulations, are dependent on a range of factors. Government is reportedly targeting 2023 for the launch of product stewardship schemes that are currently well advanced in their design.





## 8.0 Summary and Conclusions

---

### 8.1 Conclusions

The Battery Product Stewardship Research Project has successfully developed a proposed circular product stewardship scheme design that reflects the input of stakeholders and has their wide support.

The Battery Industry Group (B.I.G.) is of the view that the proposed design fulfils the design objectives set out for the project. These were:

- Complies with the requirements of the WMA
- Complies with the Product Stewardship Scheme Guidelines
- Delivers a circular product stewardship scheme that will help deliver a circular economy for large batteries
- Supports and aligns with the needs of the range of organisations involved in the battery and related industries
- Is equitable and comprehensive, and avoids loopholes and free riders
- Is simple and easy to understand, convenient, and accessible for consumers
- Is able to evolve over time as the needs of the sector expand and change, and as new technologies and processes come into play
- Is well governed, managed, and provides transparency and accountability
- Provides for input from all stakeholders
- Is affordable and efficient, and minimises administration costs.

### 8.2 Next Steps

For the proposed product stewardship scheme to move forward from this point, a number of key steps will need to happen.

The B.I.G. scheme proposal is perhaps slightly unusual in that B.I.G. is not a legal entity that is proposing to become the PSO for large batteries. For the scheme to progress it will be necessary to establish a PSO that can take the scheme forward and formally submit an application for accreditation. The pathway to developing a PSO is outlined in section 6.4.7.

In addition, the timelines and steps for implementing the scheme are detailed in section 7.0.

However, as well as these vital actions, there are a number of immediate next steps which will be necessary to ensure future success. To undertake these next steps it will be necessary to set up a B.I.G. 'Transition Team' to progress the scheme prior to the PSO becoming established. Key tasks include:

- Negotiating with the MfE on aspects of the scheme design that may require modification before approval is obtained. This may require further consultation

with stakeholders if modifications to the proposed scheme are likely to be of material interest to stakeholders.

- Working on establishment of the PSO as a legal entity
- Securing funding for the transition work, including funding through to the submission of the application for accreditation, and potentially for the initial operation of the PSO before the scheme becomes live.
- Undertaking communications work to garner further support for the scheme. This is expected to include development, hosting and maintenance of the B.I.G. website and emails, design work on proposal documents, including infographics and a video (note funding for this has already been secured).

It is expected that the B.I.G. transition team will be comprised primarily of members of the B.I.G. Core Delivery Team and Governance Group.

# APPENDICES

# A.1.0 General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020

---

(From: <https://gazette.govt.nz/notice/id/2020-go3342>)

Pursuant to section 12(1) of the Waste Minimisation Act 2008, I, The Honourable Eugenie Sage, Associate Minister for the Environment, acting under delegated authority, give the following notice.

## 1. Title and Commencement—

(1) This notice may be cited as the General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020

(2) This notice takes effect from the date of publication hereof in the *New Zealand Gazette*.

## 2. Interpretation—

Unless the context otherwise requires:

**Producer** has the meaning given in section 5 of the Waste Minimisation Act 2008.

**Wider community** may include, but is not limited to, local councils, iwi, and environmental Non-Governmental Organisations.

**Waste hierarchy** means, in order of priority, waste prevention, reuse, recycling, recover (materials and energy), treatment and disposal.

## 3. Time Within Which an Application for Accreditation of the Scheme is Expected to be Made

(1) Applications for accreditation are expected as follows:

- a. Within one year from the date of priority product declaration for product categories with existing accredited voluntary schemes that wholly or substantially cover that priority product;
- b. Within one year from the date of priority product declaration or co-design recommendations to the Government, whichever is later, for product categories not substantially covered by voluntary accredited schemes for which a co-design process has commenced; or
- c. Within three years from the date of priority product declaration for all other priority product categories.

## 4. Expected Product Stewardship Scheme Effects

(1) Accreditation applications must specify how the proposed scheme will help to achieve the following:

- a. Circular resource use
  - i. Continuous improvement in minimising waste and harm and maximising benefit from the priority product at end-of-life.
  - ii. Increasing end-of-life management of the priority product higher up the waste hierarchy to support transition to a circular economy in New Zealand.

- iii. Investment in initiatives to improve circular resource use, reusability, recyclability and new markets for the priority product.
- b. Internalised end-of-life costs
  - i. Full net costs for stewardship of priority products at end of life met by product or producer fees proportional to the producer's market share and ease of reuse or recyclability of their product.
  - ii. Free and convenient collection of the priority product for household and business consumers at end-of-life, including rural populations.
  - iii. Collection and management of legacy and orphaned priority products fully or substantially funded by the scheme.
- c. Public accountability
  - i. Clear information to household and business consumers on how the scheme works, how it is funded, and how to find the nearest collection point.
  - ii. Transparent chain of custody for collected and processed materials, to both onshore and to offshore processors, and published mass balances showing rates of reuse/ recycling or environmentally sound disposal of the priority products.
  - iii. Publicly available annual reports that include measurement of outcomes and achievement of targets, fees collected and disbursed, and net cash reserves held as contingency.
- d. Collaboration
  - i. Optimal use of existing and new collection and processing infrastructure and networks, and co-design and integration between product groups.

### **Expected Product Stewardship Scheme Contents**

(1) Accreditation applications must specify how the proposed scheme incorporates or will provide for the following:

- a. Governance
  - i. The scheme will be managed by a legally registered not-for-profit entity.
  - ii. Annual independent audits will be conducted on scheme performance and included in scheme's annual reports to the Ministry for the Environment. The annual reports must contain the following:
    - a. financial performance and scheme cost-effectiveness;
    - b. environmental performance; and
    - c. agreements with scheme service providers.
  - iii. Governance arrangements will be established for the initial set up and ongoing development and operation of the scheme that are appropriate to the size and scale of the scheme.
  - iv. All governance activities will adhere to the Commerce Commission guidelines on collaborative activities between competitors, including but not limited to considering the option of applying for collaborative activity clearance from the Commission for the scheme.

- v. The scheme will be the only accredited scheme for that product, or
    - a. have agreements in place with other scheme managers to enable cooperation and cost-effective materials handling and to prevent confusion for household and business consumers; and
    - b. demonstrate how net community and environmental benefit (including cost-effectiveness and nonmonetary impacts) will result from multiple schemes for that priority product.
  - vi. Directors or governance boards will:
    - a. be appointed through an open and transparent process;
    - b. represent the interests of producers and consumers of the priority product and the wider community as informed by stakeholder advisory groups; and
    - c. follow governance best practice guidelines, for example the Institute of Directors of New Zealand *Code of Practice for Directors*, including for the identification and management of conflicts of interest.
- b. Scheme operations
  - i. Services (e.g. collection, sorting, material recovery and disposal) will be procured using transparent, nondiscriminatory and competitive processes open to all competent entities whether existing, new entrant or social enterprise.
  - ii. Clear, regular and open reporting and communication will be given to scheme participants and stakeholders.
  - iii. Processes exist to manage commercially confidential or sensitive information appropriately.
  - iv. All people involved in the scheme will have completed suitable training to complete their roles, including in best practice in prevention and reduction of harm to people and the environment.
  - v. Ability to obtain new or existing permits held, for all necessary activities in New Zealand in relation to processing and potential export of priority products or their constituent components.
- c. Targets
  - i. All schemes will set and report annually to the Ministry for the Environment on targets that include as a minimum:
    - a. significant, timely and continuous improvement in scheme performance;
    - b. performance against best practice collection and recycling or treatment rates for the same product type in high-performing jurisdictions;
    - c. a clear time-bound and measurable path to attain best practice;
    - d. implementation phase-in to reflect availability of markets and infrastructure;
    - e. new product and market development to accommodate collected materials; and

f. measures for public awareness of scheme participant satisfaction and a record of response by the scheme to concerns raised.

ii. Targets will be reviewed and adjusted no less than every three years from the date of accreditation, taking into account changes in the market, natural events and technology.

Dated at Wellington this 29th day of July 2020.

HON EUGENIE SAGE, Associate Minister for the Environment

## **A.2.0 Stakeholder Consultation Information**

---





Proposed Scheme Design for Large  
Batteries: Draft for Consultation

1st March 2021

## CONTENTS

CONTENTS.....	2
THE BATTERY INDUSTRY GROUP.....	3
WHAT IS A 'PRODUCT STEWARDSHIP SCHEME'?.....	3
SUMMARY OF PROPOSED SCHEME DESIGN.....	4
SCHEME DESIGN DETAIL.....	7
FREQUENTLY ASKED QUESTIONS:.....	15
LARGE BATTERY SCHEME DESIGN - RESPONSE FORM.....	17

Draft for Consultation

## THE BATTERY INDUSTRY GROUP

The Battery Industry Group (B.I.G.) is a stakeholder-led group driving collaboration, innovation, circular solutions and responsible management of large batteries in New Zealand.

Large batteries are those from electric vehicles (EVs) or used in stationary energy storage.

B.I.G. has over 170 members from energy, waste, transport, batteries and academia.

The key aim of B.I.G. is to deliver a proposal for a 'circular' product stewardship scheme (i.e. a scheme which supports a circular economy) for large batteries, with a focus on lithium-ion.

This document presents a draft proposed scheme design which stakeholders are invited to provide feedback on.

### WHAT IS A 'PRODUCT STEWARDSHIP SCHEME'?

We all need to help reduce the impacts of manufactured products on our environment. When a producer, brand owner, importer, retailer or consumer accepts responsibility for reducing a product's environmental impact, we call this *product stewardship*. Taking responsibility may range from designing a product which can be broken down into recyclable or reusable components, to [collection and] responsible disposal or recycling of a product.

Source: Ministry for Environment website [About product stewardship in New Zealand | Ministry for the Environment \(mfe.govt.nz\)](https://www.mfe.govt.nz/about-us/about-product-stewardship-in-new-zealand/)

Product stewardship can help to support a circular economy where: waste and pollution are designed out; products and materials are kept in use (such as a large battery being given a second life in another application); and natural systems are regenerated.

## SUMMARY OF PROPOSED SCHEME DESIGN

In July 2020 large batteries were specifically declared a 'priority product' under the Waste Minimisation Act 2008 (WMA) as part of the electrical and electronic products (e-waste) category. This means that in order to put large batteries on the market in NZ, they will need to be part of an accredited product stewardship scheme.

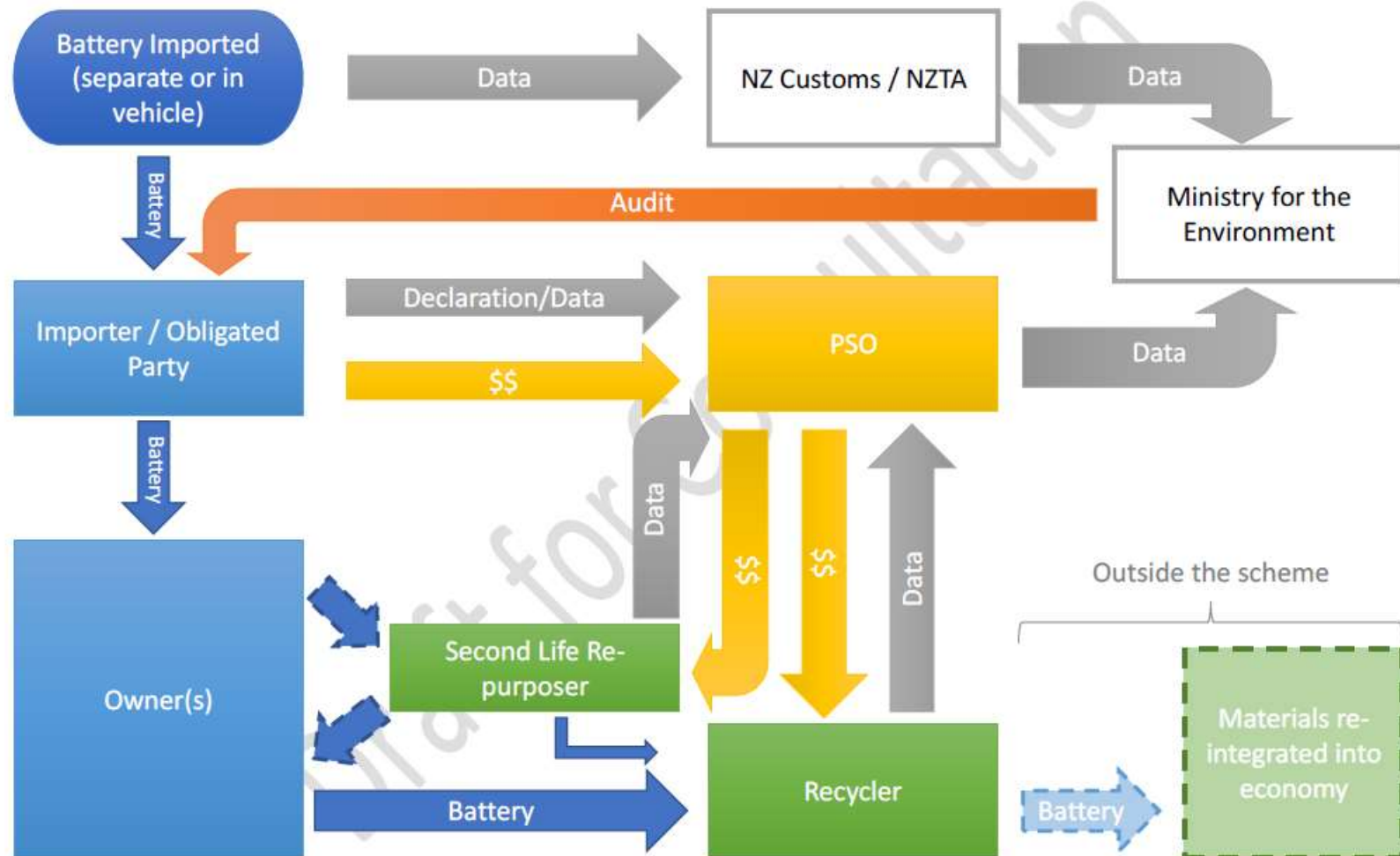
The proposed scheme design put forward in this document has been developed to meet the requirements of the WMA and the Ministry for the Environment<sup>1</sup>. The design also takes into account research and input from stakeholders (as outlined in the Milestone 1 and 2 reports).

A simplified version of the proposed scheme design is shown in the following chart:

---

<sup>1</sup>Ministry for the Environment's General Guidelines for Product Stewardship Schemes for Priority Products Notice 2020

# Scheme Overview





The proposed scheme would work as follows:

1. When a large battery is imported into NZ (either as a battery or in a vehicle or other machinery), information on the imported item is recorded by Customs and potentially other bodies such as NZTA.
2. Obligated parties importing the batteries voluntarily provide information the items they are importing to the Product Stewardship Organisation (PSO).
3. The PSO reviews and records the information along with that from other obligated parties. The PSO calculates the financial obligation of each party (based on the total costs of operating the scheme for that period, divided by the proportion of the numbers of batteries each obligated party imports in that period). The PSO then bills each obligated party (e.g. monthly, quarterly etc.).
4. The PSO provides regular information on the batteries imported to the Ministry for the Environment who then periodically check this information against data from Customs or other agencies and audit each obligated parties' declarations.
5. The importers/obligated parties sell the products, and they move through the value chain (noting there may be multiple owners) as normal, until they reach end-of-use or end-of-life.
6. At end-of-use (where they may be, for example, removed from a vehicle and repurposed in another application such as in stationary storage), The accredited 'second life re-purposer' records details about the battery and provides this to the PSO. If applicable, they may also make a claim for payments for the handling and upgrading of the battery.
7. At end of use (where there is no further economic value) an accredited recycler will accept the battery at no cost to the owner. The recycler records details about the battery and provides these to the PSO. The PSO then makes appropriate payments to the recycler to cover the net costs of recycling.

## SCHEME DESIGN DETAIL

The table below presents more detail on how aspects of the scheme are proposed to work. Further information on the research informing the proposals below can be found on B.I.G. website: [www.big.org.nz](http://www.big.org.nz)

Aspect	Scheme Design	Comment
Scope	<p><b>'Large' Battery Definition</b></p> <p>'Large' batteries will have a multi-level definition. The first definition level will be by use. For example:</p> <ul style="list-style-type: none"> <li>• Stationary energy storage</li> <li>• Motorcycles</li> <li>• Cars</li> <li>• Vans and Utility vehicles</li> <li>• Recreational vehicles</li> <li>• Trucks</li> <li>• Buses</li> <li>• Forklifts</li> <li>• Aeroplanes etc.</li> </ul> <p>The second definition level could be by practical considerations of handling - e.g. not designed for consumer removal or manual handling, or by weight (e.g. the EU uses a threshold of 4kg).</p>	<p>It's important to have a clear definition to avoid confusion as large batteries are made up of smaller cells, and there is a separate product stewardship scheme proposed for other small batteries such as from laptops, toys, scooters etc.</p> <p>No single definition is likely to provide sufficient clarity or alignment with what happens in practice.</p> <p>A definition with 'use' as the first level is likely to be intuitive and provide some alignment with data likely to be available (such as Customs tariff codes).</p> <p>A second level definition, for example by ease of handling, would provide a practical test that could be applied on a product-by-product basis.</p>
	<p><b>Chemistries Included</b></p> <p>For the purposes of the scheme all chemistries will be assumed to be included unless</p>	<p>Battery chemistries are continually evolving, so a 'positive' definition that attempts to</p>

	<p>specifically exempt. Proposed exemptions include:</p> <ul style="list-style-type: none"> <li>• Lead acid</li> <li>• Flow batteries</li> <li>• Nickel Cadmium</li> </ul>	<p>define what is included risks becoming out of date quickly.</p> <p>Criteria for exemptions will need to be determined, but these may include where there is no market failure at end of life, or where the particular chemistry is not used in large batteries.</p>
	<p><b>Thresholds for Inclusion in Scheme</b></p> <p>Threshold quantities for a party to be obligated under the scheme have yet to be set. Thresholds could include:</p> <ul style="list-style-type: none"> <li>• The number of batteries imported per year</li> <li>• Proof of personal use</li> </ul>	<p>The intent of the threshold will be to allow private individuals bringing in batteries for personal use to not have to register with the scheme. However, they would still be liable to pay any applicable fees.</p>
<b>Governance &amp; Management</b>	<p><b>Governance</b></p> <p>The scheme would be owned by a single not-for-profit 'product stewardship organisation' (PSO). This PSO would be responsible for overseeing the scheme and reporting to central Government.</p> <p>The product stewardship organisation would be governed by a board of trustees or directors.</p> <p>Independent advisory and/or technical groups could be established to provide relevant industry or technical input to the board.</p>	<p>The guidelines require the scheme to be owned by a not-for profit-entity.</p> <p>To avoid conflicts of interest the trustees or directors (or any entities they represent) would need to not receive benefit from the decisions of the product stewardship organisation.</p> <p>Independent groups would help ensure that stakeholders have a channel for input to the scheme.</p>
	<p><b>Management</b></p> <p>The product stewardship organisation would appoint a 'programme manager' to undertake the day to day running of the scheme. This would likely include scheme registration, data</p>	<p>A separate organisation to run the scheme provides a clear separation of governance and management functions, and also allows for the</p>



	<p>management, invoicing and billing, management of funds, commissioning of research, issuing of contracts for provision of services under the scheme, and/or accreditation of service providers.</p> <p>Services would be delivered through a combination of contracting out, accreditation of suppliers, importers or Original Equipment Manufacturers (OEMs e.g. car manufacturers) taking their own product back, and potentially direct operation of services (for example where there is a market failure to provide required services)</p>	<p>appointment of professional programme managers that may have synergies with other schemes.</p> <p>There is also the possibility of appointing separate entities to undertake the management of funds gathered under the scheme and the processing of data.</p> <p>Contracting out services and/or accrediting services providers under the scheme (e.g. collection points, assessment of batteries, recycling etc.) allows existing organisations active in the space to continue to operate/expand and reduces establishment costs.</p> <p>Allowing/encouraging OEMs to take their own product back is a desirable outcome. It is proposed that OEMs/importers taking back their own product simply become accredited suppliers under the scheme (meaning they are eligible for payments under the scheme).</p>
Recycling and re-use targets	<p>Targets will be based on the annual quantity (tonnage) of large batteries recovered (recycled/reused under the scheme) versus the annual tonnage of large batteries dumped illegally or otherwise attempted to be disposed of outside of the scheme.</p> <p>In addition, a separate target is proposed for the proportion of batteries stockpiled (legacy products) versus the proportion recycled/reused under the scheme.</p> <p>It is proposed that the targets consist of a single rate covering batteries both recycled and those given a second life. Data would also report the split between recycling and second</p>	<p>The key metric for the scheme relates to what happens at end-of-life. Data on illegal disposal (e.g. abandoned cars) is likely to be a reasonable proxy for how the scheme is impacting what happens at end of life.</p> <p>This metric would aim to reflect issues with end of use/end of life markets. If these are not functioning effectively this could result in a stockpiling of batteries/end of life EVs.</p> <p>While second-life applications are desirable from a circular economy perspective, the level of economically and environmentally efficient 2<sup>nd</sup> life activity is unknown at this point, and may vary over time, by battery type, brand etc. A specific second-life target could be</p>

	<p>life but there initially would be no targets for the proportion of the split.</p> <p>It is proposed that the targets set under the scheme apply to the scheme as a whole initially, and there are no individual obligated party targets.</p>	<p>introduced in the future if this becomes clearer.</p> <p>The scheme as proposed makes no distinction between how end-of-life batteries (ELBs) from obligated parties are treated. If an obligated party wishes to take back its own product, the expectation would be that their product has the same targets applied as for the overall scheme.</p>
Responsibility for collection and recovery	<p>As noted above, the programme manager would be responsible for ensure the collection and re-use/recycling of all end-of-life large batteries. This would include:</p> <ul style="list-style-type: none"> <li>• Planning network provision</li> <li>• Setting and monitoring standards for service providers under the scheme</li> <li>• Issuing contracts for service provision</li> <li>• Ensuring appropriate regional coverage</li> <li>• Evolving the scheme to cope with growing numbers of batteries and responding to opportunities to improve outcomes (e.g. circular economy, efficiency)</li> </ul>	<p>The intent is to deliver a consistent, coordinated approach across all service providers as well as regionally. The service will need to grow as the number of ELBs grows. This means it is likely to start small using existing service providers but may respond to market requirements over time (such as consolidating services to take advantage of economies of scale or responding to gaps in service provision).</p>
Ownership and responsibility for large batteries	<p>A large battery is not at its 'end of life' until a decision has been made that it is no longer wanted for the original purpose for which it was intended. Up until that time, the ownership remains with the person who has it in their control.</p> <p>The Product Stewardship Organisation (PSO) becomes responsible for the management of the ELB at the point that it is made available for collection within the programme structure.</p>	<p>It will be important to have clarity over where the ownership, responsibility and risk lies for the ELB once it enters the end-of-life process within the scheme structure.</p>

	<p>The PSO is then responsible for ensuring that this ELB is then collected and processed according to the policies that govern the programme.</p> <p>The ownership of the ELB may change as it passes through the value chain. The ownership of the ELB will be made explicit in any contracts or service level agreements of suppliers to the PSO.</p>	
Data management and reporting	<p>Obligated parties will register with the PSO and provide data to the PSO on the quantity of large batteries they imported/placed on the market in the given time period.</p> <p>Data on imported batteries will also be collected by agencies such as NZ Customs or NZTA. This data would be supplied to the Ministry for the Environment who will use this data to audit the voluntary information supplied to the PSO.</p> <p>Ideally the batteries will be able to be tracked through their life-cycle. The PSO will generate data on batteries collected, repurposed and recycled through its network (from its accredited or contracted suppliers).</p>	<p>Voluntary provision of data that is then audited is likely to be the most effective way of ensuring that the level of detail required to manage the scheme is supplied. There are also legal constraints on who external agencies (such as Customs or NZTA) can provide information to, and the information potentially available from other sources such as Customs, or NZTA is not gathered with the specific needs of a product stewardship scheme in mind. In addition, there are likely to be limits on the ability to alter this. However, the external data would likely be sufficient for the purposes of auditing compliance.</p> <p>Ongoing discussions and negotiations will be required with these external agencies to determine the information that is able to be supplied.</p>



<p>Funding</p>	<p>The costs of operating the scheme would be met by an <i>advanced recycling fee</i>, levied on product imported into NZ. The rate of the fee would be reviewed annually and set based on projected net costs of running the PS Scheme.</p> <p>The fee would be charged to obligated parties by the PSO. It would be up to obligated parties to choose to pass on this charge to consumers.</p> <p>It is proposed that the fee be calculated based on the total capacity of the batteries placed on the market by the obligated party in a given period.</p>	<p>By dividing the current costs of scheme operation into the quantity of large batteries placed on the market, costs in the early years of the scheme will represent only a fraction of the actual end-of-life costs (because large batteries last for 10-20 years, the number of batteries sold each year will be growing faster than the number coming to the end of their life). This will avoid the scheme creating significant barriers to adoption of the EVs or stationary storage applications.</p> <p>Using projected total costs of running the scheme should mean costs are transparent, while enabling practical operation.</p> <p>Charging the obligated party rather than the consumer directly is most consistent with the principle of 'producer responsibility'. Further, because large batteries are imported for a range of purposes (e.g. stationary energy storage, road vehicles, non-road vehicles, replacement parts), billing consumers directly (for example at point of registration), would only capture a portion of the market, meaning multiple systems would be required. A single method of collecting the fees is therefore also preferable in practical terms.</p> <p>Battery capacity is a reasonable proxy for battery size and will be known to importers.</p>
----------------	---	---

Payments to service providers under the scheme	<p>There are likely to be a range of mechanisms employed to effect payments made to service providers. These may include:</p> <ul style="list-style-type: none"> <li>• Flat rate payments based on set schedules (e.g. battery removal by vehicle or battery type, recycling by weight)</li> <li>• Re-imbursement of documented costs (e.g. transport)</li> <li>• Fixed price payments for specific operations.</li> </ul>	<p>Payments to suppliers could take a range of forms depending on the service provided and the agreed commercial relationship.</p> <p>The payments need to be fair to all parties, avoid perverse incentives, and be administratively efficient.</p> <p>It is likely that the payment mechanisms will evolve over time.</p>
Orphan and legacy product	<p>All end-of-life batteries will be managed through the scheme.</p>	<p>Because the scheme levies fees based on market share of current product but pays for batteries entering end of life, regardless of their provenance, the way the scheme is designed means there will be no legacy or 'orphan' product.</p>
Modulated fees based on eco-design	<p>The fees charged to obligated parties would initially be modulated according to the following criteria:</p> <ul style="list-style-type: none"> <li>• Broad battery chemistry type (e.g. Li-ion, nickel-metal hydride / NiMH)</li> <li>• Warranted battery life</li> </ul> <p>The fee modulation would be designed to reward/encourage manufacturers for good environmental design.</p> <p>The level of modulation has not been determined.</p>	<p>The guidelines require fee modulation, and stakeholder research suggested broad support for the concept.</p> <p>However, there is a lack of reliable data and information on characteristics of specific batteries and how they may affect environmental outcomes. Therefore, it is proposed to start with simple, measurable metrics and develop further modulations over time as they become practical.</p> <p>Broad battery chemistries will reflect costs and issues in handling and recovery, while warranted battery life is an indicator for how long the battery is expected to last (i.e. delaying when it reaches end of life).</p>

<p><b>Compliance &amp; Standards</b></p>	<p>The Product Stewardship Organisation (PSO) would be responsible for ensuring compliance of each obligated party with the scheme requirements.</p> <p>The PSO would also set/nominate required standards for suppliers to the scheme and have processes in place to audit and ensure compliance with these. This includes standards for safe handling and storage of end of life batteries</p>	<p>Enforcement action by the PSO would be limited to loss of accreditation under the scheme (and hence the ability to place obligated product on the market), or removal as a supplier under the scheme.</p> <p>Compliance action for offences under S40 the WMA would be the responsibility of the Ministry for the Environment.</p> <p>As part of this project the B.I.G. has developed safety and logistics guidelines for large end of life batteries. These are available from the B.I.G. website: <a href="https://big.org.nz/">https://big.org.nz/</a>.</p>
<p><b>Public awareness, research and market development</b></p>	<p>The PSO would be responsible for coordination and delivery of these functions on behalf of obligated parties.</p>	<p>These functions are included as targets that the PSO would be required to report to the Ministry for the Environment on.</p> <p>These are vital functions to the effective operation of the scheme. Consumer research to date indicated that consumers require:</p> <ul style="list-style-type: none"> <li>• A clear, convenient way for them to dispose of their end-of-life batteries (either in a vehicle or separately), that they are confident will manage the batteries responsibly</li> <li>• Easy to access, reliable information (ideally from official sources) on what to do and where to go</li> <li>• No cost for doing the right thing. Some support for offering a bounty to recycle batteries.</li> </ul>





## FREQUENTLY ASKED QUESTIONS:

### How will I know if this scheme will apply to me?

Obligated parties will be organisations or individuals that place large batteries (as defined) onto the market in NZ or import them for their own use.

The product stewardship organisation (PSO) will be responsible for identifying all of the potentially obligated parties and ensuring they are aware of their obligations under the scheme.

### How much will the scheme add to the cost of batteries?

The cost that is added to batteries will depend on the cost of recycling all batteries that reach end of life in a given year divided by the number of batteries imported/placed on the market in that year.

The cost will therefore vary over time. Because the number of batteries reaching end of life will, for a long time, be less than the numbers imported/placed on the market, the costs added to imported batteries at the start of the scheme will be much lower than the actual cost of recycling them.

Financial modelling undertaken suggests that the likely fees in the first 20 years will be between \$20 and \$260 per large battery. The actual cost will depend on a range of factors such as how fast the adoption of EVs and stationary energy storage is, how long the batteries last, and the size of the batteries.

### This will add costs to EVs, when we should be trying to encourage them. What about internal combustion engine (ICE) vehicles – how come they don't have to be part of a scheme like this?

As noted above, the amounts added in the early years of the scheme should be relatively small, reducing any potential for disincentive.

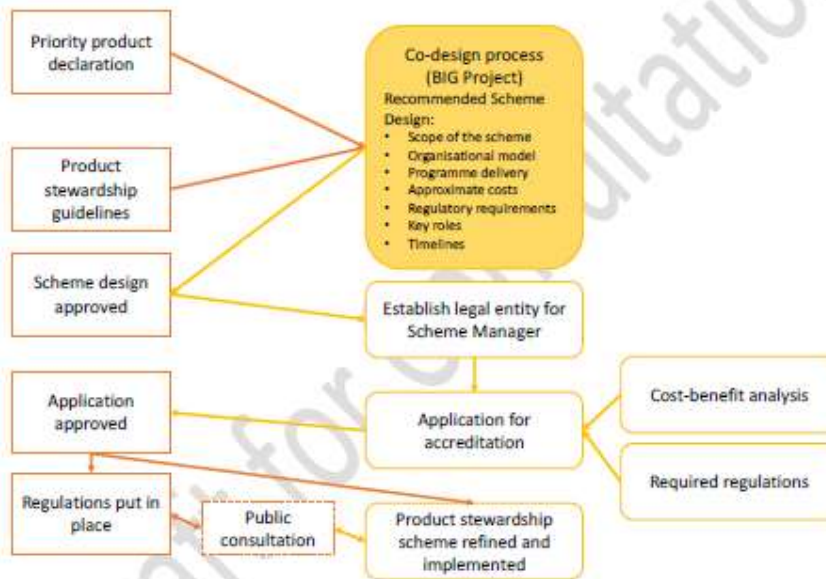
One of the things the proposed scheme design will cover is to highlight any issues and policy or legislation that would be required for the scheme to function well. One issue that may be highlighted is the potential for more wide-ranging End of Life Vehicle (ELV) legislation/regulation to put standards around how ELVs are managed and ensure all types of vehicles are treated equitably.



### When will the scheme start?

The proposed scheme design will be submitted to the Ministry for the Environment (MfE) in April 2021. From there we would expect it would take at least two years before the scheme would start.

MfE will need to decide whether to accept the proposal or make amendments. If they accept the proposals there would need to be regulations drafted and put in place, and a public consultation process undertaken. Then the PSO and all the systems would need to be set up. The diagram below shows some of the key steps in the process:



### How will the scheme work with other product stewardship schemes like e-waste or tyres?

The proposed schemes have some key overlaps (such as the potential to use the same systems or providers), but also a number of differences (such as the life cycle of the products). The project team has worked with, and will continue to work with, the other proposed schemes to ensure things like definitions and data collection align, and there is potential for the schemes to take advantage of efficiencies or economies of scale.

**What if an 'obligated party' doesn't join the scheme or pay the required fees?**

If regulation is passed under section 22(a) of the Waste Minimisation Act, then the sale of a large battery would not be allowed except in accordance with an accredited product stewardship scheme. Failure to comply could result in a fine of up to \$100,000.

**HAVE YOUR SAY!**

**LARGE BATTERY SCHEME DESIGN - RESPONSE FORM**

We invite you to provide your feedback to help shape the proposed scheme design. Your feedback is very important to ensure the scheme is practical and works well for all stakeholders.

Please use this online feedback form which can also be accessed via the B.I.G. website: <https://tinyurl.com/feedbackonbatteryscheme>

Thank you for reading through this draft Scheme design. Any questions? Visit us at [www.big.org.nz](http://www.big.org.nz) or contact: [sarah@big.org.nz](mailto:sarah@big.org.nz)

END

## A.3.0 Stakeholder Meeting Slide Deck

---



1



2

## Overview

3



4

## Governance Structure



5

Why we need a *circular product*  
stewardship scheme for large batteries

**BIG** The Battery Industry Group



6

## Scheme Benefits



- Front foot sustainability and commercial challenge of waste batteries
- Front-foot regulation
- Industry buy-in

7

## Process so far & next steps



8

## DRAFT SCHEME DESIGN

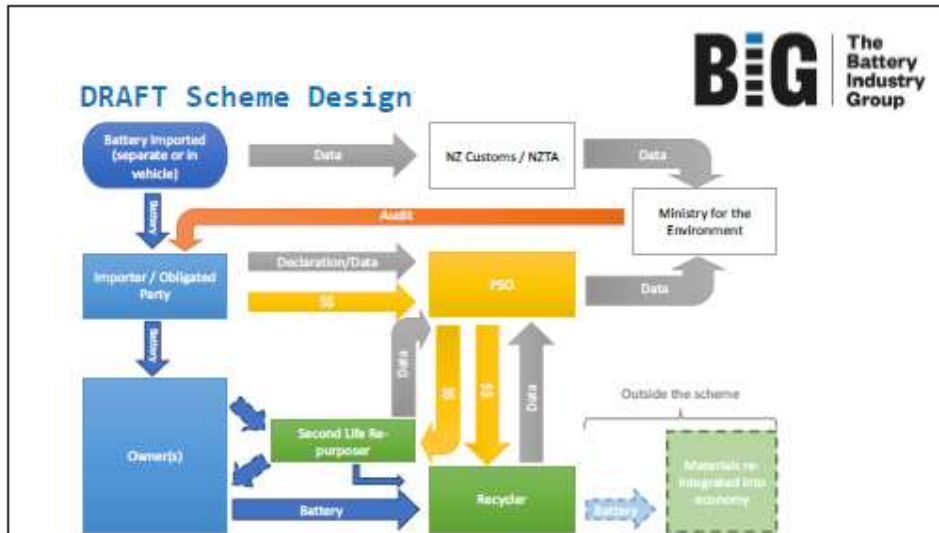
9

### DRAFT Scheme Design

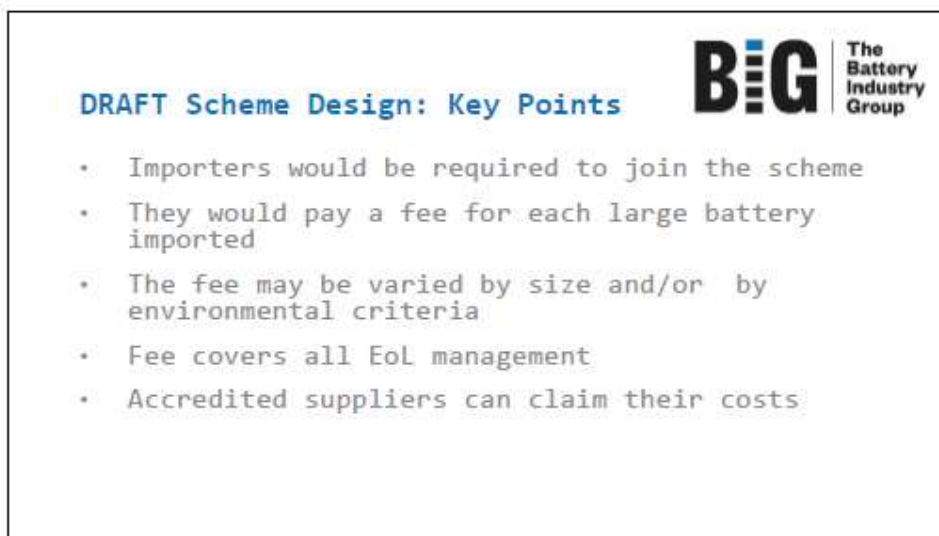
- Large batteries are 'priority product'
- Requirements under the Waste Minimisation Act
- MfE Guidelines for priority product schemes
- Stakeholder input
- Terminology
  - PSO
  - Programme manager

10





11



12



### Key Issues



- Who is obligated?
- How the fee should be collected?
- What it might cost?
- Fee modulation
- Links with other schemes (Tyres, e-waste, refrigerant gases)

13

### Key Issues (BUG)



- What will it cost (& who pays)
- Who owns the battery
- Responsibility for collection and recovery
- Public awareness
- Links with other schemes (Tyres, e-waste, refrigerant gases)

14

### Key Issues (S&L)

- Who owns the battery
- Responsibility for collection and recovery
- Compliance & standards
- Links with other schemes (Tyres, e-waste, refrigerant gases)

15

### Key Issues (BIH)

- Data management
- Fee modulation
- Targets
- Links with other schemes (Tyres, e-waste, refrigerant gases)

16

### Key Issues (BIG)



- Who is obligated
- How the fee should be collected?
- What it might cost?
- Responsibility for recovery
- Payments to service providers
- Links with other schemes (Tyres, e-waste, refrigerant gases)

17

### Key Issues (WasteMINZ)



- What will it cost (& who pays)
- Responsibility for collection and recovery
- Who owns the battery
- Payments to service providers
- Targets
- Links with other schemes (Tyres, e-waste, refrigerant gases)

18

## Who is Obligated?

- Yet to be formally defined
- Anyone who imports a battery that meets the definition of a 'large battery'
- What about where the importer is not the owner?
  - Importer obligated and passes on charges
  - Owner obligated (how to identify)
- Thresholds

19

## How to Collect the Fee (and data)?

### Customs

- Obligated under WMA but not set up to assess; tariff codes not precise

### Registration

- Good for EVs; similar process to tyres; Can't cover spares, energy storage, non-land transport; 'consumer responsibility' not circular economy, fee modulation limited impact

### Voluntary declarations

- One process; links with 'battery passport'; enabled under the WMA; more future proof; new process; data quality?

20

## What Will it Cost?

- Current costs of recovery will be divided into the current numbers of obligated batteries imported
- As numbers imported are expected to grow much faster than those reaching end of life, costs will be low for a long time
- Modelling suggests \$20 and \$260 per battery over the next 20 years
- Admin costs of the scheme 1.4% - 16%

21

## What Will it Cost?



22

### Who owns the battery



- During use the ownership model is as normal
- The *ownership* of an ELB may change as it passes through the value chain
- In general when it enters end of life, the accredited recycler or second life repurposer would *own* the battery
- PSO effectively has *responsibility* for the battery once it enters the programme

23

### Responsibility for Recovery



- The Programme Manager is responsible for ensuring that the right services and facilities are in place
- In the first instance this is likely to be existing operators that are accredited/contracted by the scheme
- The idea is that the scheme will evolve over time to ensure adequate service provision and efficiency

24

## Public Awareness, Research etc



- The PSO is responsible for coordinating and delivery of these functions
- Will have to have targets and measures as part of reporting to MfE:
  - e. new product and market development to accommodate collected materials; and
  - f. measures for public awareness of scheme participant satisfaction and a record of response by the scheme to concerns raised.

25

## Compliance & Standards



- The PSO is responsible for ensuring compliance of obligated parties
- PSO would set standards for suppliers to the scheme
- Processes in place to audit and ensure compliance incl safe storage and handling
- Enforcement will be limited to loss of registration (ability to place product on market) or loss of contract/accreditation for suppliers
- MfE responsible for offences under S40
- All the usual H&S and trading standards etc. apply

26

## Payments to Service Providers



- Service providers either accredited under the scheme or contracted
- If they perform a task in accordance with the scheme they may be eligible for payment
- The specific tasks will have to be defined – likely to include testing, battery removal, storage and transport, recycling etc
- Specific battery logged into system and tracked
- Payments could be by schedules, reimbursement for documented costs, fixed price for bulk services etc.

27

## Data Management



- The whole scheme stand or falls on data
- Ideally track batteries through the value chain, but minimum through the EoL process
- At this stage PSO has no legal ability to require data (review of WMA?). Therefore voluntary
- MfE can get customs data. May be able to get other agency data (e.g. NZTA) for auditing
- Data to identify battery but also to base charges on

28



## Fee Modulation



- Fee modulation can vary the fees to incentivise desired attributes – e.g. sustainability
- MfE Guidelines require fee modulation on recyclability/reuse
- But this is likely to be too difficult to assess and measure in practice beyond simple metrics e.g.
  - Broad battery chemistry
  - Warranted battery life

29

## Targets



- Range of performance targets prescribed by MfE Guidelines. Trickiest is how to measure recycling and reuse rates. What is the denominator?
- Proposed: Batteries recovered vs total batteries at EoL. Need to know those not captured by scheme. Propose use illegal dumping data
- Proposed: Batteries stockpiled. (i.e. collected but not yet recycled or reused.)
- No reuse targets proposed at this stage
- Scheme level targets only. Actual targets rates will be set in application. Probably low to start.

30

## Links With Other Schemes



- Have engaged with Tyrewise and Techcollect
- Very conscious of potential overlaps, gaps, and opportunities to align and work together
- Potential for joining with other schemes, separate schemes but same 'programme manager', sharing systems etc. MfE will have key role in decision

31

## Questions?



32

### Further Info



- [www.big.org.nz](http://www.big.org.nz)
- Draft scheme:
- <https://tinyurl.com/BIGdraftscheme>
- Feedback form:  
<https://tinyurl.com/feedbackonbatteryscheme>
- Duncan Wilson: 021 855578, [duncan@eunomia.co.nz](mailto:duncan@eunomia.co.nz)
- Sarah Pritchett: 021 082 54606 [sarah@big.org.nz](mailto:sarah@big.org.nz)

33



Thank you \* Kia Ora

34

## A.4.0 Stakeholder Consultation Q&A

---

**From Alvin Piadasa : Apologies if this has been talked about previously but is there a timeline for such a scheme to be launched? Did we do any stock and flow analysis to identify the amount of waste arising that would provide the threshold for such a scheme to operate?**

Answer: 2 years from the time priority product announced and 3 years to be operational.

There is no threshold in the PP declaration but modelling was done as part of the research for the scheme.

**From Jayesh Boban : How will the batteries be classified ? Would it be by size? Also what are the standards for accreditation? Is there a minimum kWh capacity that an importer need to bring in to be part of this model?**

Battery definitions are contained in the proposed scheme design. The same definitions will be used by the large battery scheme and e-waste scheme. The first filter will be by battery use

Duncan – that could be could be part of the recommendation where if the EU for e.g. has a good eco design standard it could be written in to it to influence better design. Modulation of fees etc.

**Jeska: Where can I find information on the % of material that can't be recycled and may be disposed to landfill in New Zealand? Also, will there be any stakeholder consultation on the environmental standards for accredited operators/contractors. Many thanks!**

None at the moment but 95% should be able to be recovered in Australia. Work being done on removing barriers to exporting batteries there i.e. trials. Also some businesses in NZ looking into setting up pre-processing in NZ. From a product stewardship [ point of view not to tie scheme to one provider or technology but want to keep it open as to who are providers to the scheme. We may not say this is the scheme recycler unless there was reason to say that was the only one who reached the environmental and H&S criteria or around economies of scale arguments.

The environmental standards maybe be part of the MfE consultation as the scheme goes further through the process.

**Alvin: Are embedded batteries included in the scheme?**

Yes a battery is defined as a battery by itself of within an imported vehicle.

BIH

Peng: Is it possible for the government to provide some sort of undertaking to the PSO as revenue may not be sufficient to cover the total cost?

Duncan: Legal requirement of the scheme to pay for itself not to use public money. THE MATHS DOES WORK BUT IS BASED ON ASSUMPTIONS. Most of the cost in the first few years is in recovery.

**Question re battery size (many times)**

Will have several criteria – maybe weight and also is it practical or possible for the householder to remove the battery themselves? Average weight of battery but we are proposing by KWh. Smaller batteries come under e-waste scheme.

**Question regarding tracking and ID of batteries (several times)**

BIH video with their innovation that will address this will be launched soon

RFID tags. Serial numbers.

**JD Rayner also mentioned bus batteries not lasting as long as thought due to buses trying to get rid of weight and the newer batteries are lighter.**

Phil: Worth mentioning used vehicles as not many other countries consumer used vehicles to the extent NZ does. But Australia has reprocessing of batteries available so they may look to NZ for a model when they start increasing EV fleets.

**Has consenting been included in scheme? I.e. re-use or use of batteries in stationary energy storage?**

**Jeff Seadon: What happens to the so-called profit from batteries that are not returned? You mentioned them being left on farm or back of shed.**

No profit – costs of operating the scheme would be divided into the batteries coming in so the costs would vary end to end in reality making forecasts for each of those numbers so you avoid time lags and so on. Number of batteries imported for next year and come up with a figure. Scheme effectively covers itself but no profit.

**Jeff: So the price will go up and down every year?**

Duncan - yes but unless numbers alter drastically price wouldn't go up and down too much.

**Jeff: How about 2<sup>nd</sup> life batteries or even virgin batteries - are any exported?**

Duncan – yes they are. Some EVs exported to the Islands and also people in NZ boat builders who imported batteries that go overseas to customers. Way to handle this is they pay the fee on the import as per usual but then be eligible for a rebate part or flat fee when they show proof of export.

**Jeff – Pacific Islands difficulties is dumping ground and no way out. Would it be possible for this scheme to cover those things that go offshore – money not necessarily come here but ensure there is a process to manage them there?**

Juhi – Can't speak for Vector but while I was there they had a number of battery and solar projects in the Islands and had a consideration how to include those batteries in a regional circular economy approach that could include Australia and the Islands- appreciating you are talking about exporting to the islands. There are already initiatives underway to get

batteries off the islands for recycling and setting up a recycling plant in Fiji. Have taken a regional approach on this.

Duncan – yes that has come up and we have thought of it, but it is not considered in scope due to the AWAM applying to NZ and territories only. Haven't looked at whether you could include Islands or not but to extend the legislative reach of the scheme. But we need to be aware of that issue and put forward in our recommendations.

**Nadine – what role do you see if any for TAs especially in terms of infrastructure.**

Duncan No specific role. Key will be who are service providers so if TAs involved in setting up battery assessment centre or part of resource recovery centre and want to include large batteries as part of that then potential for them to become an accredited provider to the scheme,. But no specific role – apart from providing data on abandoned vehicles!

**Donna - any global Best practice in battery PS that we can learn from?**

Duncan yep that was one of the first things we did was look overseas. Certainly around batteries as a whole, most other jurisdictions batteries are part of e-waste scheme not by themselves and large batteries tend to have a different value chain. We looked at Europe, USA and Australia who are leading in these processes, so we have picked up things from these. Also working with TechCollect, who are designing the e-waste scheme and who operates out of Australia.

For WasteMINZ group one of big things we would like to hear back about is anyway involved in end-of-life collection of things if any particular practical things that the scheme may not work for and have more detail on how it may work that would be great. Scheme needs to work in practise so need to hear about use cases where it may not fit.

**Focus on imported batteries is there anything for domestic production?**

Duncan only batteries produced locally are put together from imported product and also if you are an importer or manufacturer you are regarded as an obligated party. So local manufacturers would be included.

**16% a bit steep can be trouble shooted by AI and bots. Companies may set up on own**

16% is early days when not so many batteries. It goes down over time so not a real reflection of the scheme. Down to 3% a reasonable figure which is pretty standard.

**Input output – treat it like a carpark, in and out model max no of batteries allowed in and par levels like a warehouse that will determine minimum maximum limits**

One of the questions that has come up is about exported batteries ie evs exported to Islands so under scheme you would be obligated under import and then that fee could be claimed back etc. Who claims it back is a key question to be worked though. Also tracking through life cycle – BIH announcement coming up.

**How are batteries supplied with EV buses and cars – purchase price of vehicle?**

Yes, so buses and heavy vehicles doesn't; matter, all the same, up to the importer or OEM as to how they recover costs of the scheme. Up to them how they try to recover the costs. Idea is that if you modulate the fee it gives OEM the chance to reduce those costs so lower cost

for warranted battery life so if it has a long lifespan it has a lower cost. Try to give manufacturers way to reduce that fee in line with lower costs imposed on the scheme.

### **Faulty batteries, battery call backs will there be block chain track and tracing?**

Refer BIH

### **Iwi consultation?**

We did make several attempts with two different iwi and a national organisation, but nothing came of them in the end and it is something we have raised and will continue to raise with MfE that there needs to be a process to enable this as all the priority products are struggling with how to bring iwi in when it is a national scheme

### **Circular principles?**

Yes, a very circular model, repurposing is built into the scheme and encouraged and aim is to influence battery design. Fee modulation etc to encourage eco design. This is being looked at by the WEF and it may become a model for others.

### **Future proof it**

Other batteries not yet invited to be allowed for.

### **2<sup>nd</sup> life scenario and fee refund**

Importer using them then addressed through fee modulation or claiming back the fee when battery enters 2<sup>nd</sup> life.

### **Tracking private imports**

Declared and picked up via customs. Don't need to be registered participant but pay a fee. Not defined system but would be worked out.

### **Used imports challenges – battery 10 years but vehicle 6 years old,**

Warranty is for battery and fee modulation rather than vehicle life

### **Suggest reduced tariff when recycling method in place already**

Yes definitely either via fee modulation or claiming fee back.

### **Lump sum seems steep - annual user charges more manageable?**

First 20 years of scheme costs would be low. \$20 to \$260 across first 20 years. Main driver of cost is number of batteries coming in.

### **Current generation of batteries many modules etc removed and replaced. Whole battery or modules**

Fee on KW rather than module or battery.

### **No fee proposed when owner hands battery to recycler?**

One option is that payment back to owner. Tricky area, open to thoughts and input on. At moment batteries have some value for 2<sup>nd</sup> hand market. Don't know what demand for 2ndlife battery will look like but value for battery for quite low levels of state of health. So don't want to get in way of that. Payment back to user or owner would be to avoid illegal dumping etc.. Proposal not to do that and potentially illegal dumping levels not make sense

to do that. if you get payment at end of life has to be loaded on to start which makes scheme more expensive and complicated So keen to avoid unless necessary. Under legislation it is required for owners to dispose of batteries at EOL.

**Hybrid batteries included, power tool batteries are not but will be in e-waste.**



## A.5.0 AA Member Survey

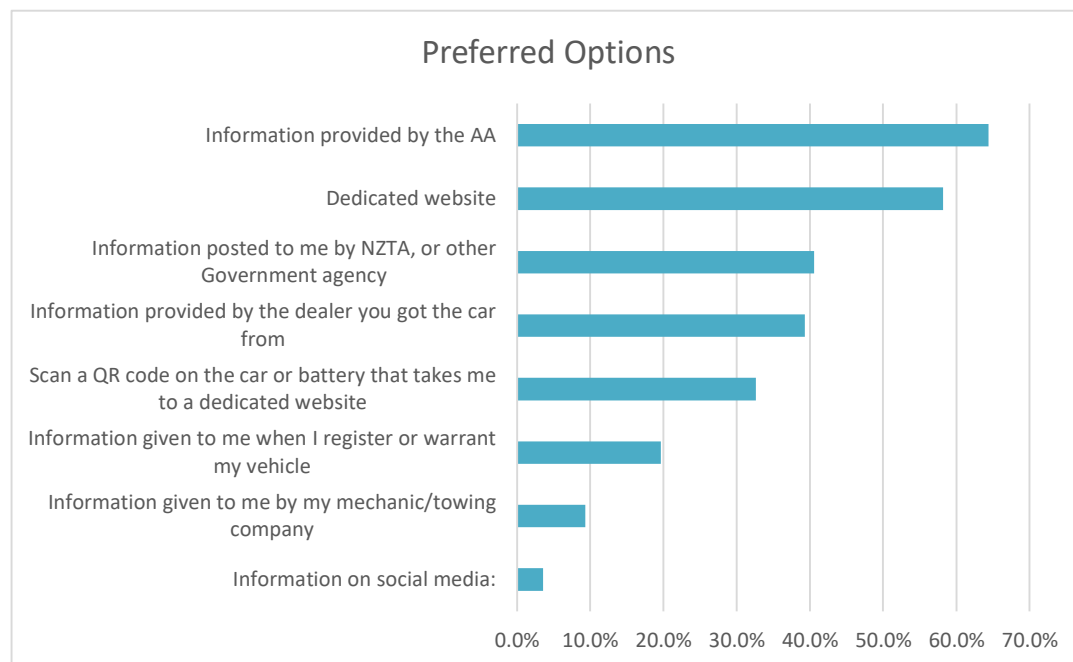
The NZ Automobile Association (AA) undertakes regular surveys of its membership. A web-based survey of AA Members about their views on electric vehicles was conducted in March 2021. The Battery User Group (B.U.G.) was able to have four questions included in this survey regarding AA member views of what happens at the end of life for EV batteries.

The survey received 1,703 responses in total. Of these 1,415 people answered the questions relating to end of life EV batteries.

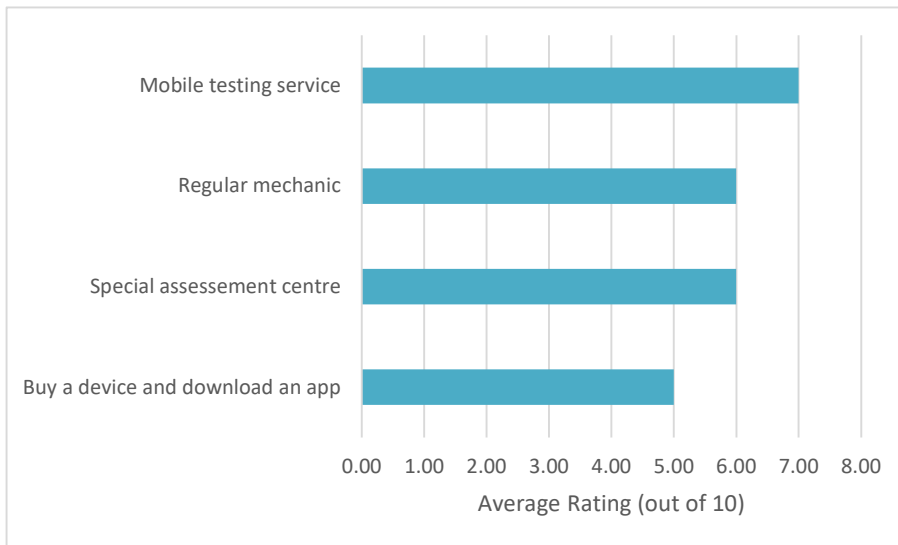
The questions and the responses received are presented below. The results have been adjusted slightly to account for the age and sex profile of the respondents.

### A.5.1 Survey Responses

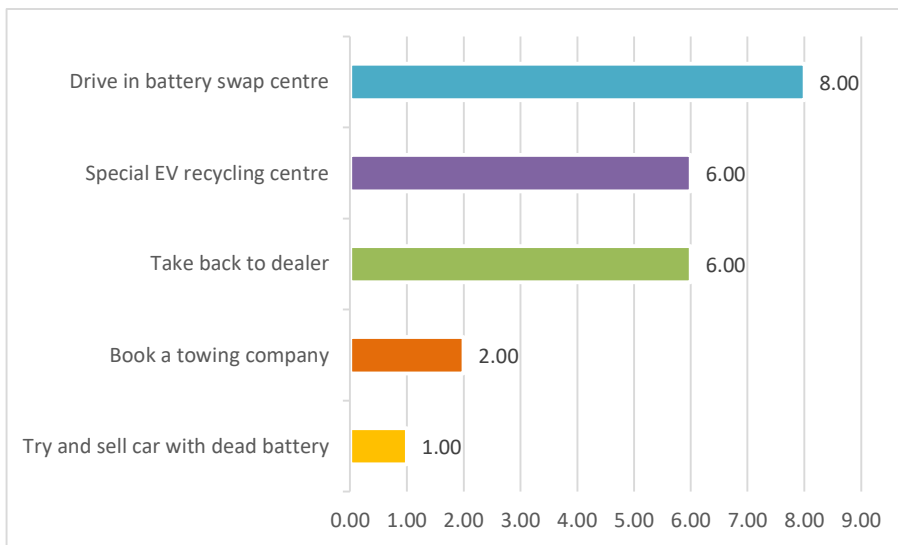
*9. If you ended up with an EV that you think has a dead battery (i.e. one you couldn't sell), what would be the best sources of information find out what to do with it? Please choose the top 3 most useful options from the following:*



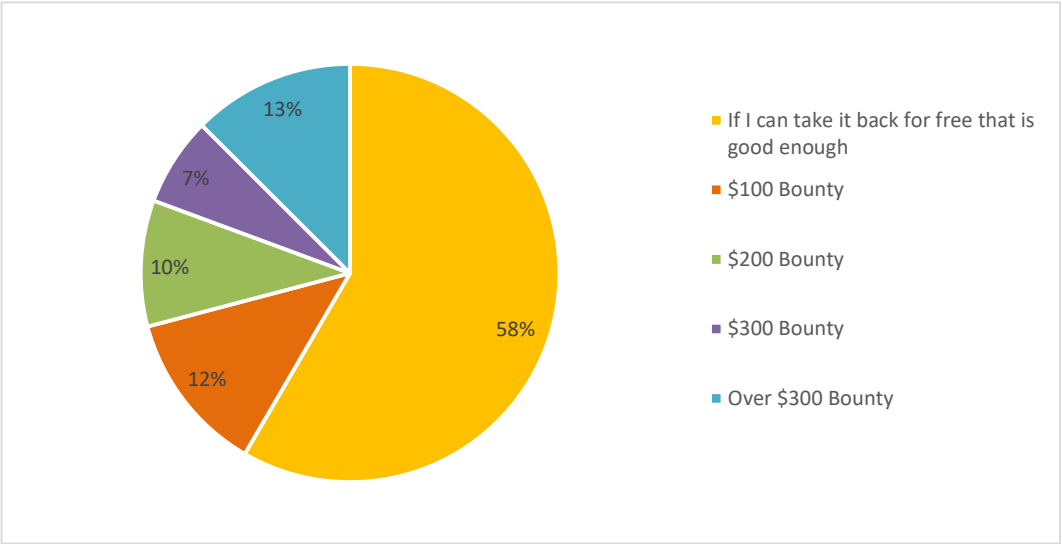
*10. If you want to find out whether your EV battery has reached the end of its life, which of the following services do you think would be most useful? Please rate each option.*



**11. If your EV has a dead battery, which of the following options would be most useful? Please rate the following options:**



**12. Under a 'product stewardship' scheme, it must be free to consumers to recycle the EV battery. To help stop EVs with dead batteries getting dumped, there could be a refund or 'bounty' for bringing an EV with a dead battery back to an accredited recycler. What do you think would work best (bear in mind a bounty might mean the car costs that much more when you buy it)?**



## A.6.0 Stakeholder Submissions on Proposed Scheme

---

### A.6.1 Respondents

24 submissions were received from stakeholders on the scheme design. The organisations/individuals responding are shown in the table below:

Name	Organisation
Alex de Boer	Electric MV
Kit Wilkerson	Vehicle Industry Association (VIA)
David Crawford	Motor Industry Association (MIA)
Elizabeth Yeaman, Jeremy Ward, Fraser Foote	Wellington Electric Boat Building Company Ltd and East By West Ferries
Mark Henderson	Snowberry New Zealand Ltd
Anthony MacLean	Boost Auto
Peng Cao	The University of Auckland
Alvin Piadasa	TES-AMM Group
Jeska McHugh	Environment Canterbury (staff level feedback)
Bruce Currie	New Zealand Transport Agency
James Fuller	WDC
Buddhika Rajapakse	Mercury NZ Limited
Karen Driver	Zero Waste Network
Greg Nelson	Auckland Transport
Leigh McKenzie	Dunedin City Council
Danielle Kennedy	Individual - EV and Household Solar PV owner
Kate Linzey	The Architectural Centre
Gordon John Palmer Lidgard	New Zealand Motorcycle Rentals & Tours

<b>Terry M Hall</b>	Private Citizen
<b>Allan McDougall</b>	self
<b>Nadine Wakim, Alex Kirkham, Sarah Le Claire, Mike Harvey</b>	Waste Solutions, Auckland Council; Chief Sustainability Office, Auckland Council
<b>Greig Epps</b>	Motor Trade Association (Inc)

(Note: in addition, two anonymous responses were received)

## A.6.2 Analysis

Only one respondent was opposed to the establishment of a product stewardship scheme for large batteries. Their view is that the batteries will have value at end of life and that it should be left to the market to provide the solution. They feel that a product stewardship scheme would only add an administrative and cost burden.

All other submissions were broadly supportive of the proposed scheme design. There were, however, a range of concerns raised in the submissions. The majority of these concerns arose from an incomplete understanding of what was proposed. In a number of instances, the project team was able to discuss the concerns with the relevant parties and clear up any misunderstanding (Notably, MIA, VIA, Zero Waste Network, and Auckland Council).

A number of constructive suggestions were put forward by respondents that have been incorporated into the final proposed scheme design. These include:

- Identification of the export of large batteries, in particular to the Pacific Islands. Provisions relating to export are now included.
- The arrival into NZ of end of use/end of life batteries from ships, as part of refit/resupply activities. As these are coming in effectively as 'waste' rather than product they are not subject to the usual Customs processes.
- Clarification that payment of the advance recycling fee on a battery is the point at which compliance with the scheme is deemed to occur. If the fee is paid in advance of import, this would enable a 'certificate of compliance' to be issued which can then be sited during either the Customs or vehicle inspection processes.
- A schedule of fees will be developed and reviewed annually to enable obligated parties to calculate their potential liability and make appropriate provision.

Finally, there were a number of areas where submissions were made which were not taken into account in the scheme design. The key areas are noted in the table below, alongside the reasons why the proposed approach was not included in the proposed scheme design.

<b>Alternative View</b>	<b>Response</b>
How the advance disposal fee is administered. A number of parties (most notably the MIA and MTA) expressed a	The administration of the fee is one of the key areas of the scheme design, and it is anticipated that further work will be

<p>preference for the advance disposal fee to be applied at the point of import/assessment and be administered by New Zealand Transport Agency through on road costs, or at point of entry (Customs). The stated reasons for this preference were:</p> <ul style="list-style-type: none"> <li>• That it would reduce the potential for avoidance of the fee</li> <li>• That it would be administratively simpler and less burdensome for the industry</li> <li>• That it would improve transparency to the consumer regarding the end-of-life costs.</li> </ul>	<p>needed before it is finalised. The key reasons for preferring the fee to be paid by the obligated party direct to the PSO include:</p> <ul style="list-style-type: none"> <li>• There are issues (which we understand are still being worked through) with fees being collected by a government agency on behalf of a private organisation.</li> <li>• The proposed process will enable one system to be applied for all large batteries, which should streamline overall administration</li> <li>• The proposed system design puts the obligation for payment on the importer/manufacture rather than directly on the consumer. This is more consistent with the principle of producer responsibility.</li> <li>• The proposed process is able use fee modulation to provide meaningful incentive to OEMs to address product design</li> <li>• The proposed process now allows for importers to make declarations and pay the fee prior to clearance by Customs/NZTA which will reduce potential avoidance issues</li> <li>• The proposed process aligns with the intent to use a blockchain based platform to track large batteries through their entire value chain. Batteries could potentially be tracked from manufacture, before their entry to NZ, and through their life and second life cycle on a single system.</li> </ul>
<p>The inclusion of a refundable deposit or 'bounty' (i.e. a sum payable to consumers on surrendering an end of life battery) was supported by a number of parties. It was felt that this would help reduce incidence of illegal dumping.</p>	<ul style="list-style-type: none"> <li>• There are difficulties with identifying who the consumer is who should receive the fee</li> <li>• Charging a refundable deposit on each item would require those funds to be kept for the life of the battery, which is not likely to be</li> </ul>

	<p>economically efficient, and would increase administration</p> <ul style="list-style-type: none"> <li>There was not widespread support for this from consumers (the AA survey found 58% of respondents did not support a bounty)</li> <li>It is not clear that there is a problem with illegal dumping/stockpiling of ELBs</li> <li>It is not clear that a bounty or similar would be the most economically efficient means of tackling illegal dumping of ELBs if this were a problem.</li> <li>The proposed scheme design allows for a 'bounty' to be placed on batteries if needed simply by adding this cost to the overall scheme costs and charging this back through advance recycling fee</li> </ul>
<p>The scheme does not currently extend to the export of batteries, in particular the export of batteries to jurisdictions such as the Pacific Islands, that do not necessarily have the infrastructure or systems in place to manage these at end-of-life.</p>	<ul style="list-style-type: none"> <li>There is no provision in the WMA to extend the scheme to the Pacific Islands. Any extension of the scheme would need to be negotiated with the Governments of those nations, and appropriate provisions made within the scheme design.</li> <li>This should be an area for future investigation. Given the lack of infrastructure domestically as well as on the Pacific Islands and their increasing reliance on batteries, a regional approach to product stewardship would make sense if aiming for sustainable and circular outcomes.</li> </ul>
<p>The scheme should include e-bike and other smaller batteries that supply motive power</p>	<ul style="list-style-type: none"> <li>The life cycle and end of life handling requirements of these batteries makes them more similar to small batteries than large batteries and are therefore more sensibly handled alongside small batteries.</li> </ul>

### **A.6.3 Scheme Submissions**

Refer Attachment.



## A.7.0 Governance Options

### A.7.1 Not for Profit Structure

There are two options for a not-for-profit entity for the PSO, which are described below.

#### A.7.1.1 Incorporated Society

An Incorporated Society is generally more structured than a Charitable Trust. It can be incorporated under the Societies Act 1908 and limits the liability of members and will have a set of rules or constitution under which the PSO operates. It:

- has a board of at least five members;
- has a membership of a minimum of 15 individuals or five corporate bodies such as other societies, charitable trusts or companies (each corporate body counts as three individuals), or a mix of both;
- can make profits and employ/contract providers, but may not distribute profits to members; and
- has its income taxed although it may be eligible for a range of tax exemptions.

#### A.7.1.2 Charitable Trust

A Charitable Trust generally enables a greater level of flexibility. It is incorporated under the Charitable Trusts Act 1957 and:

- will have a trust deed under which the PSO operates, and a board of at least two trustees;
- must have charitable aims i.e., not be for private profit;
- can be incorporated so it is a separate legal identity distinct from its members or trustees and therefore limits the liability of trustees; and
- must be registered with Charities Services to obtain or keep charitable tax-exempt status.

The Charities Commission notes the following characteristics of each of these entities:

Things to Consider	Charitable Trust	Incorporated Society
<b>Legislation</b>	- Charitable Trusts Act 1957 - Trusts Act 2019	Incorporated Societies Act 1908
<b>Minimum number of people</b>	One or more trustees (note: we recommend at least three so that there is less change of conflict of interest)	A minimum of 15 members

<b>Decision making</b>	By trustees, in accordance with the trust deed	By members/committee in accordance with the constitution
<b>Members</b>	No members, the trustees operate the trust for the charitable purpose	Membership is determined by the constitution
<b>Liability of members or trustees</b>	No liability unless the trustee does not comply with the trust deed or the Trusts Act 2019*	Limited liability unless members run the society to make profit for themselves (this is not charitable)
<b>Accountability</b>	Trustees are accountable to the public, through the Attorney General, and must comply with the trust deed and the Trusts Act 2019	The committee is accountable to the members
<b>Meetings</b>	Trustees should meet to make decisions in accordance with their trust deed	The members/committee must hold an annual general meeting once a year
<b>Profits</b>	Used to run the charitable trust to achieve its purpose; profits can be accumulated	Used to run the society to achieve its charitable purpose; profits cannot be distributed to members
<b>Winding up</b>	The trust can wind up according to the trust deed, but any money or assets must be left to charitable purposes	The society can wind up but must distribute any money or assets left in accordance with its rules and the Incorporated Societies Act 1908
<b>Advantages</b>	<ul style="list-style-type: none"> <li>- Control is in the hands of a few trustees rather than a wider membership</li> <li>- Trustees usually remain the same so there is some stability around succession</li> </ul>	<ul style="list-style-type: none"> <li>- An easy to manage structure for democratic membership based organisations</li> <li>- There is opportunity for diversity and new voices on the committee each year</li> </ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>- Sometimes the same trustees can remain involved over several years which may have a negative effect on the charity</li> <li>- There should be a consensus in decision making between trustees; trustees disagreeing can result in challenges</li> </ul>	<ul style="list-style-type: none"> <li>- It can be hard to govern a charity that has changing officers as people need to be trained on running the society each year</li> <li>- The democratic structure means that groups can seize control from established leaders</li> </ul>

## A.7.2 Financial Management

One of the options considered is whether advanced recycling fees paid by obligated parties should be held by an independent entity and released to the PSO as required to fulfil operational expenses. This type of arrangement is appropriate where:

1. large pool of funds is being held in expectation of paying future liabilities (i.e. when products reach end-of-life and costs are incurred);
2. there is a need to preserve the commercial confidentiality of transactions; and,
3. there is no accompanying need for visibility of the transactions by the programme manager (e.g. if the calculation of the payments is based on set pricing and/or paid at point of obligation).

Under the proposed set of governance and financial arrangements, there will be no large pool of funds accumulated – the budgets will be set annually, and fees are structured to meet the annual budget requirements as closely as possible. Similarly, while preserving commercial confidentiality is essential, there will be a need for the Programme Manager to have some level of visibility into individual transactions - for example in assessing the application of fee modulation, fee exemptions, or rebates (such as where batteries manufactured onshore or imported are immediately exported).

For these reasons it is not proposed to utilise a separate entity to hold and manage funds.

## A.7.3 Targets

The target of scheme performance, which is explored further here, and for which a metric is proposed is target (b): *“performance against best practice collection and recycling or treatment rates for the same product type in high-performing jurisdictions;”*

There are several key issues:

- How are collection, recycling or treatment rates measured in the jurisdictions where comparisons might be made?
- Are these appropriate and compatible with the scope of the scheme in New Zealand?
- What will be appropriate and possible to measure in New Zealand given the available systems and data?

As noted in the Milestone One report, we were not able to find any other examples of product stewardship schemes of a similar scope to the proposed large battery scheme. Although further research on the measures used in other jurisdictions is appropriate and may be undertaken prior to submission of the application for accreditation, it does not appear, at this time, that there will be any appropriate measures from other schemes that can be used to benchmark performance.

In addition, the target requirement in the Product Stewardship Guidance makes no mention of re-use or second-life, which is considered an integral part of the scheme.

Before targets can be set it is important to understand the metrics that may be used to monitor progress to the targets. In this instance the two issues to determine are: 1) how to measure recycling and re-use; and 2) whether any targets should apply to the scheme as a whole or individual members.

In terms of 1) how to measure recycling or recover rates, any measure that uses the number of batteries recycled/recovered versus those placed on the market is meaningless, as this will depend on the rate of market growth and the life of the batteries on the market. In such an instance, a low rate recovered/recycled might actually be a good thing as it could simply mean batteries are lasting longer.

The best measure might be the numbers recovered/recycled versus dumped illegally/abandoned and landfilled.

The issue with this are:

- Data collection in respect of illegally disposed batteries, or EVs are not consistent
- There will be a 'stock' of cars that are in flux, (e.g. in wreckers yards, peoples properties), or batteries stored by recyclers awaiting shipment or recycling
- Once recovered by a Council, they will presumably be recycled therefore could easily be double counted
- Landfills will not accept Li-ion batteries because of the fire risk, so the only way they would get into landfill is if they are not known to the landfill operator (possible as part of a large mixed load), in which case there would be no data.
- Landfills may accept NiMH or other batteries that don't present a fire risk, but these are mostly likely to be part of other scrap and unlikely to be counted individually
- Anecdotally, vehicle batteries are left in vehicles which are then put through shredders. It is not clear if these include lithium-ion or other chemistries, but there are no records of quantities. This is done without the shredder operator being informed, so there is little opportunity for data to be gathered.

However, while the number of batteries disposed of illegally itself may not be accurate, the measure of illegal dumping is likely to be a reasonable proxy for what is happening.

The other issue which the scheme needs to address is the numbers of batteries stockpiled. This is the first line of response when there is no economic outlet for dead batteries. Batteries stockpiled by accredited services providers can be monitored and reported on. However, gathering regular, reliable information on other stockpiles of batteries may be more problematic, and further work is required to develop this metric.

It is proposed that negotiations be held with the MfE to establish a set of practical targets for the launch of the scheme, and that these be reviewed over time as more data becomes available.

## A.8.0 Import/Export of Large Batteries

---

### A.8.1 The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

The 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention) aims to reduce the amount of waste produced by signatories and regulates the international traffic in hazardous and other wastes.

It requires prior approval of hazardous waste imports and exports and requires exporting countries to ensure that hazardous waste will be managed 'in an environmentally sound manner'. The Convention emphasises the principle of 'generator responsibility' for disposal of wastes and requires parties to minimise the environmental effects of the movement and disposal of hazardous waste.

The Basel Convention was ratified by New Zealand on 20 December 1994 and implemented through the order described in the next section.

In addition, the Basel Convention allows countries to enter into regional agreements with different requirements, provided that the agreements are no less environmentally sound. New Zealand has entered two such regional agreements:

1. The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (**Waigani Convention**), which regulates sending hazardous waste in the South Pacific.
2. Organisation for Economic Co-ordination and Development Decision C(2001)107/FINAL (**OECD Hazardous Waste Decision**), which regulates sending hazardous waste between OECD countries.

### A.8.2 New Zealand's Imports and Exports (Restrictions) Prohibition Order (No 2) 2004

Section 6(2) of this order states that the exportation of hazardous or other waste is prohibited to Basel Party or OECD member countries that have prohibited the importation of such wastes. Exceptions for export to other countries are listed in Section 7 and are to those granted an export permit by the New Zealand Environmental Protection Agency (EPA). Such permits require that the importing country has consented in writing to the receipt of these goods **and** that the common requirements are met. Common requirements (s11(6)) are:

- New Zealand does not have the technical capacity and the necessary facilities, capacity, or suitable disposal sites to dispose of the waste in an environmentally sound and efficient manner

- The waste is required as a raw material and any recycling or recovery industry in the importing State
- The waste is exported in accordance with any criteria decided by the Basel Parties
- The waste can be disposed of or managed in an environmentally sound and efficient manner in the importing State.

### A.8.3 Environmental Protection Agency

As of April 30, 2021, New Zealand will adopt the New Zealand's official hazard classification system based on the 7<sup>th</sup> revised edition of the Globally Harmonised System (GHS 7), replacing the 2001 HSNO classification system. GHS classification is based on:

- Hazard class (nature of the hazard grouped into physical, health or environmental)
- Hazard category; denotes hazard severity with a lower number representing a more severe hazard.

For exact classification, EPA refers to Annex IX of the Basel convention. There, batteries are classified based on the type of metals and whether the battery is part of another device and whether it is destined as reuse, recycling or as waste. The associated categories and current transboundary pre-consented waste permits are listed below:

**Table 5: Battery Classifications and Related Basel Permits (Lead Acid Batteries Excluded)**

Waste Classification	Description	Pre-Consented Organisation	Country
<b>A1170</b>	Unsorted waste batteries	Umicore Retriev Technologies Inc Glencore Canada Corporation – Fonderie Horne Revolution VSC Acquisition GP Inc. (Terrapure BR Inc.) Aurubis AG Wilhelm Raven Euro-Metall GmbH ACCUREC GmbH Nickelhütte Aue GmbH SNAM Overdie Metals B.V. Saft AB	Belgium Canada Canada  Canada  Germany Germany Germany Germany France Netherlands Sweden
<b>A1180</b>	Waste electrical and electronic assemblies or scrap containing components	Overdie Metals B.V. R&L Recycling	Netherlands Netherlands
<b>B1090</b>	Waste batteries conforming to a specification, excluding those made	Umicore NV Aurubis AG SNAM Overdie Metals B.V. KCM AD	Belgium Germany France Netherlands Bulgaria

	with lead, cadmium, or mercury		
<b>B1110</b>	Electrical and electronic assemblies: Waste electrical and electronic assemblies or scrap destined for direct reuse, and not for recycling or final disposal <sup>22</sup>	Overdie Metals B.V. R&L Recycling	Netherlands Netherlands
<b>Source: “OECD Database of Transboundary Movements of Wastes 10 March 2021”</b>			

#### A.8.4 New Zealand Battery Import Permits

Current (March 2021) New Zealand hazardous waste import permits mentioning batteries, other than lead acid batteries, total 6 metric tonnes and are as follows:

**Table 6 New Zealand Battery Import Licenses Issued (as of March 2021)**

Importer	Waste product	Source	Quantity (metric tonnes)	Expiry
<b>Waste Management NZ Ltd</b>	Used unsorted batteries	New Caledonia	1	28/02/2021
<b>Waste Management NZ Ltd</b>	Unsorted waste batteries	New Caledonia	5	29/07/2021
<b>Source: <a href="https://www.epa.govt.nz/industry-areas/hazardous-substances/hazardous-waste/current-permit-holders/">https://www.epa.govt.nz/industry-areas/hazardous-substances/hazardous-waste/current-permit-holders/</a></b>				

Current (March 2021) New Zealand Battery Export Permits (excluding lead acid batteries) totalling 5,500 tonnes are as follows:

**Table 7 New Zealand Export Licenses Issued (as of March 2021)**

Exporter	Waste Product	Destination	Quantity (metric tonnes)	Expiry
<b>E Waste Solutions Limited (T/A Computer Recycling)</b>	Mixed e-waste	Republic of Korea	700	31/03/2021

<sup>22</sup> In some countries these materials destined for direct re-use are not considered wastes

<b>TES-AMM New Zealand Limited</b>	Mixed e-waste	Singapore	1,200	08/07/2021
<b>Abilities Group</b>	Mixed e-waste	Japan	3,000	18/10/2021
<b>Itrecycla Limited</b>	Mixed e-waste	Japan	600	30/09/2022
<b>Source:</b> <a href="https://www.epa.govt.nz/industry-areas/hazardous-substances/hazardous-waste/current-permit-holders/">https://www.epa.govt.nz/industry-areas/hazardous-substances/hazardous-waste/current-permit-holders/</a>				

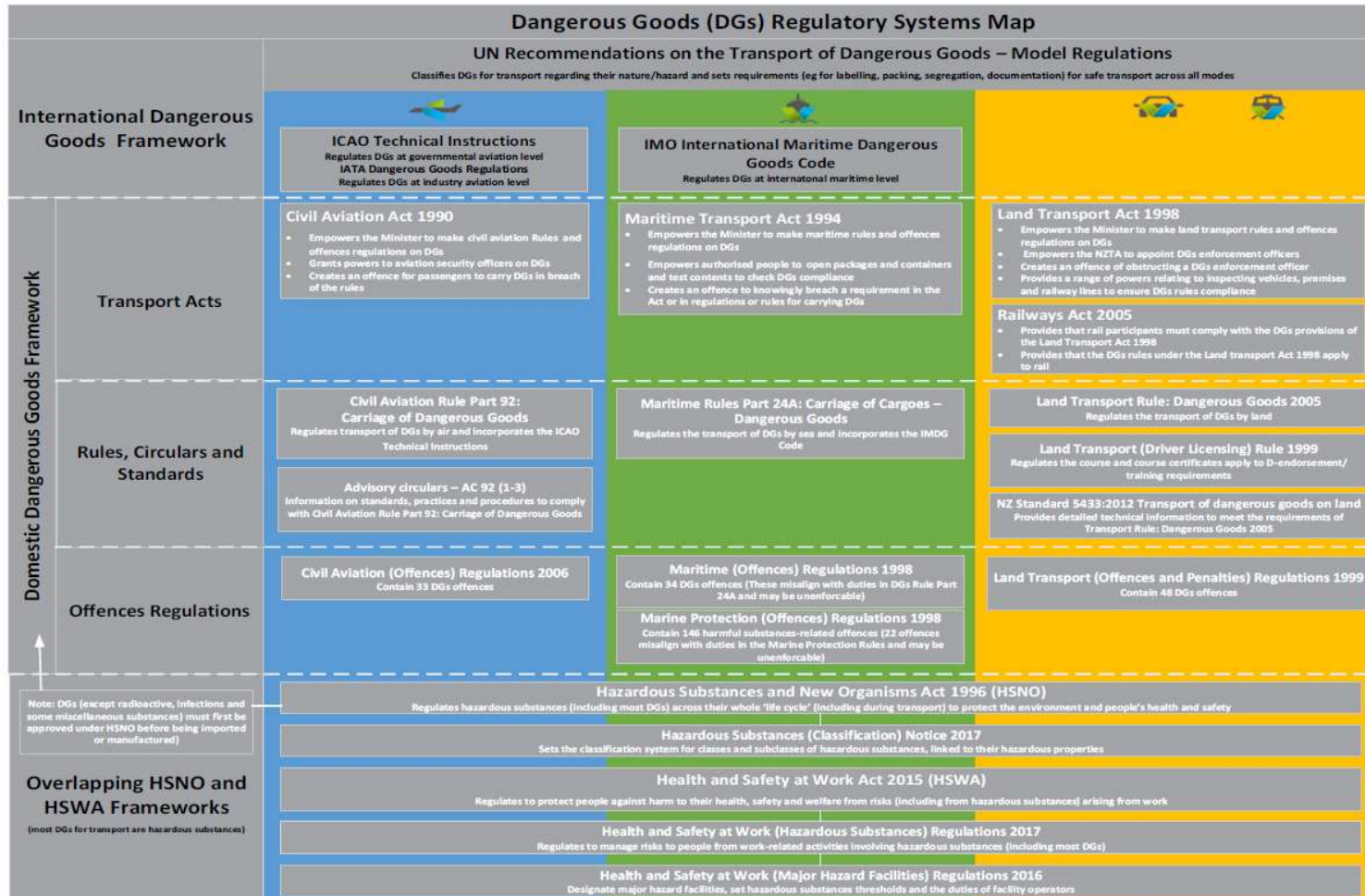
### A.8.5 Shipping of Dangerous Goods from New Zealand

In New Zealand, each mode of transport — aviation, maritime and land, including rail — has its own regulatory framework for managing the national transport of Dangerous Goods. This framework includes primary legislation, regulations, and dedicated rules. The relevant transport regulatory agencies regulate transport of dangerous goods under these modal frameworks.

The Dangerous Goods Regulatory System Map below describes the New Zealand regulatory system for managing dangerous goods across the entire transport system (land, water, and air). The map outlines the key components of the system and helps identify possible issues, overlaps, gaps, and risks. However, the map is not intended to be a comprehensive guide to dangerous goods requirements for industry operators.



Figure 4 Dangerous Goods Regulatory Systems Map Diagram (source: Ministry of Transport, 2020)



### A.8.6 Shipping by Air: Civil Aviation Authority

Some Dangerous Goods can be carried safely by air if they are packed and transported in a specific way. Other articles and substances are prohibited on aircraft due to the risk they pose. Additionally, **airlines may refuse to carry them or impose their own additional requirements.**

The New Zealand Civil Aviation Rules require compliance with the “Technical Instructions of the Safe Transport of Dangerous Goods by Air” as issued by the International Civil Aviation Organization. This document does specifically classify lithium ion and lithium metal batteries as Dangerous Goods.

### A.8.7 Shipping by Water: Maritime New Zealand

Maritime rules 24A sets out how dangerous goods can be transported at sea. Lithium batteries are not specifically mentioned, although lead-acid batteries are<sup>23</sup>. Batteries are permitted when a driver drives a vehicle onto a ship, and if the battery is no larger than 250L (as measured by the volume of the battery case, Schedule 3, Class 8).<sup>24</sup>

Dangerous Goods are classified according to the International Maritime Dangerous Goods Code. Certain Dangerous Goods carried in vehicles for domestic or recreational purposes, are not considered to be dangerous goods freight. However, there are limits to what can be brought on board a vessel in a vehicle for such a purpose. Yet, where dangerous goods are being carried in a vehicle for hire or reward, this is considered to be Dangerous Goods freight. If it is **Dangerous Goods freight for the purposes of road transport (in New Zealand), then it is also Dangerous Goods freight for the purposes of carriage on a vessel.** Therefore, any Dangerous Goods carried in a vehicle are also subject to the requirements of Land Transport Rule: Dangerous Goods (2005).

### A.8.8 Shipping over Land: Waka Kotahi New Zealand Transport Agency

Land Transport Rules in New Zealand, as administered by Waka Kotahi, set out how dangerous goods can be safely transported by land.

New Zealand Standard 5433:2012 provides detailed technical information to meet the requirements of Land Transport Rule: Dangerous Goods 2005. There are 2 parts to the standard that apply to transporting dangerous goods on land that cover the technical

---

<sup>23</sup> <https://www.maritimenz.govt.nz/commercial/ships/cargo-carriage/#dangerous>

<sup>24</sup> <https://www.maritimenz.govt.nz/rules/part-24A/Part24A-maritime-rule.pdf>

requirements such as classification criteria, packaging and what qualifies as a dangerous good.<sup>2526</sup>

---

<sup>25</sup> NZS 5433.1:2012 - Transport of dangerous goods on land - Part 1: Technical information

<sup>26</sup> NZS 5433.2:2012 - Transport of dangerous goods on land - Part 2: List of dangerous goods

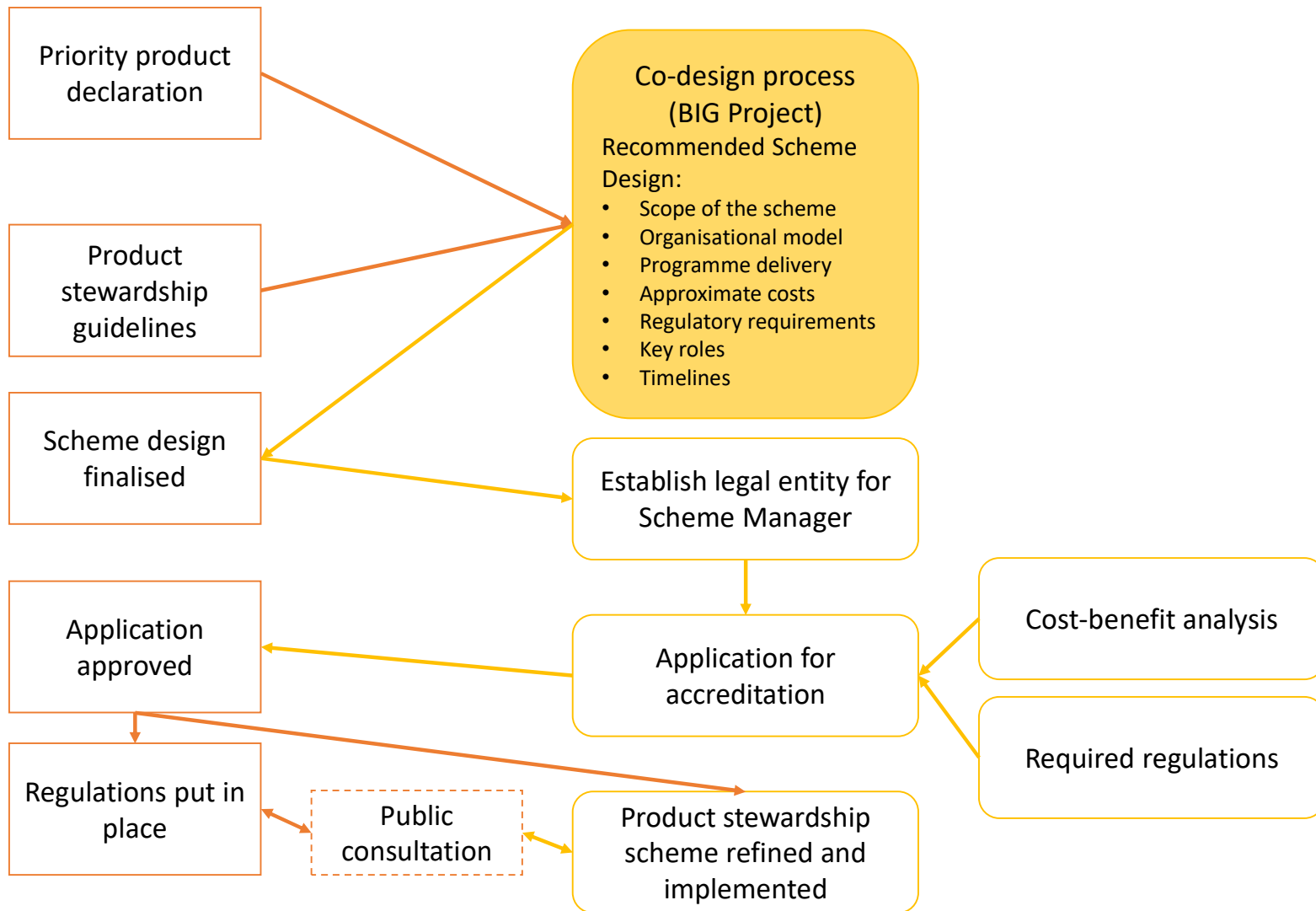
## A.9.0 Product Stewardship Scheme Development Process

---

The chart below outlines the overall product stewardship scheme development process and how the current B.I.G. project fits into this process.

A key take-away is that following the completion of the B.I.G. project there will be a number of further steps that will be required before the recommended product stewardship scheme can be implemented. These include:

- Establishing a legal entity (or entities) to govern and operate the scheme
- Applying for accreditation
- Formal public consultation
- Establishing required regulation.



## A.10.0 Transition Costs

	Research Costs	Other Costs	Total
<b>Scheme Design Approval</b>	\$ -		\$ 1,600.00
Meetings	\$ 800.00		
Supplementary information and clarifications	\$ 800.00		
	\$ -		
<b>Establish legal entity(s) for Scheme</b>	\$ -		\$ 11,060.00
Advice on key functions	\$ 800.00		
Specialist advice on governance models and structures	\$ -	\$ 5,000.00	
Legal advice	\$ -	\$ 5,000.00	
Formal registration fees	\$ -	\$ 260.00	
	\$ -		
<b>Application for Accreditation</b>	\$ -		\$ 9,600.00
Assistance with writing application:	\$ -		
Scheme description	\$ 200.00		
Waste data	\$ 200.00		
Objectives and targets	\$ 200.00		
Counterfactual scenario	\$ 800.00		
Proposals to monitor targets	\$ 200.00		
Groups and participants	\$ 200.00		
Governance structure	\$ 200.00		
Compliance	\$ 200.00		
Reporting	\$ 200.00		
Communications strategy	\$ 200.00		
Funding	\$ 200.00		
International obligations	\$ 200.00		
<i>Life-cycle impact (see LCA below)</i>	\$ -		
Risks	\$ 200.00		
Codes of practice & duty of care	\$ 200.00		
Circular resource use	\$ 200.00		
Internalised end of life costs	\$ 200.00		
public accountability	\$ 800.00		
Collaboration	\$ 800.00		
Scheme operations	\$ 3,200.00		
Targets	\$ 200.00		
Supporting information	\$ 800.00		
	\$ -		
<b>Cost Benefit Analysis/LCA</b>	\$ -		\$ 41,000.00
Determine parameters	\$ 4,000.00		
Gather background data	\$ 6,000.00		
Life cycle inventory databases	\$ 6,000.00		
Adapt NZ models	\$ 4,000.00		
Determine scenarios	\$ 4,000.00		
Run scenarios	\$ 4,000.00		
Reporting	\$ 8,000.00		
Peer review	\$ -	\$ 5,000.00	
	\$ -		
<b>Regulation</b>			\$ 9,600.00
Review recommendations	\$ 4,000.00		
Liaison with MfE	\$ 1,600.00		
Liaison with stakeholders	\$ 4,000.00		
<b>Public Consultation</b>			\$ 16,000.00
Preparation of material for public consultation	\$ 4,000.00		
Attendance at meetings	\$ 4,000.00		
Responses to queries	\$ 4,000.00		
Write up and changes	\$ 4,000.00		
<b>Refine Scheme</b>			\$ 16,000.00
Negotiate and agree changes	\$ 8,000.00		
Write up changes	\$ 8,000.00		
<b>Implementation (2022?)</b>			\$ 338,800.00
Internal processes	\$ 8,000.00		
Processes for identifying obligated parties	\$ 8,000.00		
Contracts	\$ -	\$ 10,000.00	
Procure scheme manager/PRO	\$ 30,000.00		
Roles, position descriptions and recruitment	\$ 8,800.00		
Accreditation processes	\$ 8,000.00		
IT systems	\$ -	\$ 200,000.00	
Invoicing and payments systems	\$ 8,000.00		
Monitoring and reporting	\$ 8,000.00		
Governance		\$ 50,000.00	
<b>Communications</b>			\$ 37,000.00
Designing S&L Guidelines		\$ 2,000.00	
Infographic summary of S&L		\$ 1,000.00	
Clip on scheme design		\$ 1,500.00	
3 minute promo of scheme and group		\$ 1,500.00	
Infographic summary of scheme design		\$ 1,000.00	
Website development		\$ 30,000.00	
<b>TOTAL</b>	<b>\$168,400.00</b>	<b>\$ 312,260.00</b>	<b>\$ 480,660.00</b>

## **A.11.0 Guidelines on the Safe Handling, Transportation Collection, and Storage of Large Used Batteries**

---

Refer Attached document entitled “Guidelines on the Safe Handling, Transportation Collection, and Storage of Large Used Batteries”.

## A.12.0 B.I.G. Members (as at April 2021)

---

### A.12.1 Governance Group

Janine Brinsdon	WasteMINZ
Jonathan Sergel	AA
Basil Issa	EECA
Mark Gilbert	Drive Electric – Chair
Mark Toner	Vector

### A.12.2 Core Delivery Team

Juhi Shareef	THL
Duncan Wilson	Eunomia Research & Consulting
Sarah Pritchett	WasteMINZ

### A.12.3 Advisory Group

Priti Ambani	Tata Consultancy Services (TCS),
Dana Peterson	Ministry for the Environment
David Crawford	MIA
Mark Lloyd	AA
Lauren Roman/Leanne Kemp	Everledger

### A.12.4 Battery Innovation Hub

Aaron Marshall	University of Canterbury
----------------	--------------------------



Al Yates	Ecotricity - Independent Retailers
Alan Chapman	DARC Technologies
Alex Brown	Audi
Andrew Mackenzie	ABRI, Envirostream
Bevan Redpath	Hyundai Motors NZ
Brett Oliver	Astrolab
Bill Alexander	Blue Cars
Buddhika Rajapakse	Mercury
Cain Chapman	Enersys
Chris Carr	Carr & Haslam Limited
Dalong Ye-Lee	Downer
David McMillan	Manawatu District Council
David Vinsen	VIA
David Wyllie	Tonkin + Taylor
Don Chittock	Fulton Hogan
Drew Forsyth	FUSO
Eleanor Briggs	Electric Kiwi
Eric Pyle	Solar City
Gavin Young	Hyundai Motors NZ
Graeme Peters	Electricity Networks Association (ENA)
Glenn Wells	CarTakeBack
Ian Porter	FUSO
Iain Jerrett	Astara Technologies Ltd, SEANZ
Isaac Luoni	Automotive technician

Jackson White	Vector PowerSmart
Jasmine Faulkner	Metalman NZ Ltd
Jason Harvey	Smart Environmental
Jayesh Boban	Panosonic
Jeska McHugh	ECAN
Jim Johnson	Victoria University Wellington
Jim Stefanis	Relectrify
Jingjing Liu	Auckland University
Jo Phillips	Vector/Paymark
John Evans	Itrecycla
John Wilson	Sunshine Solar & YES Power (developing 2nd-life batteries)
Juhi Shareef	THL
Kathy Schluter	FUSO
Kaveh Shahbaz	Auckland University
Kevin Golding	GIB
Lucie Drummond	Mercury
Mark McKanny	Panasonic
Matthias Vest	Callaghan Innovation
Michael Van Der Merwe	Abilities
Nick Maslin	Fuso
Paul Minett	Strategic Lift
Peng Cao	University of Auckland
Phillip Haynes	Juno & Jupiter

Pratik Dattani	EPG Economic and Strategy Consulting
Rob Walton	Metalman NZ Ltd
Shanghai Wei	University of Auckland
Tim Findlay	Remarkit
Tim Harper	BMW
Vivian Fang	GNS
Yury Botkov	<a href="http://www.hybrids.co.nz">www.hybrids.co.nz</a>

### A.12.5 Battery Users Group

Marcus Baker	Private stationary storage owner
Bill Alexander	Bluecar
Wayne Herriott	WAM
Buddhika Rajapakse	Mercury
Alan Gaskin	Chargenet
Dima Ivanov	Flip the Fleet
Amanda West	LDV
Andrew Bayliss	Ssangyong
Dennis Kelly	Fleetpartners
Carl Hills	Fleetpartners
Letitia Still	Customfleet
Michelle Herlihy	Customfleet
Hayden Johnston	GVI
Nalin Senanayake	iTech

Peng Cao	(Auckland University)
Gareth Shute	(EV owner)
Glen Jacobs	NZAMR
Joe Gibson	SIMS
Kathryn Trounson	Better NZ Trust
Mark Lloyd	AA
JD Rayner	JW Group

### A.12.6 Safety and Logistics

Todd O'Donoghue	FENZ – Chair
Juhi Shareef	Vector/THL, Chair of B.I.G
Hannah Blumhardt	Eunomia
Duncan Wilson	Eunomia
George Hare	BRANZ
Ryan Cauchi-Mills	TIMG
John Jamieson	GIB
Rex Middelbeek	Vector
Paul Minett	Strategic Lift
Kevin Golding	GIB
Tim Findlay	Remarkit
Alvin Piadasa	Tes-AMM
Joseph Gibson	Sims
Ben Pezaro	Mercury

Rick Barber	NZTA
Dev Tayal	Tesla
Jasmine Faulkner	Metalman
Jeska McHugh	Ecan
Phillip Haynes	Juno & Jupiter
Patrick Vera	FRV
Craig Cocombe	Vector
Saskia Holditch	MBIE
Vanessa Willis	Chargenet
William Smith	Mainfreight
Tim Allan	UBCO Bikes
Elena Wrelton	

### A.12.7 B.I.G. Members

Alec McNeil	WasteMINZ Product Stewardship Group - Marlborough District Council
Alex de Boer	Electric MV
Alex Kirkham	WasteMINZ Product Stewardship Group - Auckland Council
Andrew Boyd	Selwyn District Council
Annalise Davies	Vodafone
Cameron Burrows	Electricity Retailers Ass. (ERANZ)
Carla Vasconi	ANZRP
David McLaughlan	Worksafe
Lauren Roman	Everledger

Luke Blincoe	Independent Retailers
Mary Darlow	The Warehouse Group
Rohan Harford	FRV
Sarah Clare	WasteMINZ Product Stewardship Group - 3R Group Ltd
Sheryl Stivens	
Simon Wilkinson	Wilkinson Environmental NZ
Stephen Godfrey	Orion
Dick Thornton-Grimes	Vector
Andy Sinclair	Hyundai Motors NZ
Anthony Talouli	SPREP
Barry Barton	University of Waikato
Becky Dawson	Mango Communications
Ben Haselden	McKay
Ben Jenner-Leuthart	NZ Safety Blackwoods
Bernie Chote	Kalista (Green Gorilla)
Dana Peterson	MfE
David Stephenson	Tasman District Council
Dion Ross	Upcycle
Donna Peterson	Invercargill City Council
Eilish Andrews	Kāpiti Coast District Council
Ellery Peters	Engineer (was at UC)
Francesca Lipscombe	WasteMINZ Product Stewardship Group - The New Zealand Ecolabelling Trust
Gannin Ormsby	Āmio

Glen Jacobs	Macauley Metals
Greg Nelson	Auckland Transport
Greg Slaughter	Waste Management
Hilary Boyes	SPREP
Jacqui Forbes	Para Kore
James Marsh	Andromeda Metals
James Morfee	McKay Marine
Jo Knight	Zero Waste
John Kennedy	GNS
John Lucas	Insurance Council of NZ (ICNZ)
Jonathan Sergel	AA
Karen Driver	Envision
Katherine Buttar	Waste Minimisation Project Officer
Keith Pedley	FENZ
Kerry Watson	Waipa Networks
Lance Richman	SPREP
Laurence Dolan	EnviroNZ Corporate
Laurence Zwimpfer	eDay Trust, DIAA
Liz Yeaman	Retyna
Marcus Gilbert	Private Stationary Storage
Mark Gilbert	Drive Electric
Mark Lloyd	Automobile Association
Mark Toner	Vector

Marty Hoffart	WasteMINZ Product Stewardship Group - Waste Watchers, Zero Waste Network
Mathy Stanislaus	Global Battery Alliance (World Economic Forum)
Matt Smith	Vector
Max Lyness	Yale
Michael Dudley	ANZRP
Mitchell Curtis	Mercury
Neil Williams	Vector
Niall Darwin	The Infinite Monkey Lab
Pere Pomana	
Peter Morfee	Worksafe
Robert Herbert	Sims E-Recycling (NZ) Ltd
Robert Joseph	Waikato University
Robyn Holdaway	Vector
Robyn Vallom	EnviroNZ Corporate
Rowan Latham	Christchurch City Council
Ryan Cauchi-Mills	TIMG
Sam Lowry	
Saskia Verraes	THL
Siiri Katakka	Everledger
Teina Boasa-Dean	
Tim Stringer	Vodafone
Trevor Drage	University of Waikato
Tony Spelman	Swire Shipping



Zhelyko Popovich	Vector
------------------	--------