British Columbia Lamps and Lighting Equipment Stewardship Plan

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1 INTRODUCTION

The BC Lamps and Lighting Equipment Stewardship Program ("Program"), operating as the BC LightRecycle Program ("LightRecycle"), is an approved stewardship program operated and managed by Product Care Association of Canada ("PCA") since July 2010.

This revised BC Lamps and Lighting Equipment Stewardship Plan ("Stewardship Plan") is submitted to the British Columbia Ministry of Environment and Climate Change Strategy ("Ministry") by PCA on behalf of the Producers of lamps and lighting equipment sold in British Columbia who are the members of PCA, pursuant to the requirements of the BC Recycling Regulation Reg. 449/2004 ("Regulation").[1] The Regulation sets out the requirements for extended producer responsibility, including the requirement for product stewardship plans. The Stewardship Plan replaces the original stewardship plan approved by the Ministry on March 1, 2010 covering residential fluorescent lamps, and subsequently amended by PCA and approved by the Ministry on April 23, 2012 to include all lamps and lighting equipment used in residential and commercial applications. More information on the Program is available for Producers at productcare.org and for consumers at lightrecycle.ca.

The Stewardship Plan contains a number of changes and improvements over the previous stewardship plan, including:

- Updating and providing additional information on product management options.
- Introducing targets for consumer awareness and accessibility to collection sites.
- Including additional details and reporting commitments (sampling results from collection facilities, waste composition audits from municipal landfills, etc.).
- Consolidating lamp product collection categories to highlight the rapid market transition from CFLs to LEDs (section 6.3).

2 DUTY OF PRODUCER

Section 2.1 of the Regulation provides:

> *Except as otherwise specifically provided in this regulation, a producer must*
>
> > *(a) have an approved plan under Part 2 [Product Stewardship Plans] and comply with the approved plan, or*
> >
> > *(b) comply with Part 3 [Product Stewardship Program Requirements If No Product Stewardship Plan]*
>
> *with respect to a product in order to sell, offer for sale, distribute or use in a commercial enterprise the product in British Columbia.*

The Regulation defines "Producer" as:

> *(b) in respect of the producer of a product within a product category other than the beverage container product category or the tire product category,*

[1] British Columbia Ministry of Environment, BC *Recycling Regulation,* BC Reg. 449/2004, as amended B.C. Reg. 88/2014, May 23, 2014. Accessed at http://www.bclaws.ca/civix/document/id/complete/statreg/449_2004.

(i) a person who manufactures the product and sells, offers for sale, distributes or uses in a commercial enterprise the product in British Columbia under the manufacturer's own brand,
(ii) if subparagraph (i) does not apply, a person who is not the manufacturer of the product but is the owner or licensee of a trademark under which a product is sold, distributed or used in a commercial enterprise in British Columbia, whether or not the trademark is registered, or
(iii) if subparagraphs (i) and (ii) do not apply, a person who imports the product into British Columbia for sale, distribution or use in a commercial enterprise;

The Ministry's Recycling Regulation Guide notes that the Producer is typically the product manufacturer, distributor or brand-owner, but can also be an importer, broker, or retailer who sells the product directly to a consumer or imports and uses the product in a commercial enterprise in the province, including catalogue or internet transactions.[2]

3 APPOINTMENT OF STEWARDSHIP AGENCY

The Program is developed, managed and operated by PCA, a not-for-profit industry association that manages product stewardship programs for household hazardous and special waste on behalf of its members across Canada. PCA was established as an agency to allow its members (i.e., Producers of Program Products) to meet their obligations under applicable extended producer responsibility legislation. PCA is incorporated under the Canada Not-for-Profit Corporations Act[3] and is governed by a board of directors with representation from four membership classes (paint products, lighting and alarms products, retail, other products). The lighting and alarms sector of the board is currently represented by a lamp manufacturer and a representative from the national industry association (manufacturers, distributors and trades) for the electrical industry in Canada. A current list of PCA's Board of Directors is available on PCA's website (productcare.org).

In addition, PCA has established an industry advisory committee, whose purpose is to provide advice, information and recommendations to PCA on matters pertaining to the operation of the Program.

According to section 2 of the Regulation, a Producer must either comply with Part 2 or Part 3 of the Regulation in order to sell, offer for sale, distribute or use the designated products in a commercial enterprise in BC. To meet this obligation, each PCA member appoints PCA as its agent to carry out the duties imposed by Part 2 of the Regulation. Membership information is available on PCA's website (productcare.org).

PCA's members represent the vast majority of the lamp and lighting equipment market in British Columbia for obligated products. Program members may include the manufacturers, brand owners, distributors, first importers and retailers of obligated products in BC. Program membership is open to all obligated Producers. A current list of program members is available on PCA's website (productcare.org).

[2] British Columbia Ministry of Environment, BC *Recycling Regulation Guide,* April 2012.

[3] A copy of the Regulation is available at http://laws.justice.gc.ca/eng/acts/c-7.75/. PCA's Letter of Continuance, bylaws and current financials are available on PCA's website www.productcare.org.

PCA also manages and operates stewardship programs for various categories of lamps in Manitoba, Quebec and Prince Edward Island.

4 PRODUCTS COVERED UNDER THE STEWARDSHIP PLAN

Section 2.1 (e) of Schedule 3 of the Regulation lists "Electronic and Electrical Products" as one of the categories of stewarded products, which includes "all electronic or electrical lighting equipment, parts and bulbs." Pursuant to these requirements, the Program includes all lamps used in residential and commercial applications, as well as lighting equipment, as defined in this section ("Program Products"). Product categories and Program Products are detailed on PCA's website and in the Program's Product Guide (available on the LightRecycle website, lightrecycle.ca), and are subject to change by PCA.

Program Products are marketed and sold through various channels to both residential and commercial end users.

The following sets out the definitions of the various categories of products included in or excluded from the Program:

Lamps
PCA defines "lamp" to mean a light source or replaceable component, designed to produce light from electricity. Lamps are commonly referred to as "bulbs" or simply as "lights".

Broken lamps are accepted by the Program, subject to being packaged in accordance with the requirements of the Program.

Lighting Equipment
PCA defines "lighting equipment" to include fixtures and ballasts used with electrical or electronic lighting products. For the purposes of this Plan, light fixtures included in the Program are defined as electrical devices with the primary purpose of housing an electrical lamp. Typically, the purpose of the light fixture is to hold the lamp, to provide electricity to the lamp and to direct the light that is produced. Light fixtures can be affixed to a building or may be free standing or portable. Ballasts are devices used to stabilize the current in an electrical circuit in a lamp. They are commonly integrated into a lamp and/or a light fixture and, in many cases, are designed to be removed and replaced during the lifespan of the lamp or the light fixture.

"Light Containing" Products
Products containing lamps with a primary purpose that is not to illuminate or assist in the illumination of space are outside the scope of the Program, including, but not limited to:

- Products covered by other schedules of the Regulation and under the management of other product stewardship programs in BC. Examples include large appliances, small appliances, medical equipment and electronic products.

- Products containing lights with a primary purpose of signalling or displaying information. Examples include traffic signals, railway crossing signals, neon signs, backlit signs and electronic billboards.

Note that replacement lamps used in excluded products, which are sold and can be disposed of separately from the excluded product, are included in the Program.

Aeronautical, Marine and Auto Fixtures
Fixtures designed to be integrated into a mode of transportation are excluded from the Program if the primary purpose is navigation, navigational safety, signaling or displaying information. These are defined as light sources that are integrated into a protective lens and/or housing and designed to function as stand-alone or replacement lighting products to permit the transportation device to safely navigate to its destination. Fixtures exclusively designed to illuminate space within one or more types of transportation are also excluded from the Program. For example, fixtures designed to light the interior of an automobile or automobile trunk are excluded.

Orphan Products
Program Products include orphan products. Orphaned products are defined as those that are no longer in production or which the manufacturer is no longer producing, provided that their function was the same as Program Products.

Batteries
Used single-use and rechargeable batteries are a designated product under the BC Recycling Regulation and managed by another stewardship program in British Columbia.

Tracking the number of batteries sold with products is problematic and cost intensive, with no environmental benefit. Relatively few lamps and lighting products are battery powered, such as flashlights and work lights, and of those products, not all are sold with batteries included. Product SKUs do not indicate whether a battery is included or not, and batteries sold with a product are not distinguishable from after-market batteries. Also, most batteries sold with Program Products can be removed and replaced by consumers, so it is not possible to effectively track the number of batteries sold, removed, or returned with products.

The Program considers the batteries sold or returned with products to be a component of the Program product and the responsibility of the Program. The Program manages all batteries in Program Products collected through the Program whether or not the battery was sold with the product. As consumers often do not remove batteries prior to bringing a product into the collection system for recycling the Program estimates that more batteries are returned with Program Products than were sold with new Program Products, even after taking into account that some original batteries will have been replaced.

The Program ensures that the batteries collected are processed responsibly in accordance with the applicable processing standards. The Program's primary recycling processors remove the batteries from the Program Products and send them to a secondary battery processor where the base materials are extracted and commoditized. See further discussion on consumer awareness regarding battery recycling under section 7 (consumer awareness).

5 STAKEHOLDER CONSULTATION

As a prerequisite to developing and finalizing this Program Plan, PCA conducted stakeholder consultations in order to provide meaningful opportunities for consultation and comment from those affected by the Program. The consultation process included:

- Conducting an in-person consultation on October 19, 2016 at the Bear Mountain Resort in Victoria, British Columbia, focusing on the Program Plan's proposed targets and commitments.
- Posting the draft Program Plan on PCA's website for public review.
- Conducting a webinar with representatives of the BC Product Stewardship Council, representing local governments in BC, on March 14, 2017.
- Conducting separate webinars for all interested parties on March 15 and March 29, 2017.
- Emailing notice of consultations in advance of each session to all interested stakeholders including, but not limited to, industry members, industry associations, service providers, non-profit organizations, indigenous communities, and regional and local governments. Notice of consultations was also posted on PCA's website and distributed through industry associations and non-profit organizations, including the Recycling Council of BC (RCBC) and Coast Waste Management Association (CWMA), to individuals subscribed to their listserves.

Comments received from the consultations were documented and amendments made to the Program Plan where appropriate. A list of stakeholders that participated in the various consultations is provided in Appendix B. A summary of comments received and PCA's responses are provided in Appendix C. The Program Plan was originally submitted on April 24, 2017 and then resubmitted to the Ministry for review and approval on July 3, 2018 in response to Ministry feedback. The Program Plan was revised further based on direction provided from the Director in his letter dated August 7, 2018.

Following Program Plan approval, the Program has a number of means of obtaining ongoing stakeholder input into the operation of the Program:

- Regular advisory committee meetings
- Member updates
- Collection site visits by the Program
- Public feedback during public outreach events
- Stakeholder feedback received by email and phone

6 COLLECTION SYSTEM AND CONSUMER ACCESSIBILITY

In accordance with section 5(1)(c)(iii) of the Regulation, the Program employs a comprehensive network of permanent year-round collection sites providing consumers with reasonable access to locations where they can drop off Program Products for recycling at end of life at no cost to the consumer.

The Program does not directly own or manage collection sites, but rather contracts with organizations that provide collection services, including:

- Retailers
- Private (non-retail) businesses (e.g., bottle depots)
- Municipalities (local government recycling centres and transfer stations)
- Regional Districts (similar to municipal sites, but regional governments)
- Metal recycling companies
- Not-for-Profit organizations
- Indigenous communities

As of December 31, 2016, there were a total of 442 permanent, contracted collection sites in the Program.

In addition to contracted collection sites, the Program offers direct pickup services to qualified generators and large volume users for specific products covered under the Program (see subsection "Large Volume Generator Service Collection System" below).

The Program collaborates with other stewardship programs wherever possible to enhance Program performance, including finding operational efficiencies and consistency in Program delivery. An example is the collection of residential light fixtures at all locations that accept small appliances, in partnership with the Canadian Electrical Stewardship Association (CESA).

The reporting metrics set out in this section align with the third party assurance requirements for non-financial information, including Program-specific definitions and applicable criteria.

6.1 Collection Site Types

Program collection systems vary according to the type of product collected (i.e., lamps and/or fixtures), the type of use (residential or commercial) and the quantities involved. Accordingly, the Program's collection system offers a variety of collection models servicing different sectors and accepting different product categories to optimize consumer convenience. Details regarding each collection site type are provided below. Table 2 provides a summary of the different types of collection sites in the network along with a description of the specific product categories accepted and any maximum volume limits.

Contracted collection sites may be advertised and non-advertised sites. Advertised sites are residential or commercial entities that accept Program Products from the public and are promoted by the Program. Unadvertised sites are businesses, often suppliers or contractors, which accept Program Products from their clientele (not from the public) and do not want to be promoted as a public collection site. All advertised collection sites are identified on the Program's depot locator on the Program's website, along with the types of Program Products accepted, collection site contact information and hours of operation. In addition to the Program's depot locator, the Program may also promote advertised collection sites through third party services such as RCBC's Recyclepedia and consumer hotline and SABC's depot locator (www.bcrecycles.ca).

Residential Volume Drop-Off Collection System
The Program provides collection locations for residential quantities of lamps and fixtures. Quantity limits, typically 16 lamps per drop-off, may apply at residential-use collection sites, especially return-to-retail locations, due to limited storage space. Consequently, quantity limits may apply. In many cases, if not all, residential lamp collection sites will accept more than 16 lamps limit if they have the capacity.

Commercial Volume Drop-Off Collection System
The Program offers locations for commercial generators to recycle larger quantities of lamps. PCA contracts with commercial fixture depots to accept fixtures as well as non-PCB ballasts, which go directly to the market-based collection system for metal recycling. Private metal recycling facilities participating in the Program agree to accept commercial fixtures for the Program at no cost to the public due to the scrap metal value of these products. Quantities collected through this channel are determined by sampling as it is impractical and cost prohibitive to isolate commercial fixtures from other metal products at the time of collection.

Large Volume Generator Service Collection System
In addition to collection sites, the Program provides free, direct pick-up service for large volume generators (LVGs) of lamps subject to minimum quantities. LVGs are organizations/companies that generate large enough quantities of lamps at their own sites or at offsite locations. The LVG direct pick-up service also has the effect of increasing the capacity of the Program's drop-off sites.

Table 1 sets out the options for disposal of lamps depending upon the quantity generated, while sites may exercise discretion in accepting more or less. As of the end of 2017, there were more than 300 sites listed as providing residential collection service and more than 100 sites listed as providing commercial collection service, of which about 75 sites which provide both levels of service, thus ensuring high levels of accessibility for disposal of all quantities of lamps (see discussion re accessibility below).

Table 1: Accepted Volumes of Lamps by Collection Site

Collection Site Type	Accepted Quantities
Residential Lamp Collection Site	1 - 16 units
Commercial Lamp Collection Site	16 units - 1 pallet
Large Volume Generator	Over 1 pallet

Collection Events
The Program may periodically conduct collection events to augment the collection system and enhance collection services as needed. Wherever possible, the Program collaborates with other stewardship programs and local governments on such initiatives. Collection events are often hosted and initiated by local governments. For these events, the Program partners with the event organizers to supply collection containers and takes responsibility for the transportation and recycling of the collected Program Products. The Program will report out on number of collection events that the Program organized or participated in each year.

Table 2: Collection Site Types and Program Product Accepted

Collection Site Type	Accepted Program Product
Residential Lamps - Advertised	Collection sites accepting residential volumes of lamps (up to 16 units)
Residential Fixtures - Advertised	Collection sites accepting residential volumes of fixtures
All Sectors Lamps (Commercial and Residential) - Advertised	Collection sites accepting commercial volumes of lamps
Commercial Fixtures and Non-PCB Ballasts - Advertised	Collection sites accepting commercial volumes of fixtures & Non-PCB Ballasts
Unadvertised Residential Fixtures	Collection sites accepting residential volumes of fixtures from specific sources only
Unadvertised Commercial Lamps	Collection sites accepting commercial volumes of lamps from specific sources only

PCB Ballast Collection System

Polychlorinated biphenyls (PCBs) are harmful, toxic substances that were used in the manufacturing of ballasts (as well as other manufacturing processes and equipment) until the late 1970s. Although no longer sold, these products are still found in some older buildings and lighting systems. PCBs are one of the most expensive categories of waste to manage and are regulated under Federal PCB Regulations and the BC Hazardous Waste Regulation (BCHWR). The BCHWR imposes stringent requirements on the collection and transportation of PCBs. Given the nature of the material and the strict regulatory framework governing its management and handling, the Program does not contract with collection sites for the collection of PCB ballasts, but rather offers a free pick up service to qualified generators[4]. The Program's website provides Generator Guidelines[5] to assist generators in identifying and segregating PCB ballasts from non-PCB ballasts, ensuring PCB ballasts are managed properly and in accordance with applicable regulations. For those with under 5 kilograms of PCB ballasts, such as a residential consumer, the Program provides free pick up courier service.

Performance Measures

Performance Metric	Reporting Commitment/Target
Number of contracted collection sites	Report annually on number of contracted collection sites by collection site type for commercial lamps, commercial fixtures, residential lamps, and residential fixtures, as well as a list of all contracted sites and the municipality where they are located, and identify changes from previous year.
Number of contracted collection sites by regional district	Report annually
Number of collection events	Report annually and provide list of events with locations.

6.2 Accessibility

The Program measures consumer access to collection facilities in accordance with the Accessibility Standard established by the Stewardship Agencies of BC (SABC). This Standard defines reasonable access as a 30 minute drive to a collection site in urban areas of population greater than 4,000 and a 45 minute drive to a collection site in rural areas with a population greater than 4,000. Rural communities are defined as cities, towns, resort municipalities and district municipalities with a population of between 4,000 and 29,999 outside the Metro Vancouver and Capital Regional Districts. Urban communities are defined as cities, district municipalities and towns within the Metro Vancouver and Capital Regional Districts with a population of 4,000 or more and cities and district municipalities with a population of 30,000 or more in the remainder of the province.

The SABC Accessibility Standard is used to define "reasonable" access to collection facilities, as required by Regulation. The Standard was established to ensure reasonable access to collection facilities for a high percentage of the province's population with consideration given for both urban and rural communities.

[4] A generator is an individual or entity that possesses more than 5 kilograms of PCB-containing ballasts. Generators must register with the province of British Columbia (BC Hazardous Waste Regulation, BC Reg. 63/88 as amended, ss. 43, 44).

[5] Generator Guidelines are available on the website: https://www.lightrecycle.ca/wp-content/uploads/2015/01/PCB-Ballast-Pick-Up-Guidelines-October-12-12.pdf

Where there are gaps in the areas covered by the SABC standard (i.e. populations that meet the Standard that do not have collection service), the Program continues to search for permanent sites, while providing collection services through events or other methods. The Program currently provides services to more than 60 communities with populations less than 4,000, as well as indigenous communities, such as Bella Bella, Lax Kwa'alaams and Nak'azdli by way of permanent collection sites, or by large volume direct pickup service or collection sites. The Program will continue to work with interested indigenous communities to provide collection services and free province-wide direct pickup service for qualified commercial and large volume generators of lamps and PCB ballasts. The Program will report out annually on gap areas based on the SABC Accessibility Standard as defined above for all four Product categories: residential lamps, residential fixtures, commercial lamps and commercial fixtures.

To measure accessibility levels, PCA retains the services of a reputable third party consultant. The network is analysed by collection site type, applying widely accepted GIS practices. Since the Program's launch in 2010, the Program has established a comprehensive network of 442 collection sites. As of December 31, 2016, the Program had an accessibility rate of greater than 95% for residential-use lamps, residential-use fixtures, commercial-use lamps and commercial-use fixtures and non-PCB ballasts. The Program maintains 100% accessibility for large volume generators of commercial lamps by offering free, direct pickup services throughout the province. The collection system has been stable over the past years and PCA continues to seek opportunities for expansion; working with interested communities to support collection services.

Performance Measures

Performance Metric	Reporting Commitment/Target
Residential-use lamps	Minimum of 95% accessibility rate based on SABC Accessibility Standard
Residential-use fixtures	Minimum of 95% accessibility rate based on SABC Accessibility Standard
Commercial-use lamps	Minimum of 95% accessibility rate based on SABC Accessibility Standard
Commercial-use fixtures	Minimum of 95% accessibility rate based on SABC Accessibility Standard
Gap areas[6] in network for residential use lamps	Report annually
Gap areas in network for residential fixtures	Report annually
Gap areas in network for commercial use lamps	Report annually
Gap areas in network for commercial fixtures	Report annually

[6] "Gap area" is defined according to the SABC Accessibility standard referred to above.

6.3 Absolute Collection Quantity

Absolute collection quantities reflect the quantity of units and/or weight of Program Products collected annually by the Program across BC. For history of growth in collection volumes, see Program's annual reports.

Lamps
The original Program Plan included several categories of fluorescent lamps, as well as incandescent and halogen lamps. Under this plan, PCA will report collected units using a simplified categorization based on lamp technologies to better illustrate the market transition from fluorescent lamps to LEDs:

1. **Mercury-Containing Lamps:** All compact fluorescent lamps (CFLs), fluorescent tubes and high intensity discharge (HID) lamps.[7]
2. **Light Emitting Diode (LED) Lamps:** Solid-state lamps used for specialty purposes and conventional lighting applications.
3. **Incandescent and Halogen Lamps:** All incandescent/halogen filament lamps of all shapes, sizes and wattages, and all minibulbs.

This consolidation of product categories is for Program Plan reporting purposes and does not affect the reporting categories for environmental handling fees (EHFs) (see section 8 below).

While collection volumes for all product categories have increased year over year, a number of factors make it difficult to set collection targets at this time:

- The shift in lamp technologies from CFLs to LEDs is occurring at a faster rate than originally anticipated.
- The return rate of CFLs is not predictable.
- The life expectancy of first generation LED products is uncertain.

Consequently, the Program will report out on the number of lamps collected[8] for each product category defined above, as well as the weight of residential fixtures collected.
In addition, at the direction of the Ministry, the Program will report out on residential collection volumes per capita by regional district. Due to a number of factors, including variations in population density per household and trans-boundary movement of lamps, PCA does not consider this metric to be appropriate for performance targets. Caution should be exercised when interpreting this metric.

Residential Fixtures
By agreement between PCA and the Canadian Electrical Stewardship Association (CESA), residential fixtures are collected together with small appliance and other CESA products providing efficiency and consumer convenience. The weight of residential fixtures attributable to the Program each year is estimated by sampling the commingled materials.

Commercial Fixtures

[7] Some HIDs contain sodium, which is managed in the same manner as mercury.

[8] Unit counts of lamps are estimated based on box count sampling

Commercial fixtures are collected through the well-established private industry scrap metal collection system. The value of the metal in the fixtures incentivizes its recycling.

The small percentage of lighting fixtures as compared to the volume of scrap metal generated in the Province and the comingling with other metal-based products at point of collection, make it impractical for the Program and private collectors to track the actual number of units collected. Instead, the Program utilizes sampling studies at selected collection sites to confirm commercial fixtures are being managed through the private metal scrap metal recycling system. The sampling is made possible through the cooperation of the Canadian Association of Recycling Industries (CARI) as well as other scrap metal recycling companies. According to the metal recycling industry, the majority of the province's scrap metal flows through the major metal recycling facilities in Vancouver Island and Metro Vancouver. Accordingly, the Program conducts its sampling in these regions. The selection of sites to sample is based on a number of considerations, including the willingness of facilities to participate and the ability to safely carry out the sampling and geographic location of sites. Trained individuals examine various scrap piles and identify and count units of Program Product present. Also, the actual or estimated weight of each identified Program Product is recorded.

The Program presents the actual results of the sampling events in its annual report but, due to a number of factors, is not able to use this data to reliably estimate the total volumes of commercial fixtures recycled in the province.

In addition, the Program partners with local governments and other stewardship programs to undertake municipal waste audits to confirm that Program Products are not making their way into the municipal waste stream (see section 6.5 below for more information). Municipal waste audits undertaken to date have not identified any commercial fixtures. The combination of the waste audit results and sampling studies suggests that the positive scrap metal value of these products and the accessibility of the scrap metal system results in a very high percentage of the products being recycled.

Performance Measures

Performance Metric	Reporting Commitment/Target
All lamps	Total units collected by category[9] Total estimated units collected by regional district[10]
Residential Fixtures	Total estimated weight collected
PCB-Containing Ballasts	Total weight collected Total weight collected by regional district
Sampling events	Number and location of sampling events
All sales by product category	Units Sold
Residential lamp units per capita collections by regional district	Report annually

[9] In accordance with new lamp categories detailed above in section 6.3 of the Program Plan.

[10] Regional district counts are estimated based on average lamps per box collected from each regional district.

Performance Metric	Reporting Commitment/Target
Residential fixtures kg per capita collections by regional district	Report annually

6.4 Capture Rate

A “capture rate” compares the quantity of products collected in a year to the quantity of products estimated to be “available to collect” in the same year. In contrast, a “recovery rate” compares the quantity of products collected in a year to the quantity of Products actually sold into the market in that year.

A capture rate model is generally considered more appropriate than a recovery rate model for lamps due to the time period between the sale of a unit and the end of life of that unit. Unlike consumable products, each unit sold should eventually be available for collection. However, the increasing lifespans of these products and changing sales patterns of various lamp categories reduce the validity of the capture rate. For example, the rate of transition from CFLs to LEDs has exceeded industry expectations, partly due to CFLs being removed prior to the end-of-life of the product as part of LED lighting retrofits. In addition, the variable lifespans of first generation LEDs contributes to the uncertainty in estimating the amount of Program Product available to collect, resulting in capture rates exceeding 100% in some cases. Due to variations in product lifespan, technological development and consumer use patterns and behaviour, it would be very resource intensive, and arguably impossible, to improve the accuracy of the calculation of the quantity available. Accordingly, the Program does not view capture rate as an applicable or reliable metric.

Another metric, recovery rate, measures the amount of product collected compared to the amount sold into the market in the same year, however, as noted, the application of recovery rate as a performance metric is similarly unreliable due to the long lifespan and rapidity of change in technology for these products.

Accordingly, the Program considers accessibility and awareness as more meaningful performance metrics for the Program.

6.5 Waste Composition Audits

Waste composition audits are conducted in partnership with local governments and other stewardship programs, subject to mutually agreed upon terms, to determine if the Program Product is being successfully diverted from landfill. Each year, the Program consults with local governments to identify waste composition studies scheduled for that year. PCA collaborates with local governments and other stewardship programs to make the studies as economical and efficient as possible. The Program will participate in all waste composition studies committed to by SABC.

The waste composition study methodology and sample sizes are determined by the local government responsible for the audit. The product categories to be included in the studies are determined in cooperation with the various stewardship agencies.

The report provided by the consultant conducting the study includes the date and location of the audits, as well as the number of units of Program Products identified. The audit results are considered to be

informative for the region in which the study was conducted, but due to variations in collection patterns and waste management practices, are not considered applicable to other regional districts.

Performance Measures

Performance Metric	Reporting Commitment/Target
Participation in all waste composition studies committed to by SABC	Report annually
Number and location of waste audits conducted	Report annually
Kilograms per capita of Program Product identified during waste audits	Report annually
Total amount of batteries found per waste audit conducted	Report annually

6.6 End-of-Life Management

The end-of-life management of commodities derived from the processing of Program Products is detailed under section 9 of the Program Plan.

For fixtures, alternative pathways exist for their collection and processing (see section 9.2 for details on material management pathways). The Program employs a number of approaches to confirm Program Products not collected through Program channels are being managed responsibly through alternative pathways. These include:

- Waste composition studies (see section 6.5 above)
- Ongoing consultation with processors that receive the products
- Ongoing consultation with commercial lighting contractors regarding their disposal practices

7 CONSUMER AWARENESS

The Regulation requires that a stewardship program plan make adequate provision for informing consumers of the Program. It is important that consumers are aware of the importance of recycling Program Products, how to handle them, and where to return them. Accordingly, the Program provides specific information on:

(a) the producer's product stewardship program,
(b) the location of collection facilities, and
(c) how to manage products in a safe manner,

Some Program Products, such as mercury containing lamps and PCB ballasts, if improperly handled or managed can pose greater environmental and safety risks than other products. The Program employs a number of channels to make consumers aware of the health and safety risks associated with these products and how to handle them at end-of-life. These include steps for the proper handling and packaging of mercury containing lamps or broken bulbs and PCB generator guidelines.

To maximize effectiveness, the Program works with other stewardship programs to provide coordinated program information to consumers. For example, the Program participates in the creation of a joint product guide with other stewardship programs through the Stewardship Agencies of BC and, as noted above, provides a single point of consumer information for all recyclable products through the Recycling Council of BC hotline, Recyclepedia website and smartphone app.

General Awareness Strategies

Consumers of lamps and lighting equipment generally purchase and utilize multiple types of products (e.g. incandescent, CFLs, halogens, fixtures, etc…) and understand them to be related products. Accordingly, to maximize awareness, the Program's promotional strategies cover all Program Products, rather than targeting specific product types. The expectation is that if an individual is aware that a particular lamp or fixture is recyclable, they will recognize that other types of lamps or fixtures are also recyclable. The Program has invested significant effort and resources into communications and consumer outreach in order to increase consumer awareness. In any marketing initiative, using appropriate strategies and tactics is critical to make the best use of resources and achieve the desired results. PCA employs a variety of communication methods, which continue to evolve, to raise awareness about the Program among British Columbians including:

- **Website -** The Program's primary consumer information source, including a Google Map-based depot finder, providing information on the types of products that are accepted by the Program, EHFs, where they can be recycled, quantity limits, how to return them, safe handling and FAQs. Both the website and depot locator are updated on a consistent basis to reflect changes in the Program and the collection network.
- **Recycling Hotline** (1 800 667 4321 or 604 RECYCLE) -The Recycling Council of British Columbia's (RCBC) recycling hotline service. Consumers may contact RCBC operators during business hours and obtain information about return options for Program Products.
- **RCBC Recyclepedia -** RCBC's online search system and smartphone app informing consumers of return options.
- **Point of Return** - Program signage for display by advertised collection sites and counter cards to distribute to consumers free of charge.
- **Earned media and paid advertising -** Campaigns to create awareness through advertising media including TV, radio, print and digital advertising. Digital advertising includes social media (Facebook, Instagram and Twitter) and Google AdWords.
- **Other** – Other effective methods of communications may be identified and utilized by the Program

Residential Consumer Awareness

In addition to the general awareness initiatives identified above, the Program employs the following additional strategies to reach residential consumers:

- **Point of Sale -** A variety of point of sale (PoS) materials (including but not limited to rack cards, posters and brochures) are available upon request, free of charge, via an easy online re-order form. PCA maintains an ongoing engagement with retailers to identify additional ways of engaging consumers at retail stores and increasing the use of PoS materials in an effort to improve Program awareness.
- **Community Events –** Participation in events, including provision of event collateral, such as a branded tent, tablecloth, pop-up banners and giveaways, to ensure the Program has a strong presence targeted local communities.

- **Direct Consumer Mailouts –** Targeting residential consumers through dedicated mailings to household dwellings.

The strategies may be adjusted over the plan approval period. The Program will continue to explore additional strategies to achieve awareness targets, such as:

- Digital advertising campaigns to continue to expand its online presence
- Search engine marketing, including increased keyword research and targeting
- B2B awareness strategy (electrical associations, electrical contractors, relampers, building owners etc.)
- Develop commercial sector-specific initiatives (see below)

The Program will report out on website hits and consumer inquiries on an annual basis.

Commercial Sector Awareness

In order to raise awareness among commercial generators, the Program currently employs a number of targeted strategies:

- Print and e-newsletter advertising in industry publications, such as Business in Vancouver's Office Space Magazine, Green Space Magazine and Canadian electrical trade magazine, Electrical Line.
- Sponsoring and attending industry events and tradeshows, such as the BuildEx tradeshow and Electro Federation Canada (EFC) conference.
- Hosting industry information sessions in partnership with industry associations, such as the Building Owners and Managers Association luncheon.
- Dedicated direct mailings and communications targeting large commercial generators of Program Products.
- Point of Sale – as described above under Residential Awareness.

The Program commits to the following additional strategies during the plan approval period aimed at improving the awareness level of the commercial sector.

- Attending at least two industry events annually,
- Minimum of six print and e-newsletter ads in industry publications annually, such as Business in Vancouver's Office Space Magazine, Green Space Magazine and Canadian electrical trade magazine, Electrical Line
  Investigate online industry forums to identify opportunities for the program to promote the program to the commercial sectors and report findings in the annual report following the first full calendar year after plan approval.
- Within the first year of the plan approval period, undertake a outreach campaign targeting commercial users with the cooperation of electrical distributors/wholesalers through which the majority of commercial users procure Program Productsto:
  1. Identify opportunities and challenges to raise awareness of the Program among their customers
  2. Develop a campaign in partnership with provincial distributors/wholesalers of commercial lighting products to raise awareness amongst their customers
  3. Provide a qualitative report on this initiative in the Program's annual report
- Within two years of program plan approval, develop and implement an outreach initiative targeting the majority of those within the commercial sector who sell, install,

utilize and dispose of Program Products, including electrical distributors, electricians, junk and garbage service providers, property managers and other sectors. This initiative will include:

1. Informing them of the program and the environmental and economic benefits of participating in the program,
2. Ascertaining current practices for managing unwanted lamps and fixtures and identify barriers and opportunities,
3. Encouraging the requirement for/commitment to recycling in procurement contracts
4. Providing information on the convenience/cost savings of the Large Volume Generator (LVG) and facilitate registration as an LVG
5. Reporting on the commercial sector outreach initiative in the annual report

It is also expected that commercial sector awareness will be positively impacted by the Program's initiatives to increase general consumer awareness.

Batteries

Batteries are a designated product under the Recycling Regulation. A very small number of lighting products (e.g. flashlights) use batteries, generally primary (single use) type, resulting in a relatively low environmental risk compared to other battery-operated products. Nevertheless, the Program safely and responsibly manages batteries returned in Program Products to Program collection sites. Currently, the Program collaborates with the CESA stewardship program for residential fixture collection and management, including batteries. The Program directs consumers not to remove batteries from Program Products and to recycle them along with the product at any Program collection site. This is documented in the Program's Product Guide and on the Program's website. The Program will continue to coordinate responsible battery management with other programs that include batteries.

Consumer Awareness Surveys

The Program's outreach efforts focus on raising awareness of recycling options for lighting products. The Program's objective is to have consumers aware that all lamps and lighting products can be recycled. The Program utilizes third party research firms to conduct biannual residential consumer awareness surveys to gauge public awareness of a recycling program for lighting products in general. In 2013, consumer awareness of a program for recycling lamps and light fixtures was at 48%. In 2015, it increased to 49%.

The ability to increase awareness levels also depends on a number of factors, including product characteristics, purchasing frequency, product lifespan and user demographics. Awareness levels achieved to date for this Program are significant given the nature of the product and associated consumer behaviour. From experience with other programs, Stewardship programs typically experience a significant advance in consumer awareness following program launch, after growth in consumer awareness requires significant time and investment. Consumer awareness levels can also fluctuate year-to-year due to a variety of factors.

The comparison of the Program's awareness levels with other stewardship programs must take into account a number of fundamental differences in the product characteristics, including:

- Differences in methodology, scope and sample size.
- Unlike some other stewarded products, lamps and lighting equipment are generally purchased and replaced by specific members of a household.[11] By contrast, many other stewardship programs with higher awareness levels deal with products that are used by a broader cross-section of a household (e.g., bottles, paper and packaging etc.).
- The lifespan of lamps and lighting equipment is significantly longer than many other consumable stewarded products. Stewardship programs with higher awareness levels generally manage products with shorter lifespans for which consumers deal with end-of-life options on a more frequent basis, making it more "top of mind" for those consumers.

Consumer Awareness Targets and Performance Measures

The Program's objective is to continue to increase consumer awareness levels year over year. The Program commits to achieving an annual consumer awareness level of 70%. The Program will report its consumer awareness level in the annual report and provide a qualitative report on product categories that may require additional focus to increase awareness. In addition, the Program will report out on the survey question used and a summary of the survey methodology employed.

Commercial Sector Awareness Targets

It is the experience of the Program that the measurement of awareness levels within the commercial sector is very challenging. The response rate for commercial sectors is low as there is no incentive to complete surveys and finding the appropriate person within a company and organization to respond to the survey is difficult. Survey companies do not have a sampling pool for commercial users, nor do they have an ability to determine statistical reliability as they do not have the population of commercial users, unlike census data for population. Consequently, for the commercial sector, the Program will commit to awareness raising strategy as outlined in the above commercial sector awareness section, rather than awareness targets. While measuring commercial awareness is not possible for the reasons previously stated, the Program firmly believes that the additional commercial targeted strategies will result in increases in awareness level within the commercial sector.

Performance Measures

Performance Metric	Reporting Commitment/Target
Percent of residential consumers aware of the Program	Minimum 70%, surveyed bi-annually
Residential consumer awareness survey	Conduct every two (2) years from 2019
Summary of survey methodology and survey question asked	Report annually
Program website visits	Report annually
RCBC Recyclepedia website visits and hotline calls	Report annually, as applicable

[11] 2015 survey results found that respondents said they or their spouse were the person in the household that purchased Program Products. For example, 63% of respondents said that they themselves were the ones responsible for purchasing regular lightbulbs.

Program's educational materials and strategies broken down by consumer and commercial sector	Report annually
Attend at least two industry events annually	Report annually
Minimum of six print and e-newsletter ads in industry publications annually	Report annually
Investigate online industry forums to assess opportunities for the program to promote the program	By end of the first full calendar year following plan approval.
Conduct targeted outreach to electrical distributor sector	By end of the first full calendar year following plan approval.
Conduct targeted outreach to various commercial sectors	By the end of the second full calendar year following plan approval

8 MANAGEMENT OF PROGRAM COSTS

8.1 Program Revenue

The Program is funded by environmental handling fees ("EHFs") paid by Program members on the sale of new Program Products in British Columbia. The EHF is not a tax or a refundable deposit. It may be passed on by the members to their customers, either as a visible fee or by incorporating the cost directly into the price of the product. EHFs are set by PCA based on budgeting of fee revenue and Program expenses and are adjusted by PCA from time to time to address surpluses or deficits. The Program revenues are applied to the operational expenses of the Program, including:

- Administration:
- Communication and education;
- Collection, transportation, recycling and disposal of Program Products; and
- Maintaining an appropriate reserve fund.

8.2 Paying the Cost of Collecting and Managing Products, and Dispute Resolution

The Program is responsible for the proper fiscal management of Program operations including the cost of collection, transportation and recycling of Program Products.

Collection sites are compensated for their services, with the exception of return to retail sites. For return to retail sites, participation is voluntary and the benefit of participating may include increased foot traffic and evidence of the retailer's commitment to corporate social responsibility. The Program provides all contracted collection sites with collection containers and other collection supplies at the Program's expense.

The Program is committed to continuing to compensate for the service of the collection and management of Program Products. The Program pays for collection services based on a performance basis, by paying for quantity collected. The quantity collected generally increases from year to year,

providing additional compensation and efficiencies to the collection sites. This model has proved to be very successful as demonstrated by increase in the number of collection sites participating, from 380 in 2012 to 445 contracted collection sites as of the end of 2017. All paid collection sites operate under an agreement between the collection site operator and the Program.

8.3 Reserve Fund

As part of its risk management system, the Program maintains an appropriate reserve fund in accordance with PCA's Reserve Fund Policy. The reserve fund provides financial stability to the Program in the event of unexpected increases in collection volumes, fluctuations in operating costs or reduced revenue due to economics or other factors, and also provides funds to facilitate the Program's windup, if necessary. PCA monitors the Program's financial performance on an ongoing basis to ensure it remains financially sustainable and that an adequate reserve fund is maintained.

8.4 Audited Financial Statements

To ensure transparency and accountability, the Program's financial statements are audited annually by an independent third party auditor. The audited financial statements are included in the Program's annual report, which is published on PCA's website (productcare.org)

8.5 Producer Compliance

In order to maintain a 'level playing field' for Program members and to ensure compliance with the Regulation, the Program actively searches for, identifies and recruits Producers of Program Products. If an obligated Producer does not join the Program, despite being notified of their regulatory obligation, the Program refers the obligated party to the BC Ministry of Environment to pursue compliance and potential enforcement proceedings.

9 MANAGEMENT OF ENVIRONMENTAL IMPACTS

9.1 Pollution Prevention Hierarchy

In accordance with Section 13 of the Regulation, PCA works with its service providers to ensure Program Products are managed, where feasible, in accordance with the Pollution Prevention Hierarchy (PPH). This section details the management options and considerations for Program Products.

Reduce and Redesign

Lamp technologies are evolving rapidly and the lamp industry has made significant advances in addressing the environmental impacts of lighting equipment through a reduction in toxic components and quantity of materials utilized in products, as well as increased energy efficiency and product lifespans.

There have also been numerous advances in CFL technology. The amount of mercury in CFLs has been reduced, fluorescent tubes are now available in a longer life version that provides 30,000 hours of light compared to the 24,000 hours for other lamps, and fluorescent tubes with a smaller diameter are now available (T8 or T5), providing the same or more light with about 50% less material resources by weight.

The most significant development is the shift from fluorescent lighting technology to light emitting diode (LED) technologies. LEDs do not contain mercury, a necessary part of fluorescent lamp technology. LEDs also have significantly longer lifespans and are more energy efficient. Sales data indicates that this technology shift is occurring at a faster rate than anticipated.

Efforts to reduce the environmental impact of fixtures are also ongoing. Lamp and fixture manufacturers regularly review the design of these products for functionality, sustainability and impact on the environment. Polychlorinated biphenyl (PCB) ballasts have not been sold in Canada for decades. The use of lead-based paint has also declined significantly in modern fixtures. Fixture manufacturers are continuously improving the energy efficiency of their products and reducing the materials required and weight of products, where possible and applicable.

The Regulations requires reporting on the efforts taken by or on behalf of the Producer to reduce environmental impacts throughout a product's life cycle and to increase reusability or recyclability at end of life. Stewardship programs are designed to address the disposition of products at end-of-life. Stewardship programs, such as this one, have very limited ability to influence the design of Program Products. Producers must design products to meet the standards and other requirements of many different jurisdictions internationally. Product manufacturing is not done on a provincial scale but on a continental basis, if not global basis. In addition, Producers seek to design products in a manner that maximizes operational and logistical efficiencies. Finally, at times, business confidentiality and competition limit industry's ability to disclose trade secrets about new product designs. Consequently, it is very difficult for a provincial stewardship program to influence product design. Where information is made available, the Program will report out on efforts taken by industry to reduce environmental impacts throughout the product life cycle.

Reuse and Repair
For safety reasons, the Program does not provide a reuse option for fixtures. The Program is designed for lighting equipment that no longer works or cannot be safely reused. Options for managing reusable fixtures outside of the Program include reuse through a variety of channels, such as reuse/thrift stores. Expired lamps are not reusable.

Recycle and Recover
The objective of the Program is to minimize the improper disposal of Program Products by providing effective collection and ensuring that collected materials are either recycled or disposed of in an environmentally responsible manner. The Program strives to manage collected materials using the highest option on the Pollution Prevention Hierarchy that is technically feasible and economically reasonable, as set out under subsections 5(3)(d-g) of the Regulation. Current management options for each product category are detailed under section 9.2 below and may be subject to change in the future.

The Program's annual report will include a description of how the recovered products were managed in accordance with the pollution prevention hierarchy.

9.2 Management of Program Products

Lamps
The Program maintains an established system for managing lamps. After collection, lamp products are transported to the Program's primary processors. At the processors, lamp products are broken down

into their respective component materials and either processed on site or sent to a downstream processor for further processing as follows (see also Figure 1 below):

- Metal is sent to various downstream metal recyclers to process and extract commodities for resale to end markets.
- Glass is sent to various concrete manufacturing companies for use in concrete manufacturing or as an aggregate, or manufactured into sandblast media.

For CFLs and fluorescent tubes, the mercury phosphor powder is sent to a retort facility, where mercury gets separated from phosphor powder. Liquid mercury from HID lamps goes through a retort process. Historically, mercury was sold back into the market as a commodity for manufacturing or disposed of in an environmentally responsible manner. However, due to the continued decrease in demand for mercury-containing products, mercury is treated prior to disposal in secured landfill or long-term storage. The phosphor powder is reused where economically feasible, and if not, disposed of in an environmentally responsible manner.

At the time when the original program plan was developed, there were no standards, guidelines or regulatory requirements in place that provided oversight of lamp processing. PCA developed its Lamp Processing Standard to ensure proper and safe recycling of lamps. Lamp processors are required to conform to the Standard, which defines the minimum requirements to operate as an approved processor for the Program, including managing materials in accordance with all federal and provincial regulatory requirements (see section 9.2 above). The Standard also sets out environmental, occupational health and safety, and material handling rules to ensure materials are managed appropriately. Final use (end fate) of materials is considered when selecting processors. Processors' operations are audited bi-annually at a minimum, either by Program staff or third party, to ensure compliance.

PCA relies on a desk audit of processors to identify the chain of custody through to the end fate of the product. PCA's ability to document the end fate of each product category is dependent the information provided by the processor. PCA provides available information with regard to end fate in the Program's annual report. Availability of options to move materials up the hierarchy are regularly monitored.

Residential Fixtures

Residential fixtures contain materials similar to small appliances (e.g., metal, glass, plastics, etc.). As a result, the Program partners with the Canadian Electrical Stewardship Association (CESA) stewardship program to collect residential fixtures and non-PCB ballasts together with small appliances and power tools at contracted collection sites that also serve as CESA depots. They are shipped to processors where they are comingled with other electronics and broken down into their respective components (see Figure 1 below). Materials received by the processors are sampled to estimate the proportion of residential fixtures v. CESA products. This coefficient is used to then calculate the estimated weight of residential fixtures collected.

Commercial Fixtures and Non-PCB Ballasts

Commercial fixtures and non-PCB ballasts are collected and managed outside the Program through the existing market-driven metal recycling system. Based on observations during onsite sampling events, commercial fixtures and non-PCB ballast make up an extremely small portion of the overall scrap metal market. There are several reasons for this management approach. First, it recognizes the intrinsic value of these products due to their metal content and the desire not to disrupt the pre-existing, effective

private metal recycling system that maximizes the associated revenue potential. Second, most of the Program's collection sites do not have the space to accommodate large commercial fixtures. Commercial fixtures often arrive at private metal collection facilities comingled with other products and like materials. In many instances, segregating them at that point is not reasonable from either an economic or operational perspective. Given this context, it is not practical to have private metal collection facilities verify or report out on the volume of commercial fixtures recycled and/or disposed of through their operations. The Program employs sampling studies to confirm that commercial fixtures are being managed through the private metal recycling system (see section 6.3 above).

PCB Ballasts

The management of PCB-containing products is subject to unique provincial and federal regulation. Consequently, PCB ballasts are collected and managed as hazardous waste and incinerated at high temperature at a licensed incinerator.

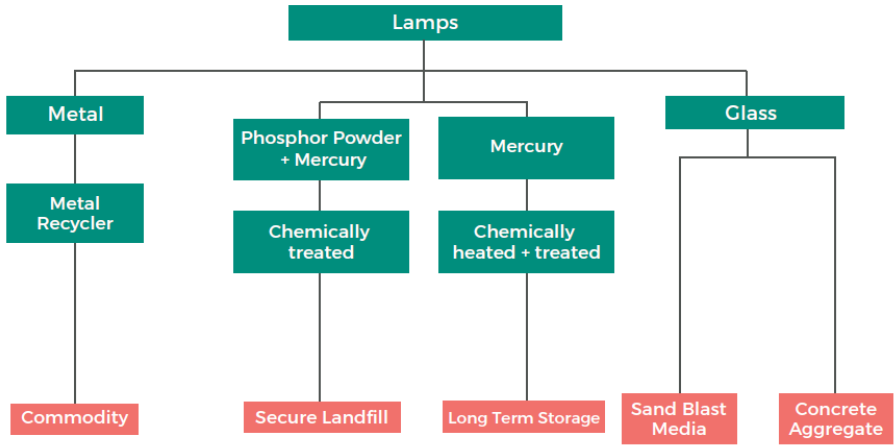
Performance Measures

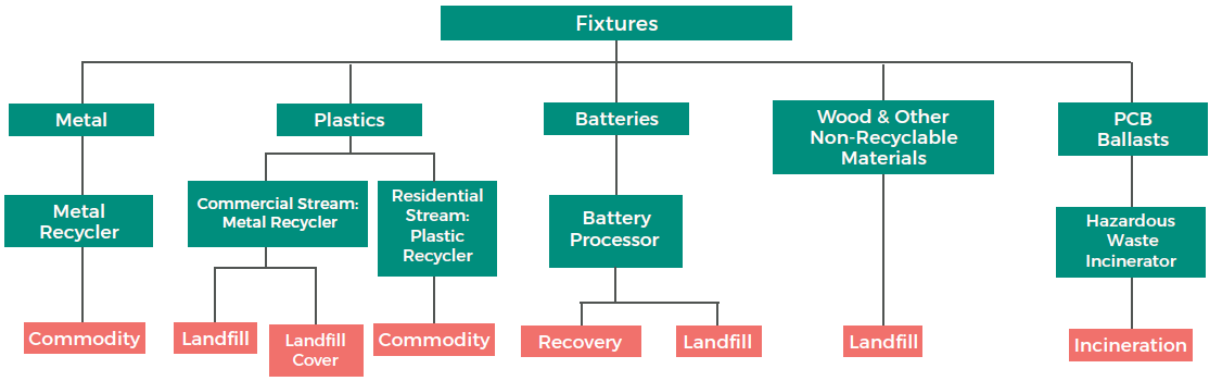
Performance Metric	Reporting Commitment/Target
End fate management of materials from lamps, residential fixtures and PCB ballasts	Report annually on processing pathways according to the Pollution Prevention Hierarchy

End fate management options for lamps and fixtures are illustrated below in Figure 1.

Figure 1: Current Program Product Material Management Options and End Disposition

The following flowcharts map the current processing pathways and final disposition of materials derived from Program Products. Material management options are subject to change.





10 PERFORMANCE MONITORING AND ENVIRONMENTAL COMMITMENTS

The objective of stewardship programs is to ensure that stewarded products are diverted from landfill and are managed in accordance with the highest possible use on the pollution prevention hierarchy, where feasible. In order demonstrate Program performance, this Stewardship Plan sets out a number of performance metrics, which collectively, illustrate the Program's success. Firstly, accessibility targets ensure that British Columbians have reasonable and free access to the Program's contracted collection sites. Secondly, consumer awareness targets demonstrate that the public is aware the Program exists, knows the collection network is available and understands how to manage Program Product at end-of-life. Thirdly, reporting of collection volumes indicate that British Columbians are not only aware of the Program, but are utilizing the Program. Collection volumes have grown significantly over the recent years. In addition, the private metal recycling system provides a viable pathway that ensures the recycling of commercial fixtures. Also, the Program partners with municipal sites to participate in waste audits. The Program will continue to report out on both waste audits and on sampling studies to provide evidence that Program Product is being managed through the correct pathways. Collectively, such indicators illustrate a robust and successful Program. The metrics are reasonable, trackable and provide good indicators of Program success.

Performance Metric	Reporting Commitment/Target	Subject to Audit
Collection System and Accessibility		
Number of contracted collection sites	Report annually on number of contracted collection sites by collection site type for commercial lamps, commercial fixtures, residential lamps, and residential fixtures, as well as a list of all contracted sites and the municipality where they are located, and identify changes from previous year.	Yes

Performance Metric		Reporting Commitment/Target	Subject to Audit
Number of contracted collection sites by regional district		Report annually	No
Number of collection events		Report annually and provide list of events with locations	No
Gap areas[12] in network for residential use lamps		Report annually	No
Gap areas in network for residential fixtures		Report annually	No
Gap areas in network for commercial use lamps		Report annually	No
Gap areas in network for commercial fixtures		Report annually	No
Percent of population with access to a collection site	Residential-use lamps	Minimum of 95% accessibility rate based on SABC Accessibility Standard	Yes
	Residential-use fixtures	Minimum of 95% accessibility rate based on SABC Accessibility Standard	Yes
	Commercial-use lamps	Minimum of 95% accessibility rate based on SABC Accessibility Standard	Yes
	Commercial-use fixtures	Minimum of 95% accessibility rate based on SABC Accessibility Standard	Yes
Waste Audits			
Participation in all waste composition studies committed to by SABC		Report annually	No
Kilograms per capita of Program Product identified during waste audits		Report annually	No
Total amount of batteries found per waste audit conducted		Report annually	No
Collections			
All lamps		Total units collected by category[13] Total estimated units collected by regional district[14]	Yes

[12] According to the SABC Accessibility standard defined above.

[13] In accordance with new lamp categories detailed above in section 6.3 of the Program Plan.

[14] Regional district counts are estimated based on average lamps per box collected from each regional district.

Performance Metric	Reporting Commitment/Target	Subject to Audit
Residential Fixtures	Total estimated weight collected	Yes
PCB-Containing Ballasts	Total weight collected Total weight collected by regional district	No
Sampling events	Number and location of sampling events	Yes
All sales by product category	Units Sold	Yes
Residential lamp units per capita collections by regional district	Report annually	No
Residential fixtures kg per capita collections by regional district	Report annually	No
Consumer Awareness		
Percent of residential consumers aware of the Program	Minimum 70%, surveyed bi-annually	No
Residential consumer awareness survey	Conduct every two (2) years from 2019	No
Summary of survey methodology and survey question asked	Report annually	No
Program website visits	Report annually	No
RCBC Recyclepedia website visits and hotline calls	Report annually, as applicable	No
Program's educational materials and strategies broken down by consumer and commercial sector	Report annually	No
Attending at least two industry events annually	Report annually	No
Minimum of six print and e-newsletter ads in industry publications annually	Report annually	No
Investigate online industry forums to assess opportunities for the program to promote the program	By end of the first full calendar year following plan approval.	No
Conduct targeted outreach to electrical distributors/wholesalers	By end of the first full calendar year following plan approval.	No

Performance Metric	Reporting Commitment/Target	Subject to Audit
Conduct targeted outreach to electrical distributor sector	By end of the first full calendar year following plan approval.	No
Management of Environmental Impacts		
End fate management of materials from lamps, residential fixtures and PCB ballasts	Report annually on processing pathways according to the Pollution Prevention Hierarchy	Yes

APPENDIX A: GLOSSARIES

Term	
BC LightRecycle	BC Lamps and Lighting Equipment Stewardship Plan
Program	The BC Lamps and Lighting Equipment Stewardship Program
Program Product	Product included within the scope of the Program
Regulation	BC Recycling Regulation Reg. 449/2004
Stewardship Plan	BC Lamps and Lighting Equipment Stewardship Plan

Acronym	
PCA	Product Care Association
CESA	Canadian Electrical Stewardship Association
CFL	Compact Fluorescent
CWMA	Coast Waste Management Association
EPSC	Electronics Product Stewardship Canada
EHF	Environmental Handling Fee
ERS	Electronic Recycling Standard
HID	High Intensity Discharge
LVG	Large Volume Generator
RCBC	Recycling Council of British Columbia
SABC	Stewardship Agencies of British Columbia
LED	Light-Emitting Diode
LVG/LVEU	Large Volume Generators/Large Volume End Users
UV	Ultra Violet

APPENDIX B: LIST OF CONSULTATION PARTICIPANTS

Through the consultation process, PCA engaged with 99 stakeholders representing a range of affected constituencies, including indigenous communities, government, industry, non-profit organizations and program service providers. The following is a list of organizations that participated in the consultations.

Organization Category	Number of Individuals
Indigenous Communities	**2**
In.tent Planning	1
Takla Lake First Nation	1
Government	**38**
BCPSC	1
Capital Regional District	1
Cariboo RD	1
City of Coquitlam	1
City of Kamloops	1
City of Vancouver	2
Columbia Shuswap Regional District	3
Comox Valley Regional District	1
Cowichan Valley Regional District	1
District of West Vancouver	1
Fraser Valley Regional District	1
Metro Vancouver	2
North Coast Regional District	1
Peace River Regional District	3
Regional District Kootenay Boundary	1
Regional District of Bulkley-Nechako	1
Regional District of Central Kootenay	1
Regional District of Central Okanagan	1
Regional District of East Kootenay	2
Regional District of Fraser-Fort George	1
Regional District of Kitimat-Stikine	1
Regional District of Nanaimo	1
Regional District of North Okanagan	1
Regional District of North Okanagan	1
Squamish-Lillooet Regional District	1
Sunshine Coast Regional District	3
Thompson-Nicola Regional District	2
Village of Harrison Hot Springs	1
Industry	**44**
Amway Canada Corporation	1
BenQ Canada Corp.	1

Organization Category	Number of Individuals
BMW Canada Inc.	2
Canadian Tire Corporation	2
Costco Wholesale Canada Ltd.	2
Dell Technologies Canada	1
Dynamic Management Services	2
Energizer LLC	1
Envirotech Associates Ltd.	4
FCA Canada Inc.	1
Gescan Electrical	1
Global Automakers of Canada	1
Hawthorne	1
Home Depot Canada	3
Home Hardware Stores Ltd.	1
Kuzco Lighting	1
Loblaw Companies Ltd.	2
London Drugs Ltd.	1
Mercedes-Benz Canada	2
Orgill Canada Hardlines ULC	1
Philips	1
RONA Inc.	1
SLS Group Industries Inc.	1
STANDARD PRODUCTS INC	1
SunBlaster Holdings	1
Toyota Canada Inc.	2
Uvalux Inc.	4
XeroWaste Solutions	2
Non-Profit	**7**
Coast Waste Management Association	2
Encorp	1
EPRA	1
Let's Talk Trash	1
Recycling & Environmental Action Planning Society	1
Recycling Council of BC	1
Other	**2**
Kelleher Environmental	1
MGM Management	1
Service Providers	**6**
Interior Freight & Bottle Depot	1
Nulife industries Inc.	3
Parksville Bottle & Recycling Depot	1

Organization Category	Number of Individuals
Willowbrook Recycling Inc.	1
Grand Total	**99**

APPENDIX C: STAKEHOLDER COMMENTS AND RESPONSES

Feedback received at the consultation events and via email is summarized in the table below. Questions/comments have been grouped according to each section of the Program Plan. Each question/comment has been recorded verbatim (as much as possible) along with the stakeholder's sector. PCA's response is provided for each question/comment, including how it has been addressed in the Program Plan, if applicable.

Section 3: Appointment of Stewardship Agency			
#	**Sector**	**Question/Comment**	**Response**
1	Industry	How will the Program educate businesses about the Program where they are either evading their obligation intentionally or not? How are Program users supposed to know who is to remit fees?	PCA employs a broad strategy to raise awareness amongst industry participants about their regulatory obligations that includes identifying non-compliant obligated parties through member audits, review of industry association member lists, feedback from other industry members, and general internet and phone directory searches. PCA publishes a current list of Program members on its website. Due to variations and complexities in the supply chain, the PCA policy requires all Program members to either remit the fees to the Program or to ensure that a supplier or customer is doing so.
2	Industry	When e-commerce sells and ships into BC are they charged an ECO Fee?	Any company that meets the definition of "Producer" under the Regulation, including e-commerce businesses, are obligated to comply with the Regulation. If they are registered with the Program, they are obligated to comply with the terms of the membership agreement and PCA policies, including the requirement to report and remit fees.

Section 4: Program Products			
#	**Sector**	**Question/Comment**	**Response**
3	Industry	How is the Program going to define commercial and residential products where their use and distribution are often in both categories?	The Program accepts both residential and commercial lamps and lighting equipment. Furthermore, EHFs are not applied based on product use. Therefore, there is no need to distinguish between residential and commercial uses.
4	Local Government	Are grow lights for plants and the associated fixtures included in your Program? Can this be called out specifically in the Plan?	As stated in the BC LightRecycle Program Product Guide, grow lamps and their associated fixtures are a part of the Program. The Program's Product Guide is referenced in the Plan and is available on the Program's website (www.lightrecycle).
5	Industry	What impact do the proposed changes to product categories have on fee rates?	The consolidation of product categories referenced in the Program Plan is only with respect to reporting on Products collected and has no application to product sales or associated EHFs. The discussion on the consolidation of product categories has been moved to section 6 of the Program Plan to provide greater clarity.

Section 5: Stakeholder Consultation			
#	**Sector**	**Question/Comment**	**Response**
6	Industry	Can we get a copy of the power point presentation please?	The PowerPoint presentation was distributed to all stakeholders that were notified about or attended consultations.
7	Local Government	Is it possible to have a copy of the presentation?	See response to question 6 above.
8	Government	The Plan uses the qualifier "where feasible" for a number of activities and actions that may be undertaken by the Program. Recommend the Program identify criteria to define 'feasibility' so that stakeholders may make commentary on the reasonableness of the Plan's approach.	Factors considered in evaluating feasibility of an activity/action include, but are not limited to, economics, level of stakeholder cooperation, timing and a host of other considerations. In each instance, the criteria and thresholds applied will vary depending on the specific activity/action.

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
9	Industry	With regards to the consolidation of product categories in the proposed Program Plan, it seems as though this change will affect the reporting categories used by Stewards, and also potentially the EHFs on the affected products if they are all consolidated into one product category. Having already followed up with LightRecycle on this matter I understand that this is not the case. If you could please revise the Program Plan to make it very clear that the consolidation of product categories will only affect the way Product Care reports collection volumes, this would be very helpful.	The Program Plan has been amended to clarify that the new product categorization applies to collected products only, not product sales. The new product categorization only applies to reporting on product collected, not on sales. Therefore, there is no impact on EHFs. We have moved this product categorization from Section 4 to Section 6 for clarity.

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
10	Industry	Just some observations on the product categorization. HID lamps are not Fluorescent lamps so it would be more accurate to call the category Mercury containing lamps.	The reporting category in the draft Program Plan circulated for consultation has been amended from "Fluorescent (mercury-containing)" to "Mercury-containing" to more accurately reflect this category of product.
11	Industry	Traditional lamps usually include HIDs and tubes, it would be more accurate to call this category Incandescent or incandescent/halogen lamps.	The category has been renamed Incandescent and Halogen Lamps in the Program Plan, section 6.3.
12	Industry	Does "minibulb" exclude LED minibulbs? If it is not the case, then neither name seems accurate.	All minibulbs are included under the category Incandescent and Halogen in the Program Plan for reporting out on collection volumes only (see section 6.3). The categorization of Products with respect to fees is addressed outside the Program Plan.
13	Local Government	How are products not managed directly through the Program handled? Market based? How is that system being paid for?	In the Program, commercial fixtures are a product managed through the metal recycling industry. The Program contracts with the metal recycling sites, who receive fixtures comingled with other products and metals. Commercial fixtures have inherent value due to their high metal content. The inherent value supports the management of the Products through the metal recycling industry.
14	Service Provider	Depot costs are rising, what is PCA doing to address this issue?	A viable collection system is fundamentally important to the Program. PCA generally uses a volume-based approach to compensate collection sites. The more Program Product collected, the greater the amount of compensation. In general, collection volumes, and hence compensation, increase year over year. Compensation rates are a business decision outside the scope of the Program Plan. The Program considers that it adequately provides for the costs of collecting and managing Products within the product category covered by the Plan as evidenced by the level of participation by collection sites and the associated accessibility levels.
15	Industry	More needs to be done to capture light fixtures that still work and put them back in the market to avoid sending working lamp fixtures to recycling.	In keeping with the pollution prevention hierarchy, the Program encourages consumers to find opportunities to reuse fixtures whenever and wherever possible. The Program itself provides consumers with a responsible solution for end-of-life Products.

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
16	Service Provider	How are we supposed to know if the Program is in compliance with the regulation if we can't talk about payments to depots?	Section 5 of the Regulation lists a number of requirements upon which the director must consider when reviewing a plan, including a requirement that the Program makes adequate provision for a number requirements related to Program delivery. It is the understanding of PCA that the Program must satisfy these requirements with regard to the Program as a whole, which PCA considers that it has done. PCA is discusses terms of agreements directly with service providers.
17	Local Government	When you were talking about collections quantities, you mentioned that all the lamp categories collections would be reported out by regional district but there wasn't reference to that for PCB ballasts or fixtures. Do those get reported by regional district as well or just overall number?	The Program Plan has been modified. PCA will report out on PCB-containing ballast collections by weight by regional district (see section 6.3). PCA will report out on residential fixture collections by regional district. For consumer convenience and Program efficiency, residential fixtures are collected in partnership with the small appliances stewardship program. The quantity of residential fixtures is estimated by sampling. This provide-wide percentage is applied to the combined collection volumes at a regional level to estimate the weight of residential fixtures collected by regional district. With regard to commercial fixtures, see section 6.3 in the Program Plan.
18	Local Government	Regarding the section on absolute collections and capture rate. Totally understand what you're saying about capture rate and dealing with fluid market that is rapidly evolving. I'm a bit concerned now that the Program is not setting collection targets for the ability to measure targets on collections.	Due to the magnitude of the change, and the uncertainty as to timing, PCA is of the opinion it is not useful, and potentially misleading, to set collection and capture rate targets, or similar performance targets, at this time. Program performance should not be evaluated based on a single metric. However, the Program monitors trends and performance on an ongoing basis and will undertake to review the appropriateness of collection targets when the market shows signs of stabilizing and LED technologies mature to the point that estimated product life reflects actual product performance.
19	Service Provider	Is a raise in collectors' remuneration being considered? Especially with the increases in products being added to the Program? Is there a system in place to work with the depots to make sure payment is covering actual costs in handling your products?	The Program is not considering any changes to the collection site compensation model at this time. The Program employs a volume-based compensation model that rewards collection sites based on the amount of Program Product collected, which has historically increased year over year. The approach for setting compensation for Program service providers is a business decision addressed outside the scope of the Program Plan.

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
20	Local Government	As a municipality diverting PCB ballasts from scrap metal and landfill, we are being charged for non-PCB ballasts in the drums - a non-hazardous waste. What will you do to support municipalities who are offering this service to residents (on your behalf)? Will you provide compensation for collection, or provide better resources for sorting?	The Program offers free pick-up of PCB-containing ballasts. The Program does not contract with entities for the collection of these Products. Generators are responsible for identifying and ensuring that only PCB ballasts are returned through the Program's pick up service. The Program provides guidelines on its website for identifying and segregating PCB from non-PCB ballasts.
21	Local Government	Are the collection volumes of lamps going to be a combination of residential and commercial volumes?	The number of lamp units collected is a combination of residential and commercial lamps.
22	Indigenous Community	I would like to congratulate Product Care in being on the forefront of product stewardship with First Nations. One of the early slides was on types of collectors. Would you entertain putting up First Nations as they often have their own independent recycling facilities?	Thank you for the positive feedback on the Program. The Program Plan has been amended to identify First Nations as a category of collectors. PCA continues to work with interested indigenous communities.
23	Indigenous Community	Often technology change leads to increases of a certain type of product. Due to the funding structure, there will be fluctuations in products collected such in a mold remediation and increase in the amount of say, mercury bulbs collected. We could work with you to help start to identify project in the communities.	PCA welcomes opportunities to work with indigenous communities to address the collection of Program Products at end-of-life and to identify related community projects where economically feasible and practical.
24	Local Government	If you are moving away from the capture rate target for lamps, are you replacing it with any other collection target? Or are you just reporting on volumes with no target at all?	See response to question 18 above.

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
25	Industry	Why are some British Columbians charged a fee when they go to drop off lamps for recycling?	Pursuant to the Regulation and the terms of their contract with PCA, all contracted collection sites must offer to accept Program Products from consumers at no charge. If you are aware of a site that is charging a fee, please advise the Program and we will address the situation. There may be locations that accept lamps outside PCA's collection network, but that are not under contract with the Program. In such cases, the Program has no ability to insist that the location accept products at no charge. We suggest that the consumer consult the Program's depot locator at lightrecycle.ca and identify the nearest contracted collection site to recycle their Program Products free of charge.
26	Local Government	Why can't you use a year over year increase in collection volumes as a target for lamps with the Program at this mature stage?	While the industry as a whole is mature, the specific technologies are undergoing significant and rapid change. As noted previously, the lighting industry is experiencing an unprecedented shift in technology from CFLs to LEDs. Sales of CFLs are dropping faster than anticipated, while LED sales have risen faster than expected. Similarly, CFLs are being recycled in larger quantities than anticipated, likely due to early removal as part of energy retrofits. Lifespans of first generation LEDs are also less reliable. Consequently, it is not possible to predict collection volumes with any degree of certainty at this time.
27	Service Provider	Is there any plan to increase handling fees on products collected by depots?	Please see question 14.
28	Local Government	About the waste composition studies: Can you give us a sense of how that would look given the fact that not too many local governments do waste composition analyses on an annual basis. Would you try to report on those who do or normalize it on a province-wide basis somehow? How would that look in the annual report?	PCA participates in waste audits conducted by regional districts. It is not financially viable for a single stewardship program to conduct that type of an audit independently, so PCA works in partnership with regional governments and other stewardship organizations. Historically, PCA has reported out on findings from individual waste composition audits. Extrapolating findings across the province would not be reliable given the sample size and potential variations across regional districts.

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#	**Sector**	**Question/Comment**	**Response**
29	Local Government	Page 17 says "Program contracts with all suppliers…" But 9.2 under commercial fixtures-"market driven…" So there is a portion of the Program you do not contract with?	The Program contracts with all collection sites in its network, including the metal recycling collection sites for commercial fixtures. Collection sites that accept commercial fixtures contractually agree to accept the Program Products at no cost to the consumer. This has been clarified in section 9.2 of the Program Plan.
30	Local Government	How will or how are the new LEDs recycled?	LEDs are currently being broken down and recycled. The material composition of LEDs varies by product and is evolving rapidly. PCA works with our processors on an ongoing basis to continually identify better ways to manage LEDs at their end of life.
31	Local Government	Is there is a drive to standardize the technology [for recycling LEDs]?	PCA is working with its processors to identify preferred technologies for processing LEDs. These efforts are in the early stages. Challenges include the changing and evolving design and material composition of LED products.
32	Service Provider	Lack of clearly defined process to engage consistently with collectors and transporters regarding Program financial management and fair costing for services. There is not a mechanism in place to meet & discuss every 3-5 years with transporters or collectors regarding fees paid for performing the work. Inconsistent contracting arrangements and eroding economics for some stakeholders as handling fees lag inflation; impact on quality of service and financial viability. Collaborate with progressive collectors and transporters to create a defined mechanism to review	See response to question 19 above.

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
		Program costs and adjust fees fairly to reflect reasonable operating costs and returns.	
		Poor quality of some transportation supplies. Poor quality and broken supplies put collectors and public at risk. Broken collection boxes can pose risks and cracks allow rain or other fluids to contaminate loads. Broken collection boxes can pose risks and cracks allow rain or other fluids to contaminate loads. Invest in improvements to supplies for collectors; create a mechanism for tracking supplies that are aging or damaged that collectors can use.	This feedback may not be in reference to this Program as collection boxes are always new and never reused. PCA provides guidelines on best management practices for handling of Program Products at collection sites, including the requirement to keep lamp boxes inside. Every box is supplied with a plastic liner to ensure extra protection.
		Disproportionate amount of storage/floor space used for very low return material; poor economics. Adjust the handling fee to reflect true storage costs and an inflation factor.	Please see response to question 45.
		Packaging for bulbs is inefficient for collectors. Poor boxes and packaging for light Program creates handling inefficiencies for collectors. Inefficiencies in handling materials put an extra cost on collectors; especially when received incorrectly. Review product collection packaging with collector and transporter stakeholders to optimize; adjust the handling fee to reflect true costs.	The Program provides a variety of different types and sizes of collection containers providing flexibility to meet the varied needs of different collection sites. The collection boxes have evolved over time and is consistent with other jurisdictions that have lamp recycling programs. The Program commits to continued review of Program Product collection packaging with collectors and transporters. Specific handling and packaging procedures are necessary to ensure protection of human health and the environment.
		Inadequate Consumer Education. Consumers are depositing materials improperly and depot is receiving illegal materials and	PCA continues to work with collectors and consumers in various ways to educate them about what products are and are not accepted by the Program, including collection site product guides, Program Product clarifications, and

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
		frequently bearing the cost for responsible management. Eroding economics for some stakeholders as handling fees lag inflation; impact on quality of service and financial viability. Collaborate with progressive collectors and local governments to better educate public and commercial operators about correct and responsible handling procedures for HHW. Lack of backdrop framework for dispute resolution and negotiating service level agreements. Lack of clearly defined process within the Regulation for Steward to engage consistently with collectors and transporters regarding Program financial management. Inconsistent contracting arrangements and eroding economics for some stakeholders as handling fees lag inflation; uncertainty for collectors and industry; higher costs for all. Collaborate with progressive collectors and Ministry to define a reasonable backdrop process to resolve disputes; embed via a regulatory amendment; create certainty for collectors, transporters and industry.	product lists for consumers available online and in print. HHW products are not included in this Program. Illegal dumping is a broader issue and not the sole responsibility of the Program. Addressing this issue requires collaboration between local and provincial governments, other stakeholders and PCA. See response to question 19 above. See response to question 19 above.
33	Local Government	The absence of collection targets for light bulbs ("lamps") and lighting fixtures is problematic and needs to be addressed in the final version of the Plan. Targets are needed to ensure accountability and drive continuous improvement towards recovering all end-of-life lamps and fixtures. We suggest starting with aggressive targets in the near-	See response to question 24 above.

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
		term that would diminish over time as the Program comes closer to maximizing collection. At the very least, LightRecycle could adopt this as an aspirational target until the technology stabilizes.	
34	Local Government	The City requests that LightRecycle include an action in the Plan to offer collection locations to residents for PCB ballast recycling. The Recycling Regulation makes producers responsible for all electronic or electrical lighting equipment, parts and bulbs. The City receives lamps left (dumped) by the public at our transfer station and landfill, including PCB-containing ballasts. To prevent PCBs from entering the landfill, our staff sort them from non-PCB ballasts, then contact Product Care to pick them up as a large generator. However, the sorting requirements are challenging, and the City has incurred charges for including non-PCB ballasts in PCB loads. There should not be a cost to a municipality for handling PCB or non-PCB ballasts that are the responsibility of the Program. We would ask LightRecycle to support local governments who are willing to provide this service, and include an action in the Plan to this effect.	PCBs are regulated under Federal PCB Regulations and the BC Hazardous Waste Regulation (BCHWR). The BCHWR imposes stringent requirements on the collection and transportation of PCBs. These regulations and associated restrictions make it difficult to establish permanent collection sites for PCB-containing products. Rather, PCA picks up PCB ballasts directly from the public and from generators. Generators are required to identify and sort ballasts that they receive and then contact PCA to arrange for pick-up of any PCB-containing ballasts. Proper identification of PCB waste is required by the Generator pursuant to the Regulations. The Program provides Generator Guidelines on its website[15] for identifying and segregating PCB from non-PCB ballasts to ensure the PCB ballasts are safely handled and ready for pickup. The Program works actively with the collection network to pick up any such products when they are identified.

[15] Generator Guidelines are available on the website: https://www.lightrecycle.ca/wp-content/uploads/2015/01/PCB-Ballast-Pick-Up-Guidelines-October-12-12.pdf

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
35	Local Government	The LightRecycle Program should be commended for its broad collection network.	Thank you. We pride ourselves on providing a comprehensive Program.
36	Local Government	6.3 Absolute Collection Quantity, Page 9: "Due to the value of the metals found in lighting fixtures, some commercial generators direct fixtures to the private scrap metal system, which is outside of the scope of the Program's collection system." On Page 17 of the Plan, it states that the Program has contracts with all suppliers and service providers. The Plan should clarify whether scrap metal dealers are or are not under contract.	See response to question 29 above.
37	Local Government	6.3 Absolute Collection Quantity, Page 9: "Consequently, the Program will report out on the number of units of lamps collected by product category and weight of fixtures collected, as well as the actions to be taken to increase collections, but will not continue with the sampling at scrap metal facilities and will not set collection targets." It is concerning that the Program's response is to abandon the practice of setting targets in its entirety. Recommend that Program revisit performance measures periodically, and update the plan with suitable targets if/when conditions stabilize or data collection techniques improve. In addition, no rationale is provided for discontinuing the sampling at scrap metal facilities. In the absence of definitive data which demonstrates no Program	In response to the comment, the Program Plan has been modified and PCA will continue to participate in sampling studies to confirm commercial fixtures are being managed through the private metal recycling system.

Section 6: Collection System			
#	**Sector**	**Question/Comment**	**Response**
		Products are returned through this channel, sampling and reporting of this data should continue.	
38	Local Government	6.4 Capture Rate, Page 10: "Consequently, the Program does not view capture rate as an applicable or reliable metric." What alternative performance metrics has the Program evaluated to use in place of 'capture rate'?	See response to question 18 above. No alternative performance measures are being contemplated at this time. Program performance is evaluated based on consideration of a number of different performance indicators, as outlined in the Program Plan.

Section 7: Consumer Awareness			
#	**Sector**	**Question/Comment**	**Response**
39	Local Government	Can you describe a bit more about consumer awareness, what was the question you asked, can you talk more about what constitutes awareness? The magic question is do you know where to take it and if people can answer it positively then you have your awareness metric.	The question that is used to determine consumer awareness asks whether the respondent is aware of a Program that accepts lamps and lighting equipment.
40	Industry	What are you doing to make the consumer aware of the Program from the point of sale?	Please see the Point of Sale description under section 7 of the Program Plan.

Section 7: Consumer Awareness			
#	**Sector**	**Question/Comment**	**Response**
41	Industry	Will we be given pamphlets to send out with product we sell?	Point of sale materials are available free of charge and can be ordered directly on PCA's website, productcare.org. Alternatively, please contact the Program's Coordinator and they can work with you to identify the materials best suited to support your efforts.
42	Local Government	Your awareness is less than 50%. Would you consider committing to a dollar amount of spending on marketing and education?	The Program has invested significant funds into raising consumer awareness. In any marketing initiative, it is the strategy and tactics, rather than just the amount spent, that obtains the results. Awareness levels for this Program are significant given the nature of the product and associated consumer behaviour. Lamps and lighting equipment are handled by a select number of individuals in a household and only on an occasional basis, so management options at end-of-life are not top-of-mind with consumers. Therefore, we are not committing to spending a specific dollar amount on marketing and education, but rather will focus on exploring the most effective strategies to achieve awareness targets.
43	Indigenous Communities	On consumer awareness, you do spend quite a lot on it already and prefer targeted efforts. In that instance, INAC runs through one of their departmental Programs in First Nations schools and communities. For example, on Earth Day, there will be Programs to collect batteries. Programs like this might be good to work with schools.	We are open to exploring such opportunities with indigenous communities and schools.
44	Local Government	The proposed target to increase public awareness (by 1.5% average annual increase from 2015 baseline levels of 49%) is low. City staff would like to see LightRecycle adopt a more aggressive target to achieve substantially higher awareness levels by 2021. To support this, awareness surveys ought to be conducted annually instead of every two years as proposed	From experience with other programs, consumer awareness tends to increase at a slower rate as a program matures. The ability to increase awareness depends on a number of factors, including the product characteristics, frequency of purchases, demographics of users, etc. In that regard, see response to question 29 above. It is common practice to conduct consumer awareness surveys on a bi-annual basis given associated costs and it is the opinion of PCA that the increased cost associated with increasing the survey frequency would not yield additional benefits.

Section 7: Consumer Awareness			
#	**Sector**	**Question/Comment**	**Response**
		in the current version of the Plan.	

Section 8: Management of Program Costs			
#	**Sector**	**Question/Comment**	**Response**
45	Service Provider	On invoices received from PCA for the paint Program, there is a storage fee applied. What is the purpose of this fee and why isn't there one for lights. Could you implement that?	Collection site compensation models vary. The BC Paint and Household Hazardous Waste Stewardship Program initially provided a compensation model with two elements: A fixed fee based on space required and a separate amount based on quantities collected. The first element is no longer part of the compensation for collection sites in the BC Paint and HHW Stewardship Program, but has been grandfathered for those collection sites that were early participants in the Program. In the case of lamp and lighting equipment, collection site compensation is based solely on units collected.
46	Industry	Will there be any fee changes to the EHF?	The Program does not anticipate any changes to EHFs in the near future.

Section 9: Management of Program Products			
#	**Sector**	**Question/Comment**	**Response**
47	Local Government	9.2 Management of Program Products, Page 15: “Since it is a market driven system, the Program has no ability to verify or report on the volume and portion of the material recycled and or disposed of through this system.” If all service providers are under contract, the Program could update the contract to specify data collection, verification, and reporting. In this case, the Program has chosen not to do so, but this does not mean there is “no ability” to do it.	The referenced statement in the Program Plan has been amended. See the description of commercial fixtures and non-PCB ballasts under section 9.2.

Section 10: Dispute Resolution			
#	**Sector**	**Question/Comment**	**Response**
48	Government	10 Dispute Resolution, Page 17: "The Program contracts with all suppliers and service providers by way of commercial agreements." The Plan needs greater clarity regarding whether collectors and processors (including scrap metals recyclers) are under contract or not. The statement above indicates all players are under contract, but other sections of the Plan state that some collectors operate outside of the Program.	See response to question 29 above.