

# CBA



**Canadian Battery Association**  
Representing the Industry Since 1970

## **Annual Report to the Director**

### **2013 Calendar Year**

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## EXECUTIVE SUMMARY

The table below summarizes the Canadian Battery Association's (CBA) program performance in 2013 as per Section 8 of the Recycling Regulation's Annual reporting requirements.

<b>Products within plan</b>	Consumer and Commercial Lead-Acid Batteries (LABs)	
<b>Program website</b>	<a href="http://www.canadianbatteryassociation.ca">www.canadianbatteryassociation.ca</a> and <a href="http://www.recyclemybattery.ca">www.recyclemybattery.ca</a>	
<b>Recycling Regulation Reference</b>	<b>Topic</b>	<b>Summary</b>
Part 2, section 8(2)(a)	Public Education Materials and Strategies	<ul style="list-style-type: none"> <li>• Funding of RCBC's Recycling Hotline and Recyclepedia search tool for Return Collection Facilities;</li> <li>• Operation of the CBA's website to identify Return Collection Facilities <a href="http://www.recyclemybattery.ca">www.recyclemybattery.ca</a>;</li> <li>• Participation with the Stewardship Agencies of BC website <a href="http://www.bcstewards.com">www.bcstewards.com</a>;</li> <li>• Update BC Recycling Handbook for Lead-Acid Batteries - <a href="http://www.bcstewards.com/ips/index.html">http://www.bcstewards.com/ips/index.html</a> see Page 18;</li> <li>• Preparation of CBA Bulletin for users of industrial LABs explaining stewardship requirements in BC.</li> </ul>
Part 2, section 8(2)(b)	Collection System and Facilities	<ul style="list-style-type: none"> <li>• 170 Return Collection Facilities for Consumer LABs</li> <li>• 21 Return warehouses for Industrial LABs</li> </ul>
Part 2, section 8(2)(c)	Product Environmental Impact Reduction, Reusability and Recyclability	<ul style="list-style-type: none"> <li>• <b>Product Environmental Impact Reduction:</b> <ul style="list-style-type: none"> <li>○ CBA has developed and implemented a program for the <i>Management of Recyclable Lead-Acid Batteries - Collection, Storage and Shipping in Canada</i> to ensure that LABs are collected, stored and transported safely and in compliance with Federal and Provincial regulations;</li> <li>○ The program provides Operational, Contingency and Closure plans for the warehouses operated by CBA members as well as a summary of all Federal and Provincial legal requirements.</li> </ul> </li> <li>• <b>Reusability:</b> <ul style="list-style-type: none"> <li>○ Up to 15% of LABs can be refurbished and resold as a used battery;</li> <li>○ Typically 100% of the electrolyte from LABs processed in BC is reused as an input in another production process.</li> </ul> </li> <li>• <b>Recyclability:</b> <ul style="list-style-type: none"> <li>○ 99% of lead is recovered by smelters;</li> <li>○ Approximately 75% of the polypropylene plastic is recycled. The remaining polypropylene and 100% of the acrylic plastic used for stationary batteries is burned in the smelter for energy recovery and creation of an anoxic environment necessary for the smelting process;</li> </ul> </li> </ul>

Part 2, section 8(2)(d)	<u>Pollution Prevention Hierarchy and Product / Component Management</u>	<ul style="list-style-type: none"> <li>All LABs recovered by CBA members are: <ul style="list-style-type: none"> <li>Sorted and evaluated for its potential for reuse;</li> <li>100% of the LABs recovered in BC were transported to 5 smelters in North America for recycling;</li> </ul> </li> </ul>
Part 2, section 8(2)(e)	<u>Product Sold and Collected and Recovery Rate</u>	<ul style="list-style-type: none"> <li>Sales (kg): <ul style="list-style-type: none"> <li>CBA Members: 15,750,000kg</li> </ul> </li> <li>Recovery (kg): <ul style="list-style-type: none"> <li>CBA Members: 12,703,350kg</li> </ul> </li> <li>Recovery Rate (%): <ul style="list-style-type: none"> <li>CBA Members: 86.4%</li> <li>Sector Recovery Rate*: 103%</li> </ul> </li> </ul> <p>* uses smelter and export data</p>
Part 2, section 8(2)(e.1)		Lead-acid batteries cannot be reported by Regional District because of mobile collection by battery recyclers.
Part 2, section 8(2)(f)	<u>Summary of Deposits, Refunds, Revenues and Expenses</u>	CBA does not charge a visible eco-fee, consequently this section of the Recycling Regulation does not apply.

<b>Comparison of Key Performance Targets</b>		
<b>Priority Stewardship Plan Targets (as agreed with ministry file lead)</b>	<b>2013 Performance</b>	<b>Strategies for Improvement</b>
1. Awareness: Long Term Target of 75%	69%	<p><i>Link to BC's 2014 Ambassador Program to increase awareness on generators.</i></p> <p><i>Prepare additional information for retailers at point of sale.</i></p>
2. Accessibility: <ul style="list-style-type: none"> <li>150 Return Collection Facilities;</li> <li>30 minutes in Urban Areas</li> <li>45 minutes in Rural Areas*</li> </ul>	<ul style="list-style-type: none"> <li>170 Return Collection Facilities (RCF) – see <a href="http://www.recyclemybattery.ca">www.recyclemybattery.ca</a>;</li> <li>Time to RCFs in Urban Areas Not Yet Determined</li> </ul>	<i>Will assess consumer travel time to Return Collection Facilities in 2014</i>
3. Recovery Rates: <ul style="list-style-type: none"> <li>90%</li> </ul>	<ul style="list-style-type: none"> <li>80.5% for CBA members;</li> <li>98.9% for industry sector;</li> </ul>	<i>The 2013, the CBA estimates that private LAB recyclers collected an additional 25% of LABs resulting in an estimated industry recovery rate of 99%. The CBA will continue to estimate overall recovery rate by calculating unaccounted sales and recycling data from smelters.</i>

<b>Comparison of Key Performance Targets</b>		
<b>Priority Stewardship Plan Targets (as agreed with ministry file lead)</b>	<b>2013 Performance</b>	<b>Strategies for Improvement</b>
4. Generation, Storage and Transportation <ul style="list-style-type: none"> <li>• 100% compliance to Federal and Provincial laws for the management of dangerous goods and hazardous waste.</li> </ul>	<ul style="list-style-type: none"> <li>• To Be Determined in 2014</li> </ul>	<i>CBA has prepared materials for the Management of Lead-Acid Batteries and the MoE has clarified policies with regard to the definition of when LABs are deemed to be a “waste”.</i>  <i>Full implementation in 2014</i>

\* SABC Action Plan Guideline

## PROGRAM OUTLINE

### *About the Canadian Battery Association*

The Canadian Battery Association (CBA) was established in 1970 by the Canadian manufacturers of lead-acid batteries. Since its inception, the CBA has worked on a variety of issues and now one of the Association's focuses is on the establishment of a National Stewardship Program for end-of-life Lead-Acid Batteries (LABs).

The CBA is the primary Steward in Canada for LABs and the Association has approved Stewardship Programs in Manitoba and British Columbia since 2011. Interstate Battery Systems of America and Call2Recycle also have stewardship programs for lead-acid batteries in British Columbia.

The most important aspect of the CBA's National Stewardship Program is that the end-of-life LABs have a positive residual value because of the inherent value of lead as a commodity. Because of the positive value of lead, there is a complex, private sector market and recycling infrastructure across Canada that recovers more than \$150,000,000/yr of recyclable lead-acid batteries.

### *Membership*

The signatories to the CBA's Stewardship Program in Manitoba and BC are summarized on the CBA's website <http://canadianbatteryassociation.ca/index.php/members>. The Manufacturers and National Distributors that are signatories to the CBA's stewardship plan have assumed the stewardship obligations on behalf of the thousands of wholesalers and retailers that sell lead-acid batteries.

### *Stewarded Products*

The CBA focuses exclusively on three types of lead-acid batteries (LAB). The Starting, Lighting and Ignition (SLI) batteries are the most common LAB sold in Canada representing 85% of sales. The vehicle battery is a typical SLI battery. The motive and stationary batteries are used in commercial applications such as forklifts and UPS systems for energy storage and emergency electronic and lighting applications.

### *Collection Approach*

There are three factors that influence how LABs are recovered and recycled. First and foremost, LABs have a value at the end-of-life due the inherent value of the lead. Secondly, most consumer and all commercial LABs are replaced at a commercial facility by a licensed technician. Thirdly, the many CBA members have contracts with smelters that require a constant supply of recyclable LABs. As such, the CBA's collection of LABs utilizes a 'reverse distribution' system where distributors drop off new batteries at repair facilities and pick up the used batteries for return to the smelters.

### *Accomplishments in 2013*

The CBA was an active participant with the other Stewardship Agencies in BC developing an Action Plan ([www.bcstewards.com/actionplan/index.htm](http://www.bcstewards.com/actionplan/index.htm)) to help further refine how Product Stewardship is implemented in BC. In addition to the preparation of the Action Plan, the BC Stewards undertook a comprehensive consumer awareness study in the fall of 2013.

## PUBLIC EDUCATION MATERIALS AND STRATEGIES

In 2013, the Stewardship Agencies of BC included LABs in a comprehensive Consumer Awareness Study. The results are:

- Awareness Program Exists to Take Care of LABs: 69%
- Participation in the Program: 51%
- Know Where to Get Information About Recycling and Safe Disposal of LABs: 68%
- Know Location to take Unwanted LABs: 54%
- Know Where to Get Information about Return Collection Facilities for LABs: 65%
- Perception Program for LABs is Convenient: 75%
- Trust Program will Safely Recycle / Dispose of LABs: 84%

There are three important conclusions to draw from the Consumer Awareness Study:

- 1) Approximately 50% of consumers surveyed have not needed to dispose of LABs in the past confirming the assertion that a high percentage of consumers replace their LABs at a repair shop by a licensed technician;
- 2) 75% and 84% of consumers that were aware of the LAB Stewardship Program thought it was convenient and consumers had a high level of trust that the LABs would be safely recycled;
- 3) the Consumer Awareness results for LABs were similar to the results for the Used Oil and Tires Stewardship Programs confirming the assertion that for the most part, consumers have their vehicles serviced at a repair shop by a licensed technician.

Because the majority of LABs are removed by technicians at repair shops, the education strategies are different than most “consumer” products that are used in the household. As such, there are three strategies that relate to the education:

- 1) annual visits by the CBA to the warehouse distribution centres to ensure that the distributors understand the Federal and Provincial regulations that relate to the safe storage and transportation of LABs;
- 2) preparation of technical and recycling information that can be used by CBA members to communicate and educate their sales and recycling operations;
- 3) consumer-focused, return collection facility locations available using the website [www.recyclemybattery.ca](http://www.recyclemybattery.ca) and the Recyclepedia function with the Recycling Council of BC.

The CBA also supports the communication initiatives developed by the Stewardship Agencies of BC and the initiatives that provide a single recycling message to consumers. This includes the funding of the RCBC’s Hotline as well as the Recyclepedia Return Collection Facility locator.

In addition, the CBA provides important onsite education and technical materials to its members so that the sales and recycling staff are well informed about the safe collection, storage and transportation of LABs.

## COLLECTION SYSTEM AND FACILITIES

The CBA members use a mobile reverse-distribution system to drop off new LABs and pick up used LABs from the retail or commercial locations. Note that CBA members are responsible for organizing the collection logistics with retail and commercial customers and the CBA never “owns” or is responsible for the recovered LABs.

Consumers that have a used LAB at their house are encouraged to return LABs to any one of the 170 retail locations in BC that have the capacity to store and transport LABs to all Federal and Provincial requirements for hazardous waste and dangerous goods. Commercial operations are encouraged to contact their distributor and have the industrial batteries returned to one of the warehouses operated by the CBA members.

The 170 Consumer and 21 Industrial Return Collection Facilities are listed on [www.recyclemybattery.ca](http://www.recyclemybattery.ca) and all consumer locations are listed with RCBC’s

## PRODUCT ENVIRONMENTAL IMPACT REDUCTION, REUSABILITY AND RECYCLABILITY

Because the recovery rate of LABs in BC is virtually 100%, one of the main functions of the CBA is to ensure that new, used and recyclable LABs are collected, stored and transported to all Federal and Provincial regulations for dangerous goods and hazardous waste.

In 2013, the CBA completed the **Management of Recyclable Lead-Acid Batteries - Collection, Storage and Shipping in Canada**. The binder of materials includes an Operational Plan, Contingency Plan and Closure Plan and has been distributed to each of the CBA member’s locations.

The CBA’s goal is to ensure that LABs are safely collected, stored and transported so that environmental contamination, worker safety and community health are not impacted by lead-acid batteries.

In addition, the CBA has been working with the BC Ministry of Environment to accurately define when a recovered LAB is considered a re-useable or hazardous waste. Up to 15% of certain types of LABs can be refurbished and resold as a “used” battery. The definitions and guidelines for reuse and recycling by the Ministry of Environment will be completed in 2014 and adjustments to the Stewardship Plan will be made at that time.



## POLLUTION PREVENTION HIERARCHY AND PRODUCT / COMPONENT MANAGEMENT

The recovered LABs collected by CBA members are considered a commodity with a significant positive value at end-of-life. Because recovered LABs are bought and sold as a commodity in an open market, the CBA cannot impose vendor qualifications, recycling requirements or emission levels for LABs on recyclers and smelters. Despite the fact that the CBA cannot set vendor qualifications or recycling requirements, the CBA has researched the fate of the lead, plastic and electrolyte that are the key elements within a LAB.

<b>Material</b>	<b>Description</b>	<b>Fate</b>
Metals	99% of lead is recovered during the smelting process	Lead ingots are sold as a Commodity on the open market.
	1% of lead from the smelting process is not recovered and is contained in dross – a waste from the smelting process	Private Landfill
	Antimony and Calcium are used to provide strength within the lead plates	Remain as an alloy of the lead after smelting.
Electrolytes	100% of Sulphuric Acid is recovered and sold as an input to another business – eg Ammonium Sulphate fertilizer production.	Recycled and sold as a commodity.
Plastics	<p>The Polypropylene Case that provides structure to the battery.</p> <p>Stationary batteries have a clear casing made of Acrylic.</p> <p>Within each battery, Plastic Separators are used to Isolate the Positive and Negative plates in a cell.</p>	<p>About 70% of the Polypropylene is recycled and used to make new “black” battery casings.</p> <p>Acrylic casings are not recyclable and are burned for energy recovery at the smelters.</p> <p>The Plastic Separators are burned at the smelters for energy recovery and creating an oxygen free environment during the smelting process.</p>

All recovered LABs collected by CBA members are sent to recycling and smelting facilities that have valid permits and/or approvals. The recycling requirements and emission levels for recyclers and smelters are set by Provincial or State governments as part of their permit/approval processes for the recycling and smelting facilities.

## PRODUCT SOLD AND COLLECTED AND RECOVERY RATE

The members of the CBA account for about 77% of the lead-acid batteries sold in BC. Interstate Battery Systems of American (Interstate) account for 8% of sales and dealers that sell new products containing a LAB (primarily vehicles) account for about the remaining 15%. In total, there were about 20,400,000kg of LABs sold in BC in 2013 in the three product categories:

**2013 Lead-Acid Sales Data for British Columbia**

	CBA Members (kg)	Interstate* (kg)	Unaccounted Sales (kg)	Total (kg)
Starting, Lighting, Ignition (SLI)	13,700,000	1,710,000	2,740,000	18,150,000
Motive (e.g., forklift)	1,200,000	0	135,000	1,335,000
Stationary (e.g., UPS)	850,000	0	69,400	920,000
Totals	15,750,000	1,710,000	2,941,000	20,405,000

\* estimates based on 2012 reported sales data.

CBA members reported just over 12,700,000kg of lead-acid batteries recovered in 2013. The CBA recovery rate was 86.4%; 69.6% and 2.2% for SLI, Motive and Stationary batteries respectively.

There is a significant recovery of LABs by the metal recycling industry that is not recorded either by the CBA or Interstate. The volume of LABs recovered by the Metal Recycling industry was back calculated by knowing the volume of product received at the smelters or exported to the USA and subtracting the recovery volumes for CBA Members and Interstate.

Using the smelter and export data as an estimate the total recovery of LABs in BC, about 27.5% of all LABs recovered in BC were recovered outside the CBA and Interstate stewardship programs and the overall sector recovery rate for lead-acid batteries in BC is approximately 98.9% of total sales.

Because LABs are recovered by the CBA through a mobile reverse distribution collection system, the recovery volumes cannot be reported on a Regional District basis. However, Regional Districts can estimate the recovery of LABs using the 2013 per capita recycling rate of 4.6kg/person.

The CBA undertook a non-financial audit in 2013. The results of the audit are summarized in Appendix 1 and the auditor stated that the results presented in the CBA's Annual Report are fairly stated.

### 2013 Lead-Acid Recovery Data for British Columbia

	CBA Members (kg)	Interstate* (kg)	Metal Recyclers** (kg)	Total** (kg)
Starting, Lighting, Ignition (SLI)	11,823,300	2,505,000	Not estimated	Not estimated
Motive (e.g., forklift)	861,300	60,000	Not estimated	Not estimated
Stationary (e.g., UPS)	18,700	Not estimated	Not estimated	Not estimated
Totals	12,703,350	2,565,000	5,864,000	21,132,000

\* estimates based on 2012 reported recovery data.

\*\* based on smelter and export data obtained by the CBA

## PLAN PERFORMANCE

CBA Targets and Objectives		
Priority Stewardship Plan Targets	Performance	Strategies for Improvement
1. Awareness: Long Term Target of 75%	69%	<i>Link to BC's 2014 Ambassador Program to increase awareness on generators.</i>  <i>Prepare additional information for retailers at point of sale.</i>
2. Accessibility: <ul style="list-style-type: none"> <li>• 150 Return Collection Facilities;</li> <li>• 30 minutes in Urban Areas;</li> <li>• 45 minutes in Rural Areas*</li> </ul>	<ul style="list-style-type: none"> <li>• 170 Return Collection Facilities (RCF) – see <a href="http://www.recyclemybattery.ca">www.recyclemybattery.ca</a>;</li> <li>• Time to RCFs in Not Yet Determined</li> </ul>	<i>Will measure consumer travel time to Urban and Rural Return Collection Facilities in 2014</i>

## CBA Targets and Objectives

Priority Stewardship Plan Targets	Performance	Strategies for Improvement
3. Recovery Rates: <ul style="list-style-type: none"> <li>• 90%</li> </ul>	<ul style="list-style-type: none"> <li>• 80.5% for CBA members;</li> <li>• 98.9% overall for sector</li> </ul>	<p><i>The 2013, the CBA estimates that private LAB recyclers collected an additional 25% of LABs resulting in an estimated industry recovery rate of 99%. The CBA will continue to estimate overall recovery rate by calculating unaccounted sales and recycling data from smelters.</i></p> <p><i>CBA will also participate in a Waste Characterization Study to determine if LABs are found in landfills.</i></p>
4. Generation, Storage and Transportation <ul style="list-style-type: none"> <li>• 100% compliance to Federal and Provincial laws for the management of dangerous goods and hazardous waste.</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance not determined in 2013;</li> </ul>	<p><i>CBA has prepared compliance materials for the Management of Lead-Acid Batteries and the MoE has clarified policies with regard to the definition of when recovered LABs are deemed to be a “waste” and the application of the Hazardous Waste Regulation to CBA member warehouses.</i></p> <p><i>Full implementation in 2014</i></p>

\* SABC Action Plan Guideline

**APPENDIX 1: NON-FINANCIAL AUDIT RESULTS**