



Proposed Scheme Design for Large
Batteries: Draft for Consultation

1st March 2021

CONTENTS

CONTENTS.....	2
THE BATTERY INDUSTRY GROUP.....	3
<i>WHAT IS A 'PRODUCT STEWARDSHIP SCHEME'?</i>	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-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

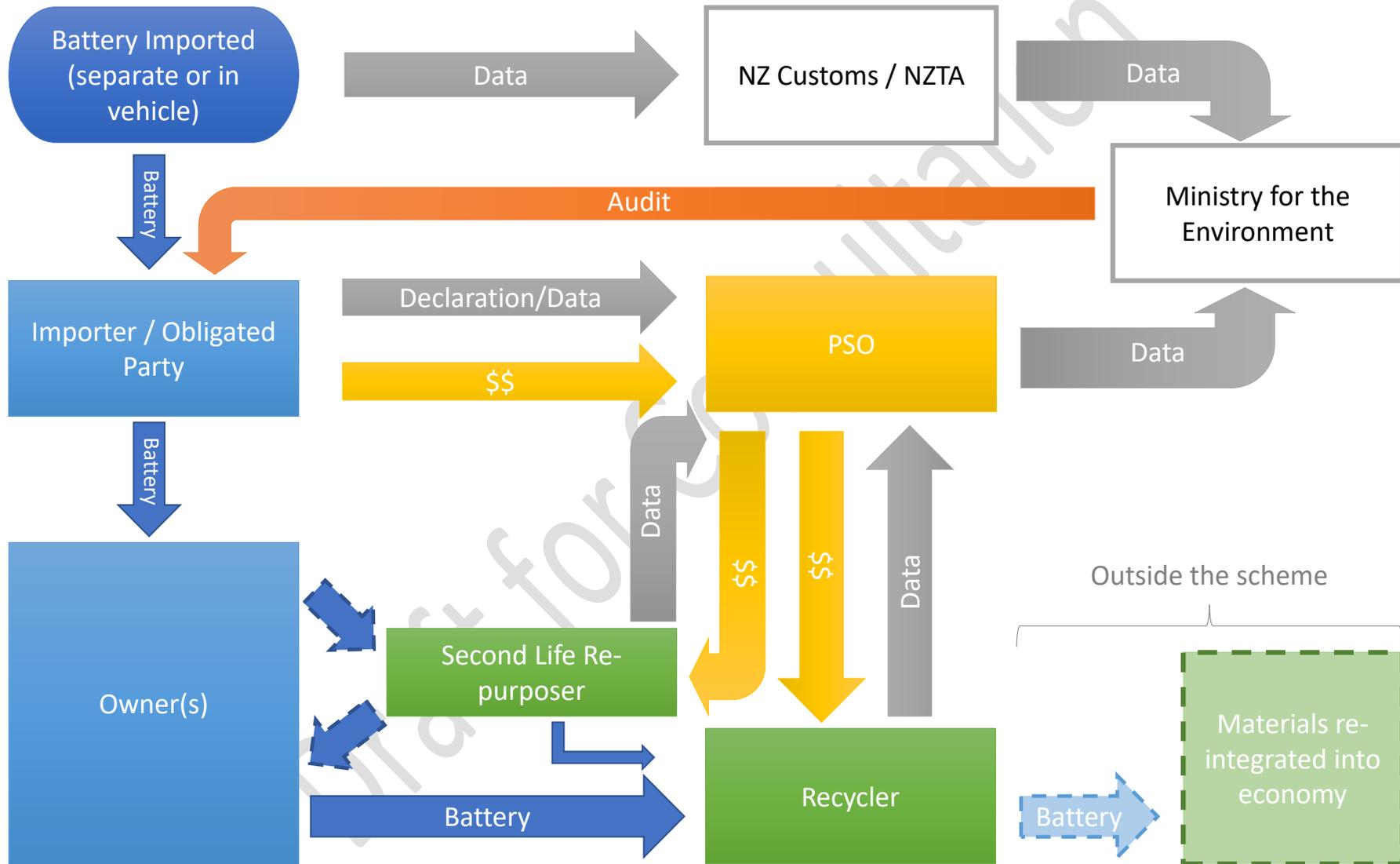
In July 2020 large batteries were specifically declared a ‘priority product’ under the Waste Minimisation Act 2008 (WMA) as part of the electrical and electronic products (e-waste) category. This means that in order to put large batteries on the market in NZ, they will need to be part of an accredited 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 Environment¹. 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:

¹Ministry 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

Aspect	Scheme Design	Comment
Scope	<p>'Large' Battery Definition</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"> • Stationary energy storage • Motorcycles • Cars • Vans and Utility vehicles • Recreational vehicles • Trucks • Buses • Forklifts • Aeroplanes etc. <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>Chemistries Included</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"> • Lead acid • Flow batteries • Nickel Cadmium 	<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>Thresholds for Inclusion in Scheme</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"> • The number of batteries imported per year • Proof of personal use 	<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>
<p>Governance & Management</p>	<p>Governance</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>Management</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>
<p>Recycling and re-use targets</p>	<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 2nd 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>
<p>Responsibility for collection and recovery</p>	<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"> • Planning network provision • Setting and monitoring standards for service providers under the scheme • Issuing contracts for service provision • Ensuring appropriate regional coverage • Evolving the scheme to cope with growing numbers of batteries and responding to opportunities to improve outcomes (e.g. circular economy, efficiency) 	<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>
<p>Ownership and responsibility for large batteries</p>	<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 <i>responsible</i> 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 <i>responsible for ensuring that this ELB is then collected and processed</i> according to the policies that govern the programme.</p> <p>The <i>ownership</i> 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>	
<p>Data management and reporting</p>	<p>Obligated parties will register with the PSO and provide data to the PSO on the <i>quantity of large batteries they imported/placed on the market</i> 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, levied on product imported into NZ</i>. 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 <i>based on the total capacity of the batteries placed on the market</i> 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>
-----------------------	--	---

<p>Payments to service providers under the scheme</p>	<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"> • Flat rate payments based on set schedules (e.g. battery removal by vehicle or battery type, recycling by weight) • Re-imburement of documented costs (e.g. transport) • Fixed price payments for specific operations. 	<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>
<p>Orphan and legacy product</p>	<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>
<p>Modulated fees based on eco-design</p>	<p>The fees charged to obligated parties would initially be modulated according to the following criteria:</p> <ul style="list-style-type: none"> • Broad battery chemistry type (e.g. Li-ion, nickel-metal hydride / NiMH) • Warranted battery life <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>Compliance & Standards</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: https://big.org.nz/.</p>
<p>Public awareness, research and market development</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"> • 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 • Easy to access, reliable information (ideally from official sources) on what to do and where to go • No cost for doing the right thing. Some support for offering a bounty to recycle batteries.

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?

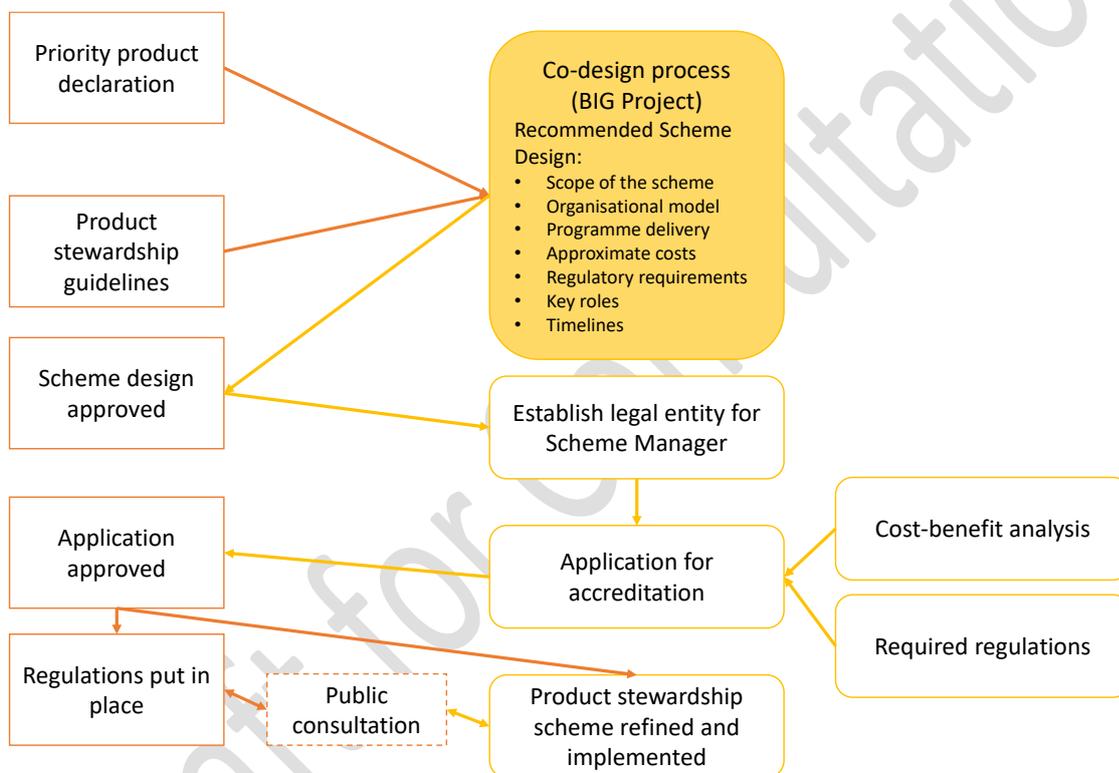
As noted above, the amounts added in the early years of the scheme should be relatively small, reducing any potential for disincentive.

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 or contact: sarah@big.org.nz

END