Discussion paper for consultation purposes

Discussion Paper

Options and approaches for the proposed Handheld Battery Product Stewardship Scheme

Proposal developed by members of the Battery Implementation Working Group

March 2014

Australian Local Government Association

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Glossary and acronyms

All definitions and terms provided are under consideration and form part of the overall discussion on options for a product stewardship Scheme. Where these are used in the discussion paper with regard to the Scheme, they have been capitalised.

For the purposes of this document:

ABRI means the Australian Battery Recycling Initiative.

Accumulator means a rechargeable battery.

Act means the *Product Stewardship Act 2011.*

Automotive Battery means a Lead Acid Battery used to power a motor vehicle, excluding a sealed Lead Acid Battery that meets the weight criteria for a Handheld Battery.

AV means audio visual.

Battery Inputs means the batteries that are purchased for use in Australia.

Battery Product Stewardship Scheme (Scheme) means the overarching framework that provides the means by which parties in the battery supply chain can share responsibility for the long-term management of end-of-life batteries in Australia.

Battery Recycler means a business or organisation recovering the component materials from batteries.

Battery Retailer means a retailer that sells loose batteries or a product containing batteries that is in a Designated Product category.

Battery Stewardship Agreement (Agreement) means a collective written commitment among Stewards for developing, funding and implementing the Battery Product Stewardship Scheme.

BIWG means the Battery Implementation Working Group.

Brand Owner means:

(a) a person who is the owner or licensee in Australia of a trade mark or brand under which a battery is sold or otherwise distributed in Australia, whether the trade mark or brand is registered or not; or
(b) a manufacturer of a product containing a battery.

BRG means the Battery Reference Group.

Button Cell Battery means small, thin energy cells that are commonly used in watches, hearing aids, and other electronic devices requiring a thin profile.

Capacitor means a device of one or more pairs of conductors separated by insulators used to store an electric charge.

COAG means Council of Australian Governments.

Collection means:

(a) collection of loose used batteries from consumers; or
(b) separation of batteries from used electrical and electronic equipment for the purposes of Recycling.

Collector means an individual, business or organisation that collects and/or transports end-of-life batteries from anywhere in Australia for Recycling as part of the Battery Product Stewardship Scheme.

Consumer means the final purchaser of the Handheld Battery, whether as a loose replacement battery or as a battery contained in a product.

Data Year means the year defined for reporting purposes.

Embedded Battery means a battery that is an integral part of a product and cannot be easily removed without rendering the product inoperable.

End-of-life (EoL) means an item which is no longer deemed to be capable of performing the function for which it was originally intended.

Environmentally Sound Management means the management of whole or part of an end-of-life Handheld Battery in such a way as to reduce or prevent environmental and health and safety impacts and to optimise the recovery and reuse of the materials in the battery. Disposal through direct incineration, landfilling and dumping are excluded from the definition of Environmentally Sound Management.

Equivalent Battery Unit (EBU) means a standardised measure for the quantity of end-of-life Handheld Batteries. One EBU is equivalent to one standard AA battery.

Export means export from Australia.

Formal Stockpile means batteries that are stockpiled in warehouses and industrial facilities according to relevant legislation for battery storage in bulk.

Free-rider means an Importer that is not a signatory to the Agreement or otherwise not fulfilling the commitments of a Steward.

Handheld Battery means a battery of any chemistry that weighs less than 5kg.

Import means import into Australia, and includes bringing in with or as part of another product.

Importer means a party operating in Australia who, within a Data Year, imports Handheld Batteries or products containing Handheld Batteries into Australia, including Handheld Batteries for which no Brand Owner exists, above a specified threshold.

Individual Producer Responsibility (IPR) means each producer is responsible for financing the operations relating to the waste from their own products, rather than collective responsibility through a shared product stewardship scheme.

Industrial Battery means a large battery used in industrial applications for standby or motive power.

Informal Stockpile means storage of batteries in homes or businesses on an ad-hoc basis prior to disposal, for example, loose discharged batteries or batteries in a disused piece of equipment.

JASANZ means Joint Accreditation System of Australia and New Zealand.

LCA means life-cycle assessment.

Lead Acid Battery means a battery with lead electrodes and using dilute sulphuric acid as the electrolyte.

Lithium Batteries are disposable (primary) batteries that have lithium metal or compounds as an anode and manganese dioxide typically as a cathode. They are widely used in portable consumer electronic devices.

$LiCoO_2$ means lithium cobalt oxide.

LIB means lithium ion battery, a member of a family of rechargeable batteries. Lithium ion batteries are typically found in a range of uses from pacemakers, power tools, cameras, smoke alarms and security systems and are increasingly replacing Lead Acid Batteries for use in golf carts. Chemistry, performance, cost and safety characteristics vary across LIB types—for example, $LiCoO_2$, NMC and LMO.

LMO means lithium manganese oxide.

MIT means Massachusetts Institute of Technology.

NiCd means nickel cadmium.

NiMH means nickel-metal hydride.

NMC means lithium nickel manganese cobalt oxide, a chemistry typically found in batteries for power tools and medical equipment.

NTCRS means National Television and Computer Recycling Scheme.

Orphan Product means a battery or a product containing a battery that was manufactured or imported by a company that no longer exists.

Parallel Import means a non-counterfeit, legitimate product imported from another country without the permission of the intellectual property owner.

Primary Battery means a battery not intended for recharging.

Priority Product List means the list of products, published each year by the Australian Government under the *Product Stewardship Act 2011,* that are being considered for product stewardship approaches.

Producer Responsibility Organisation (PRO) means the entity responsible for administering the Battery Product Stewardship Scheme to ensure the objectives and targets of the Scheme are met.

Product Stewardship means an approach to reducing the environmental and other impacts of products by encouraging or requiring manufacturers, importers, distributors and other persons to take responsibility for those products.

Recycle means a process to recover constituent materials and use these materials to produce other products.

Recycling Efficiency means the percentage of a battery that is Recycled by weight.

RIS means Regulation Impact Statement.

Sealed Lead Acid Battery means a type of lead acid battery that is sealed and contains no liquid electrolyte. These are commonly used for portable electrical devices, emergency lighting and alarm systems.

Secondary Battery means a battery intended for recharging.

Signatory means a party that has signed the Battery Stewardship Agreement.

SLI means starting, lighting and ignition batteries.

Sorting means to categorise batteries by their chemical composition to determine the most appropriate management process.

Steward means a Signatory to the Battery Stewardship Agreement.

Stocks means those batteries in service within the economy.

ULAB means a Used Lead Acid Battery.

Waste Arising means the estimate of new waste Handheld Batteries in a particular Data Year that have reached the end of their useful life or that are unwanted for any reason and require disposal through either Recycling or another waste management solution.

For consideration and feedback–

- *Please consider the terms used in the Glossary and provide feedback on their appropriateness. If you have an alternative definition or term, please provide.*

1 Purpose of this paper

The purpose of this discussion paper is to outline a proposed voluntary, industry-led national Battery Product Stewardship Scheme (Scheme) for Australia, along with a number of options for the operation of the Scheme. This paper also explores key issues such as:

- the type of batteries to be included
- options for a phased approach for different battery types
- the preference for a voluntary, industry-led approach
- how fees could be collected to finance Scheme implementation
- key performance indicators for measuring and reporting success of the Scheme
- the preferred approach developed based on discussions to date.

Examples are provided throughout the paper to illustrate the options under consideration.

This paper will be used as the basis for broader stakeholder engagement to better understand some of the processes, opportunities and challenges involved and to help develop the proposed Scheme in greater detail.

It is not the purpose of this discussion paper to revisit the rationale for battery product stewardship. Rationale has been addressed in the background paper *Business and Public Policy Case for Battery Stewardship (handheld batteries)*[1] and by state and federal Environment Ministers in making product stewardship a priority for handheld batteries. A summary of the rationale from the background paper is provided in Appendix 1.

1.1 The process to date

This paper has been informed by discussions with key Australian and international stakeholders.

A battery stakeholder workshop was held in August 2013 to discuss key areas for the development of a product stewardship scheme, including:

- the vision
- the scope (which types of batteries should be covered and why)
- the form of the scheme
- effectiveness of the program in addressing the public policy and business case considerations

The workshop highlighted some of the key concerns of stakeholders and provided the starting point for the design of the scheme.

In the workshop, stakeholders strongly supported a product stewardship scheme; however some stakeholders raised concern over the effectiveness of a voluntary approach in encouraging industry participation. There was support for a co-regulatory scheme; however, it was accepted that a voluntary approach would need to be considered first, as a voluntary option needs to be considered for any Regulation Impact Statement (RIS) that would be required before introduction of any co-regulatory arrangement.

[1] Martin Stewardship & Management Strategies Pty Ltd (MS2) June 2013, prepared for Sustainability Victoria.

A Battery Implementation Working Group (BIWG) has been established to develop a proposed scheme for broader consultation by mid-2014. The BIWG is comprised of representatives from government and industry and has an independent chair. The BIWG is an advisory body, not a decision-making body, and has been established to advise environment ministers on a proposed product stewardship scheme for handheld batteries.

To date, BIWG discussions have been informed by a number of sources including the Australian Battery Recycling Initiative (ABRI), various industry meetings, a Battery Reference Group (BRG) forum and BIWG representatives' own knowledge of the battery industry and product stewardship schemes internationally and within Australia. Discussions have taken place in the context of the current understanding of battery collection and recovery in Australia, a summary of which is provided in Appendix 2. This paper has been prepared by the BIWG in order to continue the conversation and development of a voluntary product stewardship scheme for handheld batteries. A list of members and Terms of Reference for the BIWG is provided at Appendix 3.

Changes in December 2013 to the Council of Australian Government (COAG) process saw the abolition of the Standing Council on Environment and Water, under which development of a product stewardship scheme is undertaken. However, it was also agreed that where there are important areas of Commonwealth and State cooperation outside the COAG system, Ministers may meet on an ad hoc basis. It is important to note that the current product stewardship projects will continue to progress. Following consultation in mid-2014, a proposed scheme will be finalised and prepared for consideration by environment ministers in 2015.

1.2 Who are the key stakeholders

It is envisaged that Importers of Handheld Batteries would have primary financial responsibility for funding the Scheme, although it is recognised that other parties may make additional direct or in-kind contributions. Other parties may have roles as Stewards, for example, by providing Collection facilities at point-of-sale or at Local Council waste management sites. At this point the BIWG proposal does not anticipate that Retailers, State Governments and Local Councils would be expected to contribute funding directly to Producer Responsibility Organisation (PRO) operation. More detail on suggested responsibilities is provided in Table 1.

Key stakeholders in the development and delivery of the proposed Scheme include:

- Importers
    - manufacturers and retailers of batteries
    - manufacturers and retailers of products containing batteries
    - Importers of batteries and products containing batteries
- The Recycling sector
- The waste sector
- The transport and logistics sector
- Local governments and landfill operators
- State and territory governments
- The Australian Government
- Environment and community groups.

1.3 Proposed Scheme and critical factors for success

This paper has been developed by the BIWG on the basis of a voluntary, industry-led approach to Handheld Battery stewardship. The proposed Scheme comprises the following elements (see Figure 1):

- A Battery Stewardship Agreement (Agreement) that would provide a collective written commitment between Stewards for developing, funding and implementing the Scheme.
- A 5-year Strategic Plan to be developed jointly by the PRO and Stewards that would provide more detail for how the PRO and Stewards will implement the Scheme in accordance with the Agreement.
- Transparent annual reporting of performance against the Strategic Plan.
- Importers seeking to meet the objectives of the Agreement through their own arrangement rather than through an industry-wide PRO (often called Individual Producer Responsibility or IPR) would be expected to deliver a comparable Strategic Plan and annual reports to Stewards under the Agreement.

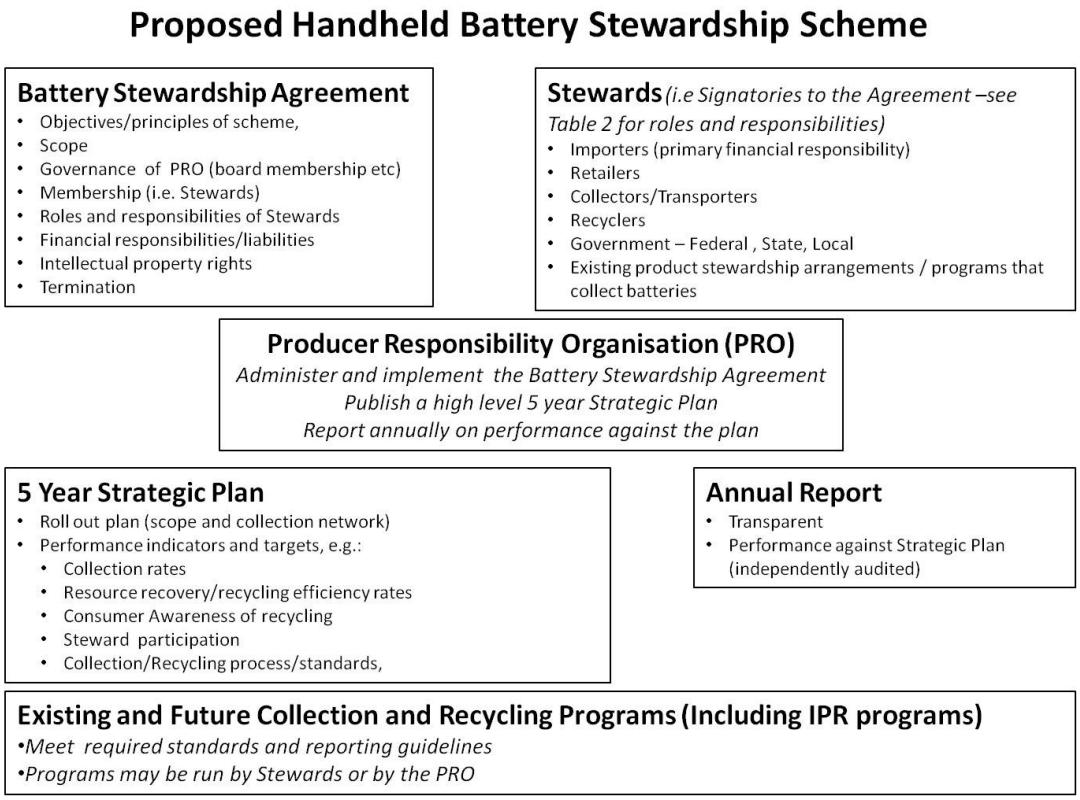

Figure 1: Proposed Scheme

The proposed Scheme is voluntary in design and could be developed to be suitable for accreditation as a voluntary product stewardship arrangement under the *Product Stewardship Act 2011* (the Act).

The BIWG recognises, however, that there are advantages and disadvantages to developing and implementing the proposed voluntary Scheme, as outlined in Table 1.

Table 1: Advantages and disadvantages of the proposed voluntary Scheme

Advantages	Disadvantages
• Is flexible and not constrained by regulatory requirements • Is industry-led and a demonstration of commitment by companies placing batteries on the market to their sound environmental management • Is able to be easily amended • Because of the flexibility the Scheme can be designed to keep administrative and Scheme costs to a minimum • Can be implemented more quickly than a co-regulatory Scheme • Less expensive development process than a co-regulatory Scheme • Can be designed to deliver objectives in the most cost-effective way • Can be more easily staged; can start small and ramp up over time • A voluntary option is a necessary considerations of the co-regulatory development process • Allows for the collection of data and information about what works and doesn't in order to design a better approach should co-regulation be necessary • Provides greater certainty as can be implemented without reliance on government or RIS processes.	• Not supported by regulation to address free-riders that could benefit from the Scheme without accepting appropriate physical or financial responsibility. Free-riders can increase costs of those Stewards that do assume responsibility for the products they place upon the markets if products from non-participating companies are also returned • Relies on willingness of parties to participate • No formal process to consider other options and compare costs and benefits of the Scheme (for a co-regulatory arrangement, this would be undertaken through a RIS).

Australian, state and territory governments have made product stewardship for handheld batteries a national priority and dedicated resources to the development of an appropriate scheme, including project funding and the establishment of the BIWG, with bipartisan support.

Importers whose products make up the majority of batteries that are available for Collection and Recycling have been given the opportunity to represent their interests in developing a viable Scheme. A voluntary approach is reliant on participation by these identified Importers and, as such,

options are available for co-regulatory approaches should industry Stewards fail to deliver the Scheme outcomes and objectives and should a co-regulatory approach be shown to be more cost-effective option for addressing identified needs.

This paper has been developed by the BIWG to provide the basis for further discussions on the design of a voluntary, industry-led Scheme.

1.4 Providing Comment on the Discussion Paper

Feedback on this discussion paper is requested by **Monday 31 March 2014**. Where possible, please make your feedback and comments as detailed as possible in order for the BIWG to fully consider any new options or proposals for change. Comment and feedback can be provided to the BIWG Secretariat by mail or email:

Email:
kylie.hughes@ehp.qld.gov.au

Mail:
ATTN: Kylie Hughes
GPO Box 2454
BRISBANE QLD 4001

2. Introduction

2.1 Policy issues

Analyses of the Australian battery market conducted in 2010 found that there are significant numbers of batteries being consumed each year. A forthcoming 2014 study is anticipated to find similar results. The chemistry of batteries on the market is changing rapidly, with a decline in non-rechargeable batteries and a corresponding increase in rechargeable batteries.

While anecdotally there appears to have been a slight increase since 2010 in the amount of handheld batteries that are reprocessed, handheld batteries of all chemistry types are still most likely to end up in landfill. While there are existing Recycling solutions for Lead Acid Batteries, there is significant room to improve the Collection and Recycling of handheld batteries of all chemistries.

In April 2013, environment ministers agreed to place the development of a handheld battery product stewardship scheme onto the 2013/14 work plan. In June 2013, handheld batteries were included on the Priority Product List under the Act.

Under the Act, the Australian Government Environment Minister must be satisfied that the product stewardship criteria are met when making regulations for co-regulatory and mandatory product stewardship Schemes. The product stewardship criteria are also relevant when determining whether to accredit a voluntary arrangement under the Act. These criteria were considered by environment ministers when making the decision to place the development of a handheld battery product stewardship scheme on the work plan and by the Australian Government Environment Minister when determining the 2013/14 product list.

The criteria include:

- that the products are in a national market
- that the products contain hazardous substances
- that there is the potential to significantly increase the conservation of materials used in the products, or the recovery of resources (including materials and energy) from waste from the products
- that there is the potential to significantly reduce the impact that the products have on the environment, or that substances in the products have on the environment, or on the health and safety of human beings

Handheld batteries contain a number of substances, including heavy metals such as lead, mercury, cadmium and zinc that have potential environmental and human health impacts when disposed of into the environment or landfill. Effective management is required to increase the safe and efficient Recycling of end-of-life (EoL) handheld batteries in Australia in order to reduce the impact of the EoL products on the environment.

Product stewardship broadly is an approach to managing the impacts of different products. This approach acknowledges that those involved in the production, sale, use and disposal of products have a shared responsibility to ensure that those products are managed in such a way as to reduce their impact on the environment and on human health and safety.

Under the Act, a product stewardship scheme may be voluntary, co-regulatory or mandatory. Australia currently has a number of different product stewardship schemes in place (Appendix 4).

2.2 Research data

In Australia in 2010[2] it was estimated that approximately 352 million batteries were consumed annually, either as stand-alone batteries, as batteries sold with products or embedded in products such as mobile phones. This number is made up of:

- handheld batteries of various chemistries. Note that for the purposes of this earlier study a handheld battery was defined as a battery weighing less than 1kg;
- automotive starting, lighting and ignition (SLI) batteries, which are typically Lead Acid Batteries; and
- large and Industrial Batteries, which are typically non-automotive Lead Acid Batteries such as those used in marine and mining applications; for traction and motive power; and large stationary standby power storage applications. Large and Industrial Batteries may also include other chemistry types that provide motive power for electric and hybrid electric vehicles in addition to standby power for photovoltaic systems and emergency back-up.

Of the estimated 352 million batteries consumed annually in Australia, Handheld Batteries make up the largest proportion by number at 345 million, or 98 per cent of the total. SLI batteries make up around 5.8 million, while large and Industrial Batteries make up the remainder at 1.7 million.

In 2010, it was estimated that approximately 271 million batteries (approximately 135,000 tonnes) reached the end of their useful life in Australia. An estimated 183 million batteries (approximately 11,000 tonnes) were disposed of at landfill. Landfill accounts for close to 70 per cent of all EoL batteries by count. Reprocessing, legal export and Formal Stockpiling only accounts for 6 per cent of all battery Waste Arisings on a count basis. The remainder includes leakage through 'Informal Stockpiling', for example in obsolete, broken or unwanted appliances, toys, remote controls, phones and computers.

On a weight basis, Informal Stockpiling is estimated to account for around 5,820 tonnes of all batteries. This is made up of around 2,750 tonnes of automotive, large and Industrial Batteries and over 3,000 tonnes, or approximately 4 per cent, of handheld batteries. Lead Acid Batteries are most commonly stockpiled in rural and remote locations while handheld batteries are commonly stockpiled in homes and offices. If taken on a count rather than weight basis, handheld batteries increase the proportion of batteries informally stockpiled from 4 per cent to 25 per cent of all battery Waste Arisings.

The Recycling of battery Waste Arisings is dominated by Lead Acid Batteries, which make up virtually all of the batteries reprocessed in Australia. The estimated 100,250 tonnes of Lead Acid Batteries reprocessed is approximately 75 per cent of all battery Waste Arisings and 82 per cent of all Lead Acid Battery Arisings. At the time of this study, all Used Lead Acid Batteries (ULABs) were reprocessed domestically.

[2] Warken ISE 2010, *Final report, Analysis of Battery Consumption, Recycling and Disposal in Australia*.
This study is based on a mass balance analysis; that is, it looked at all inputs, stocks and waste arisings. It defined 'handheld batteries' as being less than 1kg.

In 2010 the handheld battery category comprised around 300 million stand-alone batteries and 45 million Embedded[3] Batteries. All handheld batteries are imported, as there is no domestic manufacturing.

When taken collectively, there is a high Recycling rate for all batteries in Australia as a whole (75 per cent as measured by weight as a percentage of Waste Arisings). However, there are very few handheld batteries recovered for Recycling, with only 750 tonnes across all chemistry types collected for local processing and legal export. This represents a Recycling rate of 6 per cent of handheld batteries by weight or 4 per cent by count.

The BIWG has commissioned a study to provide updated mass balance information for Handheld Batteries. The results of the study will be incorporated as they become available.

The BIWG also commissioned an independent survey on battery ownership and recycling practices by consumers in conjunction with the Australian Mobile Telecommunications Association's annual mobile phone ownership and use survey. The online survey was conducted by independent research firm IPSOS from late January to early February 2014 and involved 1,029 interviews of respondents 16 years or older that own a mobile phone. Results were presented to the BIWG on 20 February.

Consumers purchase batteries either on their own or within a product. The survey found that on average around half the people surveyed purchased between 1 and 25 non-rechargeable and rechargeable batteries per annum and that 46 per cent do not purchase rechargeable batteries (Figure 2).

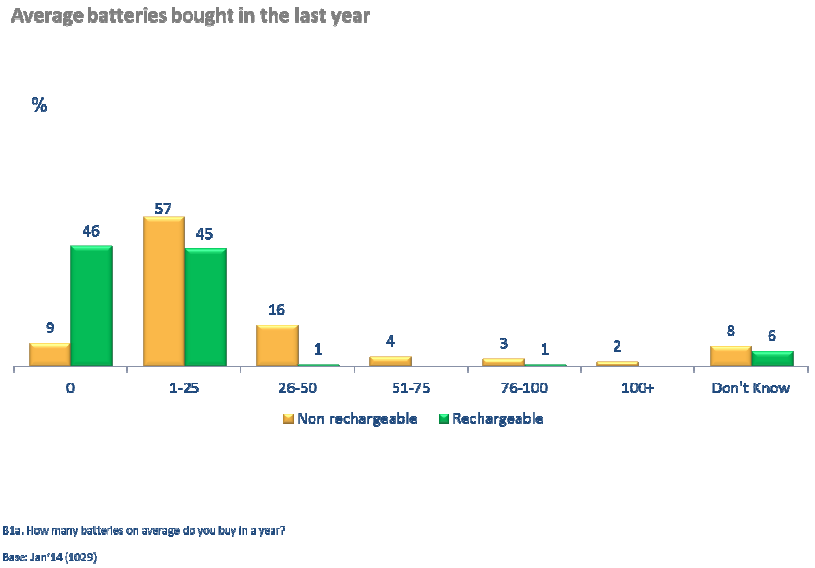

Figure 2: Battery Purchases
Source: IPSOS 2014 research for BIWG

[3] For the purposes of the 2010 report, 'embedded' means batteries sold in products.

Consumers were surveyed on products they'd purchased in the past 12 months that included a battery. Of consumers purchasing products including batteries in the past 12 months, 43 per cent purchased five or more toys and 15 per cent purchased five or more torches or lanterns (Figure 3).

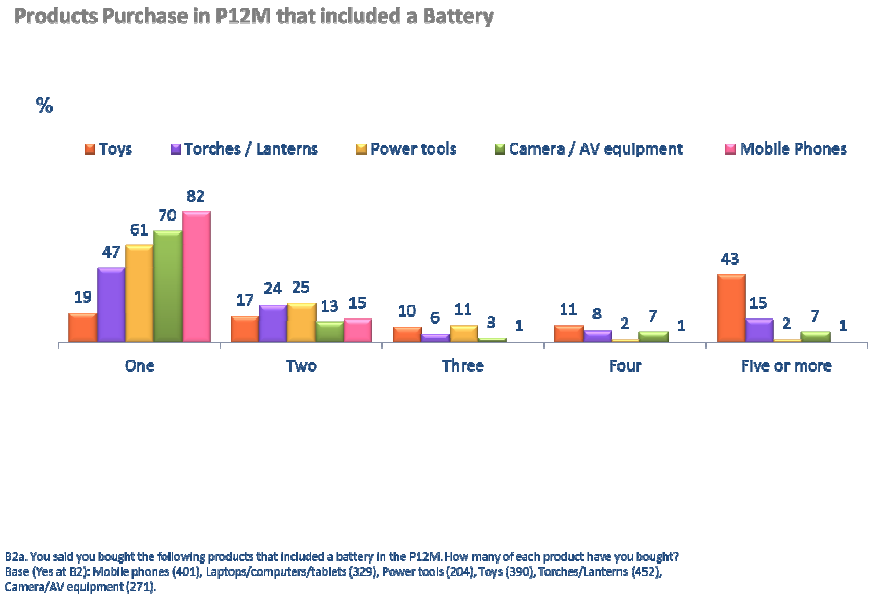

Figure 3: Purchases of Products that Included a Battery
Source: IPSOS 2014 research for BIWG

As shown in Figure 4, 51 per cent of consumers surveyed currently dispose of their used batteries in their kerbside rubbish bin, with a further 16 per cent disposing of batteries in their kerbside recycling bin. Another 18 per cent return their batteries for recycling through collection points at retail stores, public collection facilities or council waste facilities.

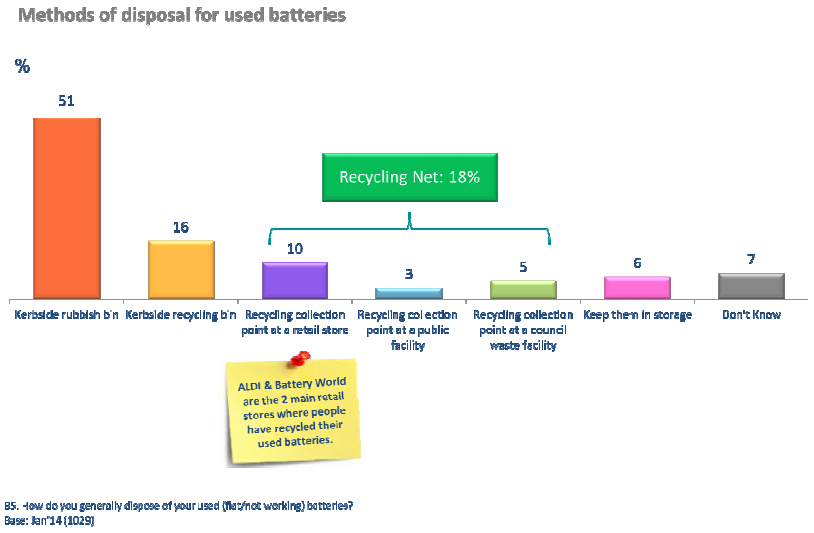

Figure 4: Consumer Disposal Practices for Handheld Batteries
Source: IPSOS 2014 research for BIWG

Of the 16 per cent of consumers that disposed of used batteries in their kerbside recycling bin, 88 per cent did not know that their batteries would not be recycled (Figure 5).

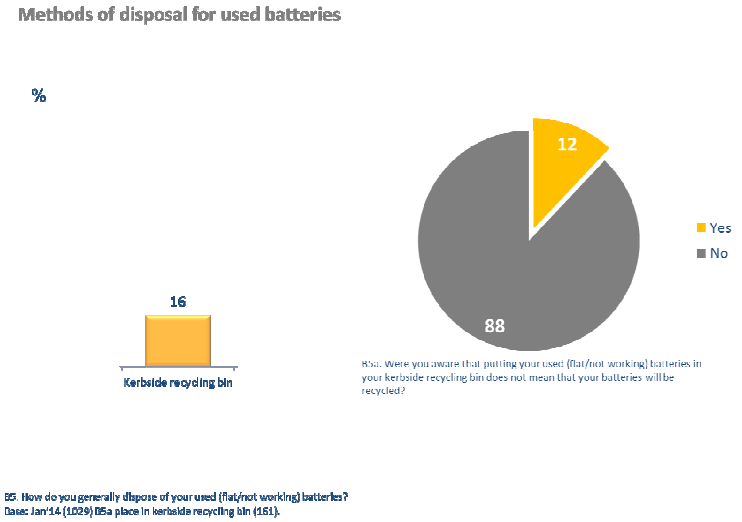

Figure 5: Disposal of Batteries through Kerbside Recycling Bins
Source: IPSOS 2014 research for BIWG

Over half the people surveyed did not have any batteries in storage (Figure 6), supporting evidence that many batteries are thrown into the rubbish bin. However, there are still an estimated 82.9 million batteries in storage at homes (55.3 million non-rechargeable and 27.6 million rechargeable batteries).

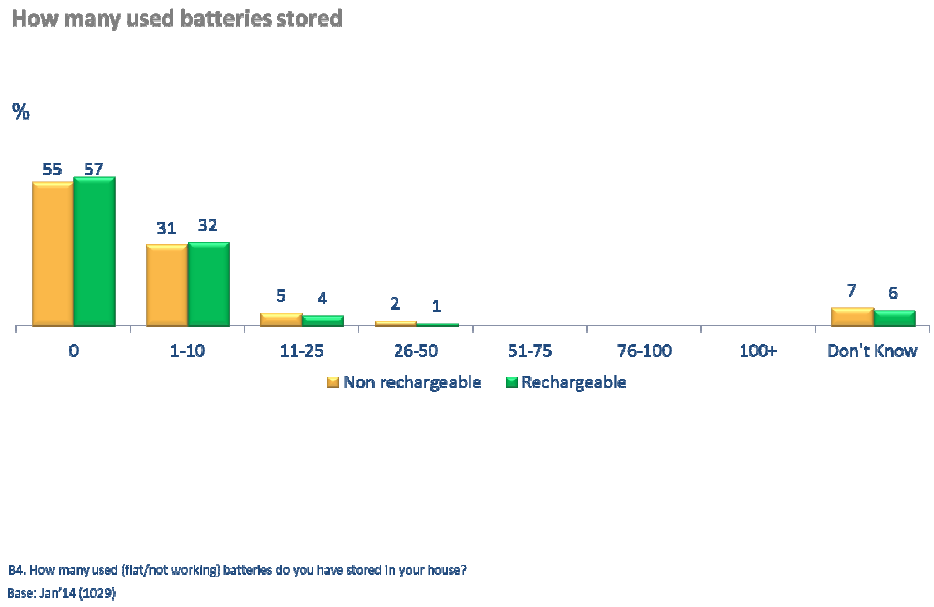

Figure 6: Battery Storage
Source: IPSOS 2014 research for BIWG

The responses highlighted that many people do not recycle because they are unaware of how or where to recycle batteries, or even that it is possible to recycle them. Knowing where to find bins and having them at local supermarkets received the strongest support for encouraging battery recycling, followed closely by greater promotion of battery recycling programs (Figure 7).

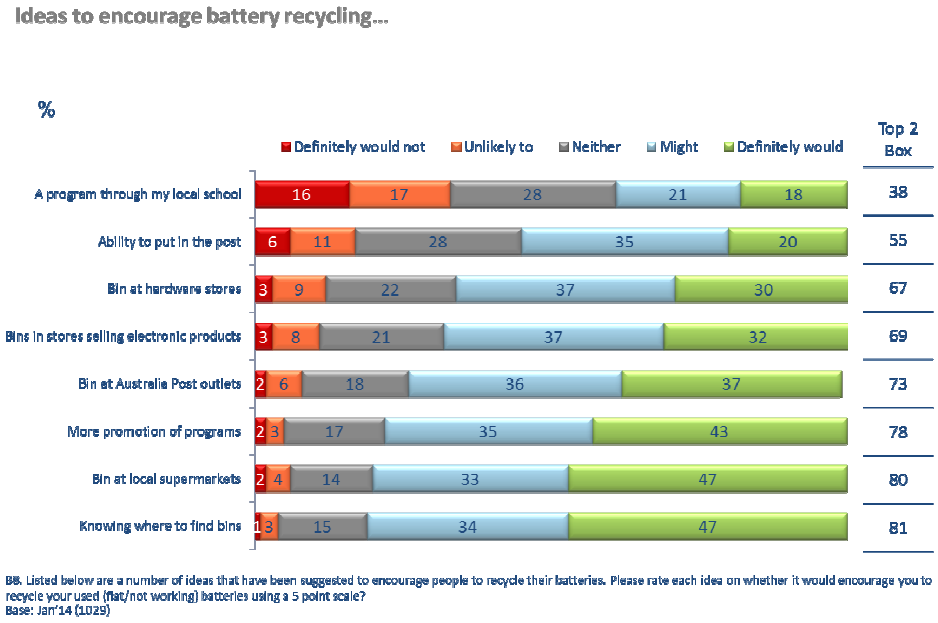

Figure 7: Ideas to Encourage Battery Recycling
Source: IPSOS 2014 research for BIWG

Additional information on battery brands and types recovered is provided by audits of Sustainability Victoria's Batteryback program. The percentage of battery types by weight recovered through this program since 2008 are provided in Figure 8.

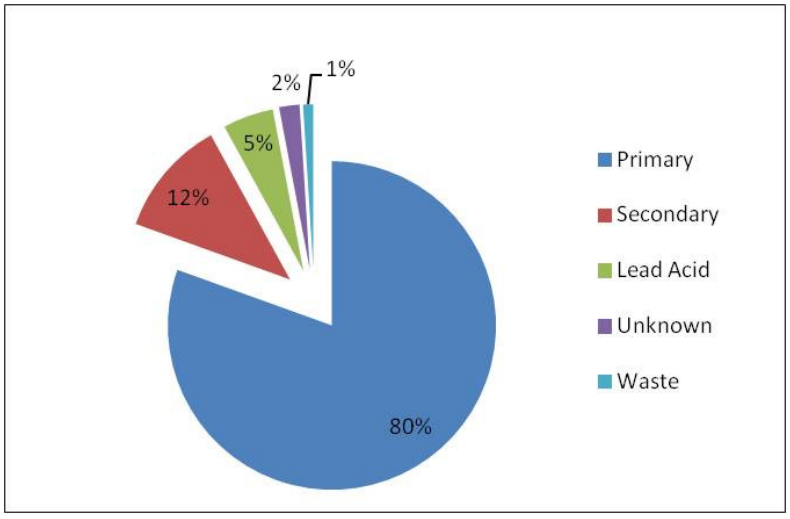

Figure 8: Percentage of Battery Chemistry Types Recovered through Batteryback from 2008 to 2013
Source: Sustainability Victoria

Collection data from a December 2013 audit of the Batteryback program was presented to the BIWG on 20 February 2014. Figure 9 and Figure 10 show the relative proportions of brands recovered through the Batteryback program as of the audit. According to the audit results, the share of major brands Energizer/Eveready and Duracell in Batteryback collections has decreased over 10 per cent since a 2010 audit.

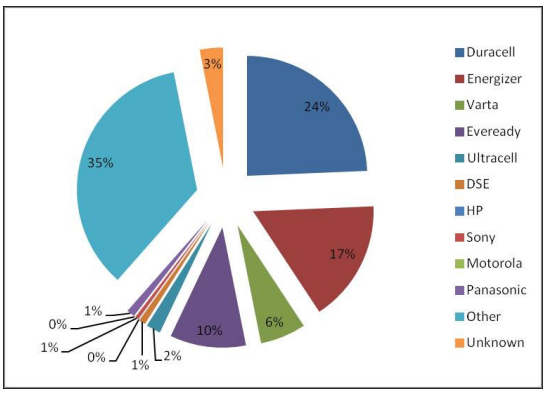

Figure 9: Battery brands by units

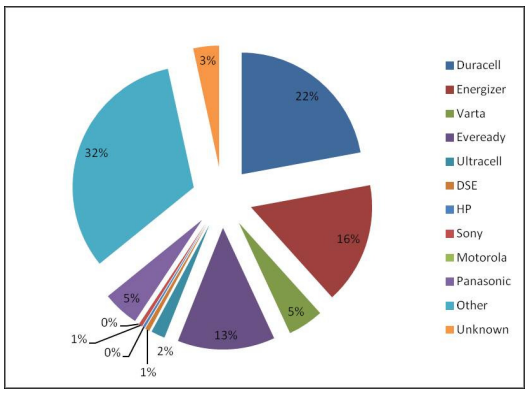

Figure 10: Battery brands by kg

Source: Sustainability Victoria, December 2013

2.3 Consultation

Around 25 people covering a range of sectors including retailers, recyclers, manufacturers, collectors, transporters and environment groups attended a BRG forum in Canberra on 19 February 2014.

With most of the BIWG members in attendance, the Chair guided attendees through the key issues under consideration for this discussion paper. The forum provided the first of several opportunities for stakeholders to comment on the proposed Scheme as it is being developed.

The forum elicited good comments and discussion and highlighted areas of agreement in addition to identifying where more information is needed to develop a robust and efficient scheme. Attendees agreed that a meeting of battery manufacturers, retailers and Original Equipment Manufacturers should be held as soon as possible to discuss some of the issues around the development of the scheme and to gauge initial industry support.

Existing life-cycle assessments (LCAs) show that the environmental results of battery product stewardship may be positive or negative, depending on the model ultimately used. While various stakeholders want the Scheme to produce a net environmental benefit and support including LCA as part of reviewing Scheme progress, LCA is quite complex and little Australia-specific data is available for batteries. Application of life-cycle approaches for measuring progress is addressed in subsequent sections.

3. Proposal for a Handheld Battery Product Stewardship Scheme

The BIWG's proposal for the product stewardship Scheme is outlined below. These considerations are being put forward for stakeholder feedback and discussion. These proposals are intended by the BIWG to foster, not pre-empt, subsequent discussions on the form and support for a preferred approach.

3.1 Scheme overview

The Scheme would be outlined in a Battery Stewardship Agreement (Agreement). This would be signed by organisations that commit to become a battery 'Steward', including:

- Importers that provide financial support for the Scheme
- local councils, retailers and other organisations that provide space for battery collections
- State governments that provide infrastructure funding or community education.

Certain implementation and operational details, including funding and reporting arrangements and administrative procedures of the PRO, would be contained in a 5-year Strategic Plan to be developed jointly by the PRO and Stewards. It is intended that the publicly available Strategic Plan, plus confidential financial and operational aspects, could form the basis of an application for accreditation as a voluntary arrangement under the Act. Accreditation is valid for a period of five years.

The Agreement would govern the operations of the PRO and development of the Strategic Plan. The Agreement would be a collective written commitment by Stewards. As well as providing the details of the proposed Scheme, the Agreement would outline the responsibilities of the various Stewards as Signatories to the Agreement. It is anticipated that this could include key aspects such as:

- objectives and principles for battery product stewardship in Australia
- batteries that will be collected through the Scheme
- establishment of the PRO and appropriate governance arrangements
- commitments of the Stewards to achieve Scheme outcomes
- demonstrable acceptance of physical and/or financial responsibility, which may include in-kind contributions such as provision of collection points and associated signage
- commitment that Stewards will work towards minimising the number of Free-riders
- funding obligations
- broad operational and design parameters
- how the Scheme will be promoted
- targets and performance measures, including Collection, Recycling, Recycling Efficiency, consumer accessibility and participation rates
- monitoring, auditing and reporting requirements
- duration and review periods for the Scheme
- how intellectual property rights for the program will be managed
- termination of the PRO or membership in the PRO
- the development of a Strategic Plan
- transparent annual reporting of performance against the Strategic Plan.

Some Importers may already have their arrangement in place to collect batteries from consumers and fund recycling, or plan to implement such an arrangement. These organisations may choose to pursue their own individual program and become a Signatory to the collective Agreement. Existing programs recognised under the Agreement including individual programs would be required to meet specific requirements including compliance with collection, recycling and reporting standards.

For consideration and feedback—

- *Do you support a voluntary, industry-led national handheld battery stewardship scheme? Please outline your reasons for or against a national scheme.*
- *What are the likely areas where costs would be associated with such a scheme?*
- *Considerable discussion has revolved around the relative merits of pursuing a voluntary or co-regulatory approach for the Scheme.*
- *Some stakeholders see a voluntary approach as providing greater flexibility and the ability to implement the Scheme more quickly and at less development expense than would be possible under a co-regulatory approach.*
- *The most significant concern raised by stakeholders about a voluntary approach was that 'Free-riders' could benefit from having their products recovered under the Scheme without contributing financially to the Scheme.*
- *In background research, various stakeholders questioned whether major Brand Owners would fund the Scheme in the absence of a co-regulatory approach. Support from some Brand Owners for specific product stewardship approaches was, and still is, conditional upon addressing Free-riders.*
- *A co-regulatory approach would help address Free-riders, but could involve more time and expense to develop for an outcome that is uncertain; that is, there is no guarantee that a co-regulatory approach would be agreed even after it has been through the Regulatory Impact Statement and consultation process.*
- *It should be noted that a voluntary option must be considered as part of a Regulation Impact Statement, so information gathered under a voluntary Scheme will prove useful should a Regulation Impact Statement for a possible co-regulatory approach be pursued in the future.*
- *Comments are sought on how to address these issues under the proposed Scheme, including specific actions that can be taken to address potential Free-riders under a voluntary, industry-led approach.*

3.2 Objectives

The proposed objectives of the Scheme are to:

- reduce the environmental impacts of batteries at EOL, including the release of hazardous substances, by diverting batteries from landfill
- optimise resource recovery from EOL batteries.

3.3 Guiding principles

Stakeholders at a workshop held in August 2013 suggested that a scheme should:

- be industry-led and administered
- promote a shared responsibility between the participants
- acknowledge the inherent resource value of handheld batteries

- recognise that there is a cost associated with ensuring the environmentally sound management of EoL handheld batteries
- ensure the environmental benefits of recycling exceed the environmental costs
- support the conservation of resources by using technologies that provide the greatest recycling efficiencies
- be efficient and cost-effective
- utilise shared collection and transport systems where practical
- provide a convenient and accessible collection service for the majority of consumers
- allow for the provision of a collection service for EoL batteries for domestic and commercial consumers at no charge at the point of collection
- complement relevant policies and legislation and its operation complies with all relevant laws and practices
- be designed to protect the health and safety of consumers, workers and the general public
- be appropriately resourced and empowered to deliver its objectives according to agreed timeframes
- promote the waste management hierarchy in relation to environmentally sound use.

Building on these concepts, it is proposed that the Scheme be underpinned by the following guiding principles:

1. Reduce the environmental and human health impacts of EoL batteries by diverting Handheld Batteries from landfill and recovering the material components for reuse.
2. Provide an overall net benefit, if the economic, environmental and social benefits are shown to outweigh the costs.
3. Recognise the shared responsibility between Importers, governments and consumers.
4. Provide efficient and cost-effective means of collecting EoL Handheld Batteries.
5. Protect the health and safety of consumers, workers and the general public and comply with relevant laws and practices.
6. Provide a convenient and accessible Collection service to the majority of consumers at no charge at the point of Collection.
7. Provide transparent outcomes to demonstrate that Recycling is being undertaken in an environmentally responsible manner.

3.4 Scope

It is proposed that the Scheme would be national in scope. It would cover all Handheld Batteries, whether loose replacement batteries or batteries that are already part of a product containing a battery, which are:

1. entering the Australian market for distribution or sale; or
2. already in Australia prior to the commencement of a Scheme (including orphan batteries).

The Scheme would apply to, but not be limited to, alkaline, carbon zinc, Lithium, lithium-ion (LIB), nickel-cadmium (NiCd), nickel metal hydride (NiMH), silver oxide and non-automotive Lead Acid Batteries.

The Scheme would **not** cover:

- batteries of any chemistry weighing more than 5kg
- batteries that are already covered by another arrangement such as the television and computer and mobile phone schemes and that are still contained in the product
- batteries that are hard to remove by consumers ('embedded batteries').

Batteries contained in products can be divided into:

- embedded batteries
- batteries that can be easily removed and replaced by consumers.

Some overseas product stewardship schemes exclude embedded batteries. Some stakeholders have suggested that the Scheme should include any battery contained in a product so that the Scheme doesn't seem to reward companies that do not design for disassembly or Recycling.

The BIWG considered whether batteries embedded in products should be initially excluded given the extra cost and administrative burden they may introduce to the scheme. It is proposed that embedded batteries are initially excluded from the Scheme. Embedded batteries are often quite difficult to recover and may be better covered initially through other product stewardship schemes such as the National Television and Computer Recycling (NTCRS), in which they are specifically addressed. There are often good reasons why products are designed so that the battery cannot be easily removed, particularly where small button batteries are used. While button batteries sometimes have an inherent material value, removal from the product is not encouraged due to safety concerns.

There are also other complexities associated with the inclusion of products containing batteries. For example, current import tariff codes identify the product that is imported, but not whether the product is imported with a battery.

The BIWG is proposing that the scheme cover all batteries less than 5kg (apart from the exclusions mentioned above), because consumers are unlikely to differentiate between batteries based on chemistry or the type of product that they were taken from. However, a number of options are available for the phased introduction of various battery types, and were considered by BIWG. For completeness and to encourage feedback, these options are explored in more detail in section 3.4.3.

For consideration and feedback—

- *Feedback is sought on whether batteries sold with products should be included or excluded from the Scheme, given the current difficulty in determining the full scope of such products.*
- *Feedback is sought on whether batteries that cannot be easily removed by the consumer should be included or excluded from the Scheme, as well as any international examples where these batteries have been exempted from comparable Schemes.*

3.4.1 Scope of the proposed Scheme

The starting premise for the Scheme is that all primary and secondary Handheld Batteries (excluding embedded batteries) weighing less than 5kg are covered by the Scheme, regardless of whether they are sold separately or contained within a product, and regardless of the type of product.

3.4.2 The preferred option and rationale

The proposed Scheme is intended by the BIWG to be as comprehensive and straight-forward as possible, whilst avoiding some of the pitfalls that could delay or complicate Scheme implementation or cause the Scheme to be more expensive than it needs to be.

As a voluntary, industry-led national approach, the proposed Scheme is open to a broad range of stakeholders and has the benefits of simplicity of design, reduced barriers to participation and ease of understanding. The proposed Scheme would provide more immediate action with lower costs and greater certainty compared to immediate pursuit of a co-regulatory approach. Stakeholders that are already implementing collection programs or are likely to do so in the near future can be better recognised for their early action.

A voluntary approach provides the flexibility to modify and improve the Scheme in order to improve performance and reduce costs, especially in the first few years of implementation. Products evolve quickly, so a voluntary approach would allow the Scheme to adapt over time.

A co-regulatory approach would cost several hundreds of thousands of dollars and take several years to develop through the RIS process that is mandatory for all proposed co-regulatory and regulatory approaches. Despite this effort, a co-regulatory approach may not be justified under the RIS process and a voluntary approach would still need to be pursued to achieve the desired stewardship and public policy outcomes. There are also concerns about the cost and efficacy of enforcement actions against Free-riders under a co-regulatory approach.

Many embedded batteries in significant product categories are being addressed to some extent by other product stewardship approaches, which helps to reduce the cost of the proposed Scheme. Some batteries are specifically designed to be difficult to remove for safety reasons.

Experience from other programs shows that consumers are most likely to bring back all batteries, regardless of chemistry or source. Given the expense and effort necessary to educate consumers on differentiation between battery types, the BIWG view is that an inclusive approach is one means of controlling Scheme costs as it would be less expensive to communicate and explain to consumers. Consumers are also more likely to participate if the Scheme is convenient and easy to understand.

The BIWG acknowledges that some batteries are more hazardous than others (i.e., some rechargeable batteries), but also acknowledges that setting up a scheme to address only the most hazardous batteries would be more expensive and confusing to consumers than other options. It would likely prove impractical to differentiate by battery hazard in a meaningful way, especially given consumers' tendencies to view all batteries as being the same and the lack of chemistry labelling on most batteries. There are also ongoing uncertainties and debate over the level of hazard for different battery types, particularly eco-toxicity impacts in landfill. A restricted Scheme is likely to receive a significant number of non-targeted batteries that would need to be transported, sorted, and either disposed to landfill or recycled, adding to costs and with potential to mislead consumers.

Regardless of the level of hazard, all batteries contain non-renewable resources that can be recovered, so there is some value in their recovery.

3.4.3 Other options suggested by stakeholders

This section presents the preferred option (Option 1) and some of the other options suggested by stakeholders.

Option 1 All Handheld Batteries are covered

This option covers all Handheld Batteries and products containing batteries. It makes no differentiation by product type. This option would mean that any product that requires a battery for its operation and is imported with the battery would be covered under the proposed Scheme from its commencement. This option is simple for consumers but adds complexity for the operator of the Scheme in determining the financial obligations of importers. It would be difficult to identify all products that are imported with batteries and the relevant Importer. There are a large number of product categories where batteries are used; and identification and coverage of all products in these categories, and their Importers, would be a significant undertaking.

Option 2 Coverage by product designation

This option covers loose Handheld Batteries and proposes a phased approach to the inclusion of batteries contained in Designated Product categories. For example, in the first two years of operation the Scheme could cover loose batteries only, followed by the phased introduction of batteries from designated product categories. A set of criteria would need to be developed to determine the product categories and the timing of their inclusion.

This option allows more time to address some of the difficulties associated with the identification of product importers and current import arrangements. A disadvantage of this option is that where a consumer replaces the original batteries in their product they will still want to be able to recycle these batteries, as they would any other loose replacement battery. This means that Collectors operating under the Scheme are likely to receive batteries that are not covered (and therefore not funded) by the Scheme in the early years.

3.4.4 Options to phase the introduction of the scheme

Option 1 All Handheld Batteries are covered by Scheme on commencement

For this option it is proposed that:

- all Handheld Batteries are collected from commencement of the Scheme
- there is no phase-in based on battery type, chemistry or use

Advantages	Disadvantages
• Convenience and ease-of-use for the consumer. Including all batteries from the outset, irrespective of chemistry or whether it is a primary or Secondary Battery means the consumer doesn't have to sort batteries and it removes the confusion and potential safety issues for the consumer with handling and storing different EoL batteries. • Reduces the risk of Free-riders as there is no confusion about the types of batteries or products that are covered. • Encourages consumers to Recycle batteries. • Consumers are unlikely to be able to – or necessarily want to – distinguish between a rechargeable and a non-rechargeable battery, or between the different products that contain a battery. This is likely to lead to the return of batteries that are not covered by the industry fees that would fund the Scheme. • Resource value of secondary batteries will help off-set the processing costs of primary batteries.	• There is a high volume of products containing batteries sold in Australia that cannot be readily determined, creating a complex administrative burden for the new scheme if all are included from the outset. This would increase the costs of the scheme from the outset. • It would substantially increase the number of potential stewards under the scheme, and therefore the risk of a Free-rider problem, as well as the complexity of administering the scheme. • Some products have been designed to make it hard to remove batteries. This may increase the likelihood of products being returned with batteries, which complicates Recycling. • Some batteries contain more valuable metals than others. This may lead to cross-subsidies. • Could be more expensive to do this way as there isn't the chance to 'learn as you go' as with a phased approach. • If all batteries are introduced at once it is harder to pull back if found that something isn't working as consumers will be used to being able to Recycle all batteries. • There is support from some stakeholders for a phased approach. • It is unclear what volume of battery recycling can be supported in Australia. Introducing a major scheme without any phasing in of approach may exceed capacity and / or lead to undesirable behaviour to manage surplus batteries.

Option 2 Two-phase approach starting with loose batteries on commencement

For this option it is proposed that:

- Phase 1 would start with the collection of all loose Handheld Batteries under 5kg; that is, those batteries that are sold separately. Phase 1 batteries are broadly covered by the Customs codes 8506 (primary cells and primary batteries) and 8507 (accumulators). This separates accumulators for automotive/traction purposes but does not currently separate batteries by size.
- Phase 2 would introduce batteries sold with products in the Designated Product categories.

Advantages	Disadvantages
• Provides for convenience and ease-of-use for the consumer. Including all stand-alone batteries in Phase 1, irrespective of chemistry or whether it is a primary or Secondary Battery means the consumer doesn't have to sort batteries and it removes the confusion and potential safety issues with handling and storing different EoL batteries. • Reduces the risk of Free-riders. Consumers are unlikely to distinguish between a rechargeable and a non-rechargeable battery, which is likely to lead to the return of batteries that are not covered by the industry fees that would fund the Scheme. • Resource value of secondary batteries will help off-set the processing costs of primary batteries.	• Some batteries contain more valuable metals than others. This may lead to cross-subsidies. • Could be more expensive to do this way as there isn't the chance to 'learn as you go' as with a phased approach that initially only collected secondary batteries. • If all batteries are introduced at once it is harder to pull back if found that something isn't working. • There is support from some stakeholders for a phased approach to battery collection.

Option 3 Start with the most hazardous batteries

Under this option, *Phase 1* of the Scheme would include hazardous and toxic batteries; that is, those containing lead, mercury and cadmium. Examples of Phase 1 batteries include:

- old primary batteries that contain mercury (manufactured prior to applicable bans in the European Union and US)
- primary button cells containing mercury (most button cells)
- secondary NiCd and Sealed Lead Acid Batteries sold separately
- secondary NiCd and Sealed Lead Acid Batteries sold in products (e.g. power tools and remote control toys).

Phase 2 would introduce all other rechargeable batteries sold separately or with/in other Designated Products. *Phase 3* would then extend the application of the Scheme to all other primary batteries sold separately or with/in other Designated Products.

Advantages	Disadvantages
• Recognises the increased hazard associated with some types of batteries. • Prioritises recovery of substances with the most significant environmental and human health and safety concerns.	• May confuse consumers as they will not always be able to distinguish between chemistry types due to inadequate labelling. • Many consumers will not be willing to spend time trying to identify and sort their used batteries by chemistry, potentially resulting in low participation rates. • Initially, collection points, participating retailers in particular, could find it difficult to reject consumers' returns not covered under the Scheme. • Not clear who would be liable for funding as a significant proportion of these batteries could be legacy batteries with no company owner in existence.

Option 4 Start with secondary batteries

Under this option, *Phase 1* would cover secondary (rechargeable) batteries, sold separately or with Designated Products.

Phase 2 would add primary batteries that are sold separately or with Designated Products.

Advantages	Disadvantages
• Recognises that most rechargeable batteries have an inherently higher resource value than most single-use batteries. • Market share of rechargeable batteries is increasing.	• May confuse consumers as they may not be able to distinguish between rechargeable and non-rechargeable batteries. • Initially, collection points, participating retailers in particular, could find it difficult to reject consumers' returns not covered under the Scheme. • Doesn't address the hazard associated with older non-rechargeable batteries still containing mercury, etc.

For consideration *and feedback–*

- *Which option do stakeholders consider is the best approach?*
- *What concerns are there with any of the options mentioned?*
- *Are there alternative options that could be suggested for consideration by the BIWG?*

3.5 Governance

3.5.1 Producer Responsibility Organisation

The BIWG proposes that the Scheme be administered by one PRO. This allows for ease of governance and provides one entity that is responsible for ensuring the objectives and targets of the Scheme are delivered via the Agreement.

The PRO would be a not-for-profit entity established to oversee the administration and implementation of the Scheme.

The primary responsibilities of the PRO would be to:

- deliver the product stewardship Scheme for EoL Handheld Batteries by developing and implementing the Strategic Plan
- establish the funding arrangement
- collect industry fees to fund the Scheme
- review the level of fee paid
- follow up with identified non-Signatories to the Battery Stewardship Agreement
- follow up with identified Stewards who are not contributing financially
- monitor, audit and report on roll-out of the Scheme and report against targets and performance measures
- undertake education, awareness and information activities to promote the Scheme and the value of EoL Handheld Battery Collections
- undertake reviews of the operation of the Scheme against progress towards meeting the stated performance measures.
- work with governments to remove impediments to the establishment of a sustainable battery Recycling industry and markets for the recovered materials. This could include advocating for complementary measures by government to support the Scheme, such as landfill bans for battery disposal, procurement policies that include product stewardship obligations, and bans on cadmium and mercury in new batteries.

The PRO would potentially be managed by a Board of Management comprising an independent Chair, representatives from the Importers and other Stewards, and others with relevant expertise.

The PRO would be expected to publish an annual report on activities to ensure transparency and accountability to stakeholders, including performance against agreed performance indicators.

While it is considered preferable for Importers and other Stewards to work collaboratively to achieve the Agreement's objectives, the BIWG recognises that some Importers may wish to pursue individual collection or take-back arrangements. However, batteries and products containing batteries from these Importers may ultimately be returned through Scheme Collections and impose additional costs upon the PRO and its Stewards. It would be fair and reasonable to ask individual programs schemes to meet comparable performance targets, standards and annual reporting requirements as Stewards under the Agreement.

3.6 Responsibilities of Stewards

A business, organisation or government body with an interest in any part of the battery supply chain may become a Steward.

Stewards would choose whether or not to pass the fee on or make the fee visible to consumers.

3.6.1 General responsibilities

Where applicable, all Stewards would be expected to be responsible for:

- supporting the objectives of the Scheme
- dealing transparently and ethically with others involved in the battery supply chain, including consumers
- complying with any workplace health and safety and Collection requirements that may be advised by the Collection agent
- promoting the Scheme to the community and other businesses and organisations
- using any branding that may be associated with the Scheme in promoting the Scheme, and in accordance with the conditions of use
- complying with relevant laws and practices, including those that apply to the export of batteries and environment and workplace health and safety
- participating in surveys and data collection efforts that may be undertaken from time to time.

Specific commitments for each participant sector are suggested in Table 2.

3.6.2 Specific responsibilities

The proposed Scheme is based on a shared responsibility approach. This recognises that those who design, manufacture, sell and use batteries or consumer products containing batteries take responsibility for reducing the environmental and social impacts of batteries. The BIWG and some stakeholders have proposed that commitment to the Scheme could be demonstrated through becoming a Signatory to a Battery Stewardship Agreement.

Some Stewards may have more than one role. For example a retailer may also be an Importer. In these circumstances it is proposed that the commitments apply as both an Importer and a retailer.

Table 2 outlines the proposed set of commitments for each category of Steward.

Table 2—Proposed Steward responsibilities by sector

Stakeholder	Stewardship responsibility
Importer	• Contribute funding to support the administration and activities of the PRO to ensure the Environmentally Sound Management of EoL batteries. • Investigate and introduce where feasible design for environment characteristics (including minimising hazardous substances, design for disassembly and ease of Recycling). • Promote Recycling on packaging at point of sale (e.g. advice on how to Recycle). • Label the chemistry of batteries to facilitate sorting (consistent with global requirements). • Provide data to the PRO on the types and numbers imported in each Data Year. • Only import batteries that are compliant with any relevant Australian Standards, whether the batteries are loose or contained in a product • Promote participation in the Scheme to businesses and other organisations to which they provide batteries.
Retailers	The following are in addition to any commitments that a Retailer may have as a Brand Owner or Importer: • Support in-store Collection programs (e.g. by providing space for collection bins, supervision and reverse logistics). • Encourage suppliers to help achieve the objectives of the Scheme. • Educate consumers at point of sale about Collection and Recycling services. • Promotion through existing marketing channels. • Undertake regular reviews of arrangements with transporters and Recyclers. • Provide data on request in relation to batteries collected (eg. brands, customer usage, etc).
Transporters	• Ensure all EoL batteries collected from retail and other outlets are taken to a Recycler or other facility where the Environmentally Sound Management of the batteries can be guaranteed. • Ensure all relevant approvals and licenses for the transport of batteries are complied with.
Local government	• Support Collection facilities at municipal sites. • Ensure that batteries collected through hazardous household waste programs are Recycled. • Raise awareness of residents about Collection and Recycling services. • Ensure Council procurement policies include consideration of Recycling services.
State government	• Monitor and enforce compliance with hazardous waste and dangerous goods regulations. • Provide R&D and/or other support funding. • Educate the public about Collection and Recycling services. • Ensure Government procurement policies include consideration of Recycling services • Consider the development of complementary and supporting legislation where applicable (for example, landfill bans).

Federal government	• Implement relevant aspects of the Act (e.g. voluntary certification or co-regulation). • Consider an import ban on batteries containing mercury or cadmium (consistent with EU requirements). • Monitor and enforce compliance with the Hazardous Waste Act in relation to exports, balancing market requirements with the need to support development of local Recycling facilities. • Ensure Government procurement policies include consideration of Recycling services.
Recyclers	• Comply with all relevant standards and regulations. • Provide data to the PRO on the number, type and fate of batteries received and Recycled.
Organisational (workplace) consumers	• Provide a Collection point for workplace batteries. • Provide information to workers about the Collection and Recycling of batteries. • Comply with all relevant standards and requirements for Collection signage and safety.
Importers pursuing individual programs	• Achieve comparable outcomes to those of other Importers that are Stewards under the Scheme. • Responsibilities as for Importer, except for funding and promotions that would likely be internalised. • Comparable Strategic Planning and annual reporting requirements to those of the PRO and Stewards.

3.6.3 Fee structure

Key considerations for funding arrangements include:

- the funding mechanism should be relatively easy to administer
- the funding mechanism should be transparent to all Scheme participants
- the contribution should reflect, as far as possible, the actual costs of the Scheme
- the contribution should reflect the nature of the different batteries in terms of volume on the market, weight, hazard and resource value
- a sinking fund may need to be established in the early years when the Recycling rates are lower or at the start of the Scheme to cover those batteries that are already in Australia prior to commencement of the Scheme
- the point at which the fee is collected.

Funding contributions would be based on the quantity of batteries the Importers placed on the market in the previous financial year. The BIWG is considering three options that may be suitable as a funding arrangement for the Scheme.

Option 1: Fee on imports by weight using an Equivalent Battery Unit ratio

In order to provide a standardised measure to help calculate the fee payable (and also assist in setting thresholds, targets and performance measures) a ratio system could be used. Similar to the tyre ratio of Equivalent Passenger Units, an Equivalent Battery Unit (EBU) could be used. This ratio takes into consideration the various factors that differentiate batteries, such as weight, chemistry and quantity in the market, and allocates a number relative to a base figure. This provides for a consistent measure as it internalises externalities that may not be easily accommodated by other approaches.

As an example of application of this approach an EBU could be equivalent to one standard AA non-rechargeable alkaline battery. Currently, AA batteries represent the largest proportion of the battery market by number (43 per cent) and represent the second highest proportion by weight (22 per cent)[4]. The proposed EBU ratios are provided in Appendix 5.

With a standardised unit such as this, the level of contribution can be easily calculated per EBU entering the Australian market. Contributions would be based on a fixed rate fee per EBU, with the EBU ratio capped for larger batteries within the scope of the Scheme. The fixed fee is yet to be determined and would be established by the PRO in agreement with the PRO Board.

Example 1
Using EBU ratios to calculate funding contributions
For example:
Fee = 0.05 cents per EBU
AA EBU ratio = 1
AAA EBU ratio = 0.5

- In the Data Year prior to commencement of the Scheme, an Importer puts 300,000 AA batteries and 150,000 AAA batteries into the Australian market.
- Their funding contribution for Year 1 of the Scheme is $15,000 for the AA batteries and $3,750 for the AAA batteries, making their total funding contribution $18,750 for that Data Year.
- If for the next Data Year the same company puts 450,000 AA and 100,000 AAA batteries on the market their funding contribution would be $22,500 for the AA batteries and $2,500 for the AAA batteries. This would make their funding contribution for that year $25,000.

Option 2: Fee on imports using a fixed rate per tonne

An alternative funding model is to charge a standard fixed fee per tonne of imported batteries. This would mean that the fee would potentially need to be set at an average across all imported categories or differential fees would apply depending on the battery categories imported. This approach disadvantages Importers of lighter batteries. Although significantly more lighter batteries (by number) enter the market per tonne, number entering the market is one of many factors that needs to be considered when setting a fee amount. For a fee per tonne, the levy needs to be averaged over a battery weight range from 12g to 5kg in order to account for the characteristics of batteries across all categories. This means that it may be disproportionate to the nature of the battery – even allowing for the potentially greater number of lighter batteries that will require EoL management.

Example 2
Using a weight-based calculation to calculate funding contributions
For example:
Fee = 0.50 cents per tonne (averaged across all battery categories within scope)

- In the Data Year prior to commencement of the Scheme, Importer A imported 20,000 tonnes of AA, AAA and batteries.
- Their funding contribution for Year 1 of the Scheme would be $10,000.
- In the same Data Year, Importer B imported 20,000 tonnes of power tool batteries. Their funding contribution is also $10,000 for that year.

[4] Warken ISE 2010, *Final report, Analysis of Battery Consumption, Recycling and Disposal in Australia*.

Option 3: Actual costs – cost recovery

A third funding option is to charge Importers based on the actual costs of collecting and reprocessing the batteries and of administering the PRO. This would be allocated according to market share of the Importers with funding obligations (i.e., above the specified threshold) and adjusted to 100 per cent to reflect the absence of those parties without funding obligations.

Example 3
Using a market share calculation to calculate funding contributions
For example:

- Actual Scheme costs (averaged) annually are around $15 million.
- In the Data Year prior to commencement of the Scheme, Importer A has a 56 per cent share of the market. Their funding contribution is $8.4 million.
- Importer B has a 12 per cent market share. Their funding contribution is $1.8 million.

It is proposed that funding contributions for any of these first three options would be calculated on data from the previous Data Year. This would mean that contributions are likely to change from year to year. There would also be a mechanism of review for the fee to ensure it remains at the appropriate level. This fee may or may not be passed through the supply chain to the consumer.

Option 4: Fixed fee based on turnover

This funding option proposes a fixed fee, irrespective of quantity, weight or chemistry of the battery. The advantage to this option over the previous three is that the contribution remains fixed from Data Year to Data Year, providing more consistency for budgeting for Importers.

The fixed fee could be based on a business size threshold, for example turnover in Australia, to ensure that small companies do not contribute an amount disproportionate to their size.

Fixed fee contribution
For example:

- Importers with an annual turnover of less than $5million would contribute $50,000 per year.
- Importers with an annual turnover of $5million to less than $20million would contribute $250,000 per year.
- Importers with an annual turnover of greater than $20million would contribute $500,000 per year.

National and international examples of fee structures

- MobileMuster charges a fee per mobile phone unit (i.e. includes handset, battery , charger) imported into Australia. A total of $0.42/unit is charged which is split between the manufacturer ($0.30/unit) and the service provider ($0.12/unit) based on their market shares. Manufacturers self report imports and are invoiced monthly. Service providers are invoiced quarterly in arrears.
- The National Television and Computer Recycling Scheme apportions liability to individual parties based on the estimated weight of goods covered by the scheme that the party imports in a financial year. The scheme then requires the liable party to join an approved Co-regulatory Arrangement (CA) to meet its recycling responsibilities. It is a matter for individual approved CAs to determine the funding arrangements. ANZRP/TechCollect, for example, charges based on the total costs of running the program. This is shared between members on the basis of the government calculation of liability by weight imported.
- The Tyre Scheme is a fixed fee charge per EPU and is capped at a maximum amount for the large earthmoving and mining tyres.
- In addition to an agreed fee all members pay to Planet Ark for certain services (mainly marketing, PR, brand name and auditing), Cartridges for Planet Ark (C4PA) charges on the basis of quantity collected and Recycled by brand – the more of a particular brand that is collected the more that Brand Owner pays.
- Call2Recycle (US) charge a differential fee per battery, based on size/weight and chemistry of batteries sold each quarter:
    - For rechargeable batteries, for example, the fee for a nickel-cadmium AA battery is 0.012 cents (US), while the fee for a D battery is 0.073 cents (US)
    - For primary batteries, the fee is 0.80 cents (US)

For consideration and feedback—

- *The appropriateness of using an EBU as opposed to a per tonne calculation*
- *The reasonable fee amount*
- *Whether the fee should be charged on batteries sold into the market or batteries collected and recycled*
- *Point of collection of the fee – point of import or point of sale*
- *What makes up the contribution – comprised of fixed fee contribution (per EBU or weight based) + one-off or annual membership fee or fee per EBU/tonne only?*
- *Is weight an appropriate measure for determining the fee payment? Would a differential based on weight be too complicated for importers/manufacturers with multiple battery products?*
- *Is it appropriate to apply a retrospective fee to cover batteries and products containing batteries that are already in the marketplace? If so, how should this be calculated?*
- *Appropriate threshold*
- *For an EBU system:*
    - *Appropriate cap for the EBU ratio for larger batteries*
    - *Where would the cap be set – e.g., is a larger battery one that weighs more than 1kg or can we categorise 1 – 3kg and 3 – 5kg?*

3.7 Delivery of the Scheme

A key principle of the Scheme is that any arrangement delivers a convenient and easily accessible way for consumers to Recycle Handheld Batteries. There are already a number of Collection points in place for batteries and other end-of-life products, such as mobile phones, located at retail outlets and state and local government premises. Collection points for the Scheme should incorporate, as far as possible, existing points. The Collection network for the Scheme is likely to incorporate:

- Retail drop-off points, including for example, battery and electronic product stores, supermarkets, hardware stores, service stations, newsagents and stationery stores
- Local government drop-off points, including for example, transfer stations and council offices
- Kerbside collection offered by local government or a private contractor. There are a number of different ways a kerbside collection could be offered.
- Direct collection from organisations and companies that generate large quantities of batteries

Multiple delivery mechanisms would provide for competition that would help to minimise costs. This approach would also provide consumers with some choice around how they Recycle their batteries. A number of Collection points are likely to be co-located at premises where there are already collections for e-waste, mobile phones and other items. This would make it more convenient for consumers and minimise potential double-handling and Collection and transport costs.

Different Collection containers may be required for some battery types to ensure compliance with relevant transport and workplace health and safety requirements. Table 3 outlines some of the delivery mechanisms that are already in use in Australia and overseas.

Table 3— Australian and international collection models

- **Back-to-retail (Australia)**
  - BatteryWorld
    Battery World stores and franchises provide a free recycling service through their national network of stores.
  - BatteryBack (Bunnings, Coles, Officeworks, other retailers)
    Sustainability Victoria funds a battery collection program in Victoria for handheld batteries, with retail partners including Bunnings, Coles and Officeworks. There are approximately 40 collection points in Melbourne.
  - Aldi
    Free public collection bins are located in 300+ ALDI stores in NSW, ACT, Qld and Vic for AA, AAA, C, D and 9V batteries. Planet Ark works with ALDI to promote the program and it is independently audited.
- **Back-to-retail (US)**
  - Call2Recycle collects rechargeable batteries and mobile phones in the United States and Canada.
  - Collection is primarily retail but also from Councils and organisations
  - In Canada the Scheme also collects single-use batteries including alkaline and lithium primary.
- **Municipal collections**
  - Council buildings and schools in Perth
  - Waste transfer stations
  - Hazardous household waste collections
- **Direct collection from organisations**
  - Pre-paid boxes and pails

- **Kerbside collections**
  Ontario 'Blue Box' Recycling
  - A twice-yearly battery collection as part of regular kerbside waste services in Durham Region (Canada).

- **Mail-back**
  The Big Green Box
  - The Big Green Box is a United Nations-rated corrugated container that has a 43-pound weight capacity. Once The Big Green Box is purchased, all shipping, handling, and Recycling fees are included. Boxes are ordered on-line and delivered, pre-assembled, to homes and offices. Once the box is filled it can be taken to any FedEx location.

3.8 Safety and environmental issues

While there are likely to be numerous delivery mechanisms for the Scheme, any delivery needs to be undertaken to ensure participants meet and maintain minimum safety and environmental standards and that these are also met by other e-waste arrangements that handle batteries.

ABRI's safety guidelines are available and provide a useful starting point to help understand the safety issues associated with the storage, collection, handling and processing of the different types of Handheld Batteries. An identified gap in the guideline information is for the handling of damaged and leaking batteries.

Other options to provide more detailed guidance for participants include the following:

- extension of the current e-waste standard (AS/NZS 5377:2013) to provide more information on responsible collection, storage, handling, transport and processing of batteries
- development of a new standard specifically for battery Collection and Recycling.

Enforcement of standards by the PRO from the beginning of the Scheme is necessary in order to avoid some of the problems experienced by other product stewardship Schemes.

Standards would need to differentiate between different activities, for example, Collection, aggregation/storage, Recycling and transport. Auditing should be undertaken by an external organisation accredited by the Joint Accreditation System of Australia and New Zealand (JASANZ).

Auditing and monitoring requirements would form part of the Scheme framework and a PRO would be required to report against compliance with standards.

3.9 Scheme performance indicators and targets

A set of performance indicators is needed to ensure that the Scheme is accountable and transparent and that arrangements under the Scheme are achieving the same outcomes and measures. Stakeholder feedback to-date has indicated the Scheme must incorporate clear targets. Some of these could be phased-in over time as more or better information becomes available.

The objectives of the Scheme are to 'reduce the environmental impacts of batteries at EOL, including the release of hazardous substances, by diverting batteries from landfill' and to 'optimise resource recovery from EOL batteries'. Key targets will need to relate to these objectives.

Some possible indicators and targets for the Scheme are:

3.9.1 Collection target

This indicator measures the extent to which batteries are being diverted from landfill and Recycled. One way of measuring the diversion rate is to divide the quantity of batteries collected for Recycling by the quantity of batteries 'available for Collection'. This methodology will need to be investigated in more detail following the completion of the battery mass balance on early 2014.

A recent report to the European Portable Battery Association[5] recommends use of the quantity 'available for Collection' rather than 'placed on the market' as the denominator to avoid market distortions. This is due to the potentially long lead time between purchase, use and end-of-use for many batteries. The resulting rate could be quite low proportionate to the quantity that is placed on the market, but reasonable against the quantity that is at EoL.

Any targets need to be:

- specific in relation to scope – particularly for Lead Acid Batteries and the inclusion, or not, of embedded batteries
- developed with an understanding of hoarding for different battery and product types
- able to incorporate data on batteries that are collected via other Schemes
- flexible and realistic in the timeframes for achieving the targets

Collection targets would need to be set initially proportionate to the potential pent-up demand for battery Recycling, that is, how many batteries are currently Informally Stockpiled and what is the likelihood of these batteries being presented early in the implementation of the Scheme. Balancing the demand side is the capacity of the Recycling sector to manage the recovered batteries, from a sorting, storage and processing perspective. Australia also has a low base line, with only 5 per cent of Handheld Batteries currently Recycled.

Participants in the August 2013 stakeholder workshop indicated that a minimum Collection target of 50 per cent would be needed to give consumers confidence that the Scheme was achieving change. However, this target is high by international standards and may not be achievable in the short to medium term.

Separate Collection targets could also be proposed for Primary and Secondary Batteries, either collectively or by Steward. This would also provide an indication of the number of batteries that were being recovered that were orphaned or belonged to Free-riders.

Targets could be adjusted for the out years based on the results of the reviews.

3.9.2 Landfill disposal target

This indicator measures the weight of batteries being disposed to landfill. One method of measurement could be during landfill and kerbside bin audits where these are already undertaken.

[5] Perchards and SagisEPR 2013: *The collection of waste portable batteries in Europe in view of the achievability of the collection targets set by the Battery Directive 2006/66/EC*. Report to the European Portable Battery Association

The target could be proposed as a decreasing percentage of batteries as a total in the waste stream. For example, if the baseline is currently 95 per cent of Handheld Batteries being disposed of to landfill then a disposal target may be to decrease landfill by 5 per cent annually based on landfill and bin audits.

Again this may be split by battery type and Importer.

3.9.3 Recycling Efficiency (i.e., Recycling/Recovery)

This indicator measures the efficiency of the Recycling process in recovering battery material components for reuse and is normally expressed as the average percentage Recycled by weight. Targets should recognise the extent to which batteries contain hazardous materials (that is, higher targets for batteries containing lead and cadmium) and best available Recycling technologies.

The RecyclingRecycling Efficiency targets in the EU Battery Directive are 65 per cent for NiCd, 75 per cent for ULAB and 50 per cent for other batteries. The EU is currently finalising the methodology for calculating the Recycling Efficiency rate. Further work is needed in this area, although the EU methodology could potentially be adapted for Australia.

3.9.4 Net environmental benefit

This indicator would reflect the issue raised by various stakeholders of wanting to ensure that battery product stewardship produces a net environmental benefit, as determined by the LCA method. Some stakeholders stress the needs to ensure that the Scheme produces a net environmental benefit and support including LCA as part of a review of the Scheme's progress. At present there is likely to be insufficient Australia-specific data available to measure the environmental impacts of a national stewardship program for handheld batteries.

A 2011 study using three LCA methods[6] by researchers at the Massachusetts Institute of Technology (MIT) determined that production accounted for an overwhelming proportion of environmental impacts across various parameters (Table 4). In the report, 'Production' includes mining and refining of raw materials, battery manufacture, distribution and packaging while 'End of Life' includes collection, transportation, processing and recovery of materials for use or disposal through landfill.

Table 4: Life Cycle Impact of 1kg Weighted Average Alkaline Battery, Using Three LCA Methods

PHASE	Cumulative Energy Demand (CED)	Global Warming Potential (GWP)	Damage to Human Health	Ecosystem Quality	Damage to Resources
% Production contribution	96%	77%	92%	71%	96%
% End-of-Life contribution	4%	13%	8%	29%	4%

Source: MIT 2011

The MIT study concluded that the environmental impacts of batteries over their life cycle are primarily from the production of raw materials, with production of manganese dioxide, zinc and steel having the highest impacts. The benefits of recycling can be optimised by recovering more than just steel or zinc, and for its metal value (i.e., replacing virgin material). The environmental impacts of the collection stage depend on whether consumers need to make a dedicated transport

[6] MIT 2011, *Lifecycle Impacts of Alkaline Batteries with a focus on End of Life*, Massachusetts Institute of Technology.

journey. The scenario with the lowest impact was the addition of batteries to an existing kerbside collection system. Municipal and retail drop-off systems were also modelled.

An earlier UK study[7] considered EOL options for all portable batteries including alkaline, zinc carbon, lithium, nickel cadmium, nickel metal hydride, lead acid and other battery chemistries. Unlike the MIT research, the UK study considered the financial costs of different scenarios as well as their environmental impacts. The study concluded that increasing recycling is beneficial to the environment due to the recovery of metals and avoidance of virgin metal production.

Raw materials such as steel, manganese and zinc are mined and processed in Australia, shipped overseas for production and are (presumably) shipped back in finished battery products. To the extent that Australian raw materials are used by battery manufacturers overseas, resource extraction benefits (including reduced land degradation, waste and energy use) will potentially occur in Australia as well.

LCA is quite complex and highly contingent on scope and options examined. However, the MIT study in particular provides clear guidance on the variables that have most influence on environmental outcomes and need to be considered in the design of the Scheme. Critical issues include the need to optimise recycling efficiency through the use of best practice recycling technologies, and the need to minimise transport impacts. Once the Scheme is in effect and has been operating for several years, LCA could be used to help measure environmental impacts of the Scheme and determine whether any changes need to be made to optimise environmental outcomes.

3.9.5 Consumer accessibility

This indicator measures the convenience to the consumer of a battery Collection service. This is relevant to the results of a Planet Ark survey in which 75 per cent of respondents indicated that they would Recycle if it was easy to do so. Measurement options include:

- Total number of public drop-off points within a certain distance of people. For example 90 per cent of people in an area live within 20km of a drop-off point. Different metrics could be used for metro and regional areas.
- Location of drop-off points
    - Number of battery retailers providing a drop-off point
    - Number of co-located drop-off points
- Number of permanent and temporary drop-off points
- Number of collection methods available

The *Product Stewardship (Televisions and Computers) Regulation 2011* requires the provision of reasonable access within a specific timeframe. However, this may not be an appropriate model to use for batteries as they are smaller and can be stored for a longer period and transported longer distances by the consumer without too much inconvenience.

Collection points for batteries may also be easier to provide for a greater number of retailers and other premises, as space is not as great a concern. This would give greater choice to the consumer in how they wish to return their batteries.

[7] Available at http://www.epbaeurope.net/090607_2006_Oct.pdf, accessed April 2013.

3.9.6 Consumer awareness and behaviour

This indicator measures the effectiveness of promotion and marketing programs by the PRO and Stewards. Measurement options include:

- Percentage of surveyed consumers who are aware of the Scheme or that they can recycle batteries through the Scheme
- Percentage of surveyed consumers who either Recycle, hoard (Informal Stockpile) or throw away (i.e., method of disposal)
- Audits of collection bins to assess the level of contamination (that is, non-battery products) and batteries that are not covered by the Scheme

3.9.7 Participation by Importers

This indicator measures the extent to which Importers are meeting their commitments as Stewards. Measurement options include:

- Number of Importers providing financial support
- The market share percentage held collectively by all of the companies providing financial support
- Number of Importers also providing a drop-off service to their customers (where the Importer is also a retailer)

This indicator will be an important measure for the review.

3.9.8 Uniform labelling by chemistry

This indicator measures the extent to which batteries are labelled by chemistry to support effective and efficient sorting processes at EoL. Improved labelling would:

- Increase efficiency and reduce sorting costs
- Increase the Recovery of materials by improving the effectiveness of sorting, which would improve environmental outcomes.

The EU Directive requires batteries containing lead, cadmium or mercury to be labelled. The Japanese Law for Small Rechargeable Batteries requires labelling of nickel cadmium, nickel metal hydride, lithium ion and lead batteries.

For consideration and feedback—

- *Are these indicators appropriate and which are necessary?*
- *Are there other performance indicators and targets that may be appropriate?*

3.10 Promotion of the Scheme

A comprehensive promotion and awareness program is essential to raise both battery Importer and consumer awareness of the Scheme.

The aim of promoting the Scheme with Stewards is to ensure that everyone is aware of their responsibilities. The aim of a consumer awareness program is to change consumer behaviour in relation to management of their EoL batteries.

In 2010 a survey by Planet Ark found strong consumer support for battery Recycling, with 80% of respondents saying that EoL batteries should be Recycled; and 75% of respondents saying they would 'definitely' Recycle batteries if there was an easy way to do it. 36% of respondents also indicated that battery manufacturers should be responsible for bearing the cost of battery Recycling.

However, although there is strong support for battery Recycling, a number of challenges exist. There is often a disconnect between what people say they will do and their actions. For example, consumer surveys in Europe highlight a significant gap between the percentage of consumers who are aware of the need to separate batteries for Recycling and their actual disposal behaviour.[8]

In Australia, the MobileMuster program invests a significant proportion of its budget towards marketing and education to help overcome people's hoarding habits – that is, to encourage people to part with their old phones.

The PRO would be responsible for delivering the marketing and awareness messages.

An adequate proportion of the budget would need to be allocated towards raising consumer awareness, as well as promoting the Scheme to Importers, retailers, and governments. It is anticipated that a number of different avenues and media would be used in order to obtain sufficient coverage and consumer saturation to start changing behaviours. The Plan would contain the expenditure details for promotion of the Scheme.

Awareness programs must provide a consistent message. The Plan should outline the message themes and target areas for promotion campaigns.

Wherever possible, promotion and awareness should be undertaken in conjunction with other programs, including:

- Other e-waste collection services
- Local government communication programs
- State government programs

3.11 Commencement, duration and review

The Scheme will commence as soon as practical after it has been agreed. There are several options for the duration of the Scheme including:

- A fixed timeframe. For example, the NTCRS has a life of 10 years. There is also a built-in review period.
- Open-ended with regular review periods. A number of existing Schemes, including MobileMuster and DrumMuster, have no set time period for their operation.

Irrespective of whether there is a set duration for the Scheme, regular reviews will be essential. The first review should be early enough so that any issues and concerns can be addressed but not so early that there may be data gaps which make a review incomplete. It is suggested that the first full review should start two years after commencement, with subsequent reviews every three years following.

[8] Perchards and SagisEPR 2013

The independent two year review should indicate whether modifications to the Scheme are required, or whether alternative approaches will need to be adopted.

For consideration and feedback—

- *What are appropriate measures address free riders if the initial review determines that satisfactory progress has not been made on a voluntary basis against agreed performance measures?*
- *What would be an appropriate percentage of market share that would be considered as satisfactory for engagement with the Scheme?*

4. Conclusion

Development of a national product stewardship approach for handheld batteries has been made a priority by state and federal Environment Ministers. This paper presents a number of options, and some recommendations, for the design of a handheld battery product stewardship scheme. The BIWG welcomes feedback from stakeholders on all of the options and ideas proposed in this paper.

The BIWG provides the proposed Scheme as a voluntary, industry-led approach to Handheld Battery stewardship comprised of:

- A Battery Stewardship Agreement that would provide a collective written commitment between Stewards for developing, funding and implementing the Scheme.
- A 5-year Strategic Plan to be developed jointly by the PRO and Stewards that would provide more detail for how the PRO and Stewards will implement the Scheme in accordance with the Agreement.
- Transparent annual reporting of performance against the Strategic Plan.
- Importers seeking to meet the objectives of the Agreement through their own arrangement rather than through an industry-wide PRO would be expected to deliver a comparable Strategic Plan and annual reports to Stewards under the Agreement.

The proposed Scheme would apply to all Handheld Batteries less than 5 kg with the exception of embedded batteries.

The proposed Scheme would provide more immediate action with lower costs and greater certainty compared to immediate pursuit of a co-regulatory approach, and provide the flexibility to modify and improve the Scheme in order to improve performance and reduce costs, especially in the first few years of implementation.

Feedback on this discussion paper is requested by **Monday 31 March 2014**. Where possible, please make your feedback and comments as detailed as possible in order for the BIWG to fully consider any new options or proposals for change. Comment and feedback can be provided to the BIWG Secretariat by mail or email:

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Mail:
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Appendix 1

Summary of Rationale for Battery Product Stewardship from *Business and Public Policy Case for Battery Stewardship (handheld batteries)* (MS2 2013)

Sustainability Victoria (SV) commissioned Martin Stewardship & Management Strategies Pty Ltd (MS2) to develop the public policy and business case for battery product stewardship in Australia. The project was conducted in partnership with the Australian Battery Recycling Initiative (ABRI) and the Global Product Stewardship Council (GlobalPSC) to draw upon lessons from overseas best practice and tailor these to Australian conditions.

It has been estimated that less than 5% of the handheld batteries currently sold in Australia are recycled. Several Australian recyclers sort batteries by chemistry type, however most recovered handheld batteries are currently exported for material reprocessing. Recyclers interviewed for the study felt that recovered volumes are close to the minimum required for domestic reprocessing of lithium ion batteries to be commercially viable. Other reprocessing technologies could be viable given sufficient supply. The lithium and cobalt recovered from lithium ion battery recycling are key raw materials for battery producers.

Virtually all stakeholders consulted expressed support for product stewardship for handheld batteries in Australia. Principal battery manufacturers consulted, representing Energizer and Duracell and accounting for approximately 70% of the Australian market, expressed support for the environmental objectives of product stewardship for batteries and pointed out that hazardous materials had been reduced in handheld batteries over the past few decades. Their support for specific product stewardship approaches was, however, conditional upon the approaches yielding a net life-cycle benefit and addressing the 'free rider' problem. These battery manufacturers also reinforced that the current lack of recycling infrastructure in Australia affects the business case for battery stewardship.

Handheld batteries satisfy the objects and criteria of the Act for designating products potentially subject to product stewardship. Key considerations include potential to significantly reduce impacts that the products have on the environment, presence of hazardous substances in the products and potential to significantly increase the conservation of materials used and resource recovery.

Battery product stewardship can reduce the risk of environmental and health impacts of certain heavy metals if disposed of in landfill or as contaminants in other recovery streams, e.g. composting. Removal of hazardous wastes, including batteries, from general waste would support the recovery of organic materials through facilities that use alternative waste technologies (AWT) such as anaerobic digestion and composting. Diversion of residual waste from landfill to AWTs is becoming a higher priority for all governments under the National Waste Policy. These facilities recover organic materials from residual household waste and need to strictly control potential contamination from hazardous household products such as batteries.

Various state and local governments expressed support for a nationally consistent approach to batteries (based on co-regulatory product stewardship).

Australia's existing National Television and Computer Recycling Scheme (NTCRS) provides useful insight in developing a national approach to battery stewardship. A battery program should ideally

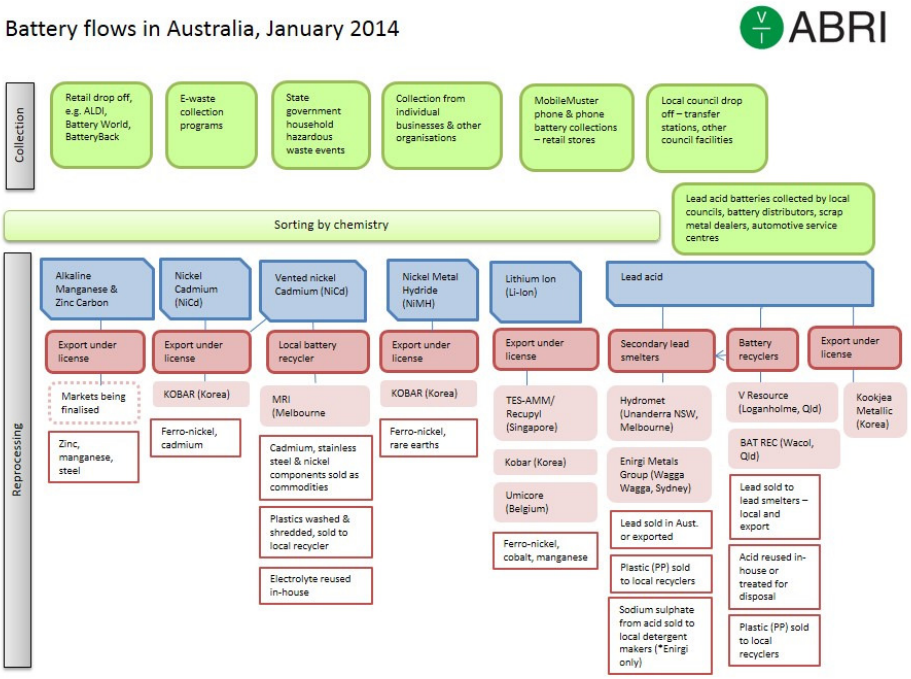
be consistent with the NTCRS and could enhance the NTCRS by improving economies of scale and simplifying education efforts if the programs are effectively integrated. Approved co-regulatory arrangements under the NTCRS already receive large quantities of batteries in their collections.

Information on availability of battery recycling is consistently sought by consumers wanting information on recycling specific products. Several retailers already operate battery collections, even though they are seen as a net cost, as a means of providing a service to consumers and increasing foot traffic to their stores.

Reduced environmental impacts of extraction and processing, especially in China and Korea where many raw materials are initially sourced and where many environmental management practices are relatively poor, could also result.

Appendix 2

Battery flows in Australia as at January 2014



Appendix 3

Battery Implementation Working Group membership and Terms of Reference

Australian Battery Recycling Initiative

Australian Industry Group

Australian Information Industry Association

Australian Mobile Telecommunications Association

Australian Local Government Association

Consumer Electronics Suppliers Association

Australian Government Department of the Environment

Department of Environment and Heritage Protection (Queensland)

Global Product Stewardship Council

Sustainability Victoria

Brand Owner representation:

- Canon
- Energizer
- OfficeWorks
- Proctor and Gamble
- Samsung

BATTERY IMPLEMENTATION WORKING GROUP

TERMS OF REFERENCE

September 2013

In April 2013 the COAG Standing Council on Environment and Water (SCEW) agreed to place development of a model product stewardship scheme for end-of-life handheld batteries on the work plan for 2013/14. Ministers agreed that there was a case to be made for developing a scheme as there is potential to increase the recovery of resources and to reduce impacts on the environment through increased collection and recycling of end-of-life batteries. It has been estimated that only 5% of the 12,000 tonnes of end-of-life batteries produced every year are recycled.

In June 2013 the Australian Government released the second annual Product Stewardship product list made under the Product Stewardship Act 2011 (C'wlth). Publishing this list provides certainty to the community and business about what is being considered for coverage under the Act.

In determining the final product list, the Parliamentary Secretary for Sustainability and Urban Water sought advice from a range of sources including the Product Stewardship Advisory Group (established under the Act), the SCEW, jurisdictional priorities, industry stakeholders, and international obligations.

End-of-life handheld batteries of less than 2kg in weight are a class of product approved by the Parliamentary Secretary for listing.

On 13 August 2013, battery stakeholders and government representatives met to discuss the development of a battery product stewardship scheme. Specifically, the workshop considered four questions in relation to a scheme—

1. the vision for the program

2. the scope (which types of batteries should be covered and why)

3. the form of the scheme and

4. effectiveness of the program in addressing the public policy and business case considerations

Battery manufacturers, brand owners, retailers, recyclers, industry associations and governments indicated a desire to develop a product stewardship scheme. The form and scope of the scheme require further discussion and this will form the basis of the work of the Battery Implementation Working Group.

The work of the IWG will take place in the context of the National Waste Policy: Less Waste, More Resources, the Product Stewardship Act 2011 (C'wlth) and the SCEW work plan.

Role of the Battery Implementation Working Group

The role of the Battery IWG is to facilitate the development of a model product stewardship scheme for end-of-life batteries.

Specific activities to be undertaken include:

- developing the vision, goals, targets and timelines for a product stewardship scheme
- determine the scope of the product stewardship scheme
- helping identify stakeholders under the scheme
- identifying the scheme's funding arrangements
- determining the scheme's governance and administrative arrangements, including a business plan
- identifying preliminary research and market development priorities to be addressed by the scheme, including the potential for domestic recycling
- determining targets and performance indicators for the scheme, and associated timelines
- developing a communications strategy to promote the scheme and raise awareness among the community and businesses
- assist in broader consultation on a model scheme

In order to achieve this, the IWG will:

- develop a work plan for its activities over the next 12 months
- develop a stakeholder management plan and engage with a wider group of stakeholders as required
- develop a risk management plan
- advise on the design and management of studies to determine the stocks and flows of batteries and market share information to help determine the extent of the potential free-rider issue.

Members

The Battery IWG will comprise ten permanent members, including an independent Chair Mr Russ Martin. The following organisations will be represented by one member (alternate members may be nominated):

1. Australian Battery Recycling Initiative (ABRI)

2. Consumer Electronics Suppliers Association (CESA)

3. Australian Mobile Telecommunications Association (AMTA)

4. Australian Industry Group (AiG)

5. Australian Information Industry Association (AIIA)

6. Australian National Retailers Association (ANRA)

7. Queensland Government through Department of Environment and heritage Protection (EHP)

Attachment 1—2nd IWG meeting

Version 03 – amended 13 September 2013

8. Australian Government through the Department of Sustainability, Environment, Water Population and Communities (SEWPaC)

9. Victorian Government through Sustainability Victoria (SV)

If the Battery IWG requires expert advice, attendance of other people may be required on an 'as needs' basis. If identified during the meeting, this may be agreed in-session; otherwise that attendance will be determined in advance at the discretion of the Chair. The Chair may also invite representatives from other organisations as observers.

Where a member cannot attend, a nominated alternate will be accepted as the representative of that member organisation. Observers may also attend at the Chair's discretion.

Members will be required to fund their participation on the IWG.

Secretariat support

EHP will provide secretariat support for the Battery IWG. This role includes circulation of the agenda, record of meeting and action items, as well as any papers that are required for discussion at the meeting. The Secretariat may also prepare papers for discussion.

Frequency and conduct of meetings

The Battery IWG will meet regularly face-to-face to progress its work. It is proposed to meet every eight weeks – potentially in September and November 2013, and February, April and June 2014. However, the need for a meeting will be assessed and members advised of any change. Teleconferences will also be used where appropriate to minimise time and expense to members and other participants.

IWG members will be provided with an agenda prior to each meeting and a record of meeting and action items as soon as possible after each meeting. All attempts will be made to circulate any papers for discussion prior each meeting.

Quorum

For a meeting to proceed a quorum is required. For the IWG a quorum will consist of four members plus the independent chair. The quorum can constitute alternate attendees nominated by the representative member.

Reporting and consultation

The Battery IWG is not a decision making group. It will regularly report and provide other relevant material, through the Chair and Secretariat, to the wider Battery Steering Group and, as appropriate, other stakeholders, and seek input and feedback.

Members of the IWG are expected to engage with the stakeholders they represent to canvas issues and ideas, and they are expected to be in a position to speak on behalf of their members at IWG meetings.

IWG members can form their own consultative arrangements within their member networks. The government members will consult with other state governments through a jurisdictional product stewardship working group that reports to the Senior Officials Committee.

Members may also provide specific information or reports in relation to a particular sectoral position on an issue.

Confidentiality

All material associated with the IWG is not to be circulated or discussed publically unless otherwise agreed by the IWG that it can be distributed for broader availability. IWG members may use material to consult within their own membership. Confidential material will be marked as such and will be designated for in-group use until otherwise agreed by the members.

Sunset provision

The Battery IWG is established until October 2014.

SECRETARIAT CONTACT

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Appendix 4

Product stewardship approaches in Australia

Voluntary

There are a number of successful voluntary product stewardship Schemes operating in Australia. For example:

- MobileMuster has been running since 1999 and is responsible for collecting and Recycling mobile phones, phone batteries and accessories
- Fluorocycle, which started in 2010 as a partnership between government and industry, aims to reduce the amount of mercury-containing lamps from being disposed to landfill by increasing the Recovery of these lamps from the commercial and public lighting sectors. FluoroCycle is now fully funded and administered by the lighting industry through the Lighting Council of Australia.
- DrumMuster has been running since 1998 and is a national product stewardship program for the collection and Recycling of eligible, pre-cleaned agricultural and veterinary chemical containers.

The *Product Stewardship Act 2011* provides for Scheme administrators to apply for voluntary accreditation of their Schemes.

Co-regulatory

Co-regulatory product stewardship under the Act is a combination of industry action and government regulation. The national television and computer Scheme is an example of co-regulation. The *Product Stewardship (Televisions and Computers) Regulation 2011* was developed to provide the outcomes and requirements to be met by industry. Industry then has the flexibility to determine how best to meet those outcomes.

Mandatory

There are currently no mandatory product stewardship Schemes under the *Product Stewardship Act 2011*. However, separate legislation is in place to provide for a used oil product stewardship framework. The *Product Stewardship (Oil) Act 2000* mandates a levy/benefit Scheme where a per cent per litre levy is applied to all new oil, with a differential benefit being paid to oil Recyclers depending on the level of Recycling.

Appendix 5

Equivalent Battery Unit Ratios

An Equivalent Battery Unit (EBU) is one standard AA alkaline battery. The weight of an EBU for a new AA battery is standardised at 24 grams.

The following EBU ratios reflect the potential recoverable resources from the various types of batteries, the weight of the battery measured against 24 grams and the potential hazard of the battery chemistry.

Type of battery	EBU ratio
AAA	0.5
AA	1
9v	2
C	3
D	4
Lantern	30
Button cell	0.25
Mobile	2
Digital device	2
Laptop	23
Cordless power tools	23
Sealed lead acid	29
Sealed lead acid over 1kg OR	40
Sealed Lead Acid Batteries 1 – 3kg	40-125
Sealed Lead Acid Batteries over 3kg	200