

# British Columbia Lamps and Lighting Equipment Extended Producer Responsibility Program Plan

**For submission to:**

Director, Extended Producer Responsibility  
Environmental Standards Branch  
BC Ministry of Environment & Climate Change Strategy

**Submitted by:**

Product Care Association of Canada

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## GLOSSARY OF TERMS

CESA	Canadian Electrical Stewardship Association
CFL	Compact Fluorescent
CWMA	Coast Waste Management Association
EHF	Environmental Handling Fee
HID	High Intensity Discharge
LED	Light-Emitting Diode
LVG	Large Volume Generator
PCA	Product Care Association
Program	BC Lamps and Lighting Equipment Extended Producer Responsibility Program
Program Plan	BC Lamps and Lighting Equipment Extended Producer Responsibility Program Plan
Program Product	Product included within the scope of the Program as detailed in section 4 of this Program Plan
RCBC	Recycling Council of British Columbia
Regulation	BC Recycling Regulation Reg. 449/2004, as amended
SABC	Stewardship Agencies of British Columbia
UV	Ultra Violet

## 1 INTRODUCTION

This amended BC Lamps and Lighting Equipment Extended Producer Responsibility Program Plan (“Program Plan”) is submitted to the British Columbia Ministry of Environment and Climate Change Strategy (“MoECCS”) by Product Care Association of Canada (“Product Care”) on behalf of the Producers of lamps and lighting equipment sold in British Columbia who are the members of Product Care, pursuant to the requirements under section 6 of the [BC Recycling Regulation](#) (“Regulation”).<sup>1</sup> The BC Lamps and Lighting Equipment Extended Producer Responsibility Program (“Program”) is an approved stewardship program operated and managed by Product Care since July 2010.

## 2 DUTY OF PRODUCER

The responsibilities of Producers are defined in Section 2.1 of the Regulation:

*Except as otherwise specifically provided in this regulation, a producer must*

*(a) have an approved plan under Part 2 [Extended Producer Responsibility Plans] and comply with the approved plan, or*

*(b) comply with Part 3 [Extended Producer Responsibility Program Requirements If No Extended Producer Responsibility 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.*

Section 1 of the Regulation defines “Producer” as:

*(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 BC Recycling Regulation Guide makes further reference to the definition as “.... importer, broker or retailer who sells the product directly to a consumer or imports and uses the product in a commercial enterprise and includes catalogue or internet transactions”.<sup>2</sup>

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<sup>1</sup> British Columbia Ministry of Environment, *BC Recycling Regulation*, BC Reg. 449/2004, as amended B.C. Reg. 88/2014, May 23, 2014. Accessed at [https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/449\\_2004](https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/449_2004)

<sup>2</sup> British Columbia Ministry of Environment, *Recycling Regulation Guide*, April 2012.

### 3 APPOINTMENT OF STEWARDSHIP AGENCY

The Program is developed, managed and operated by Product Care, a not-for-profit industry association that manages extended producer responsibility programs for lamps and lighting equipment and other products across Canada on behalf of its members. Product Care was established as a non-profit agency to enable its members (i.e., Producers of Program Products) to meet their obligations under provincial extended producer responsibility legislation. Product Care is incorporated under the *Canada Not-for-Profit Corporations Act*<sup>3</sup> and is governed by a board of directors representing its membership classes (i.e., paint products, lighting and alarms products, retail, other products). The elected board members are typically employees or representatives of Producers, retailers, or trade associations involved in the various programs operated by Product Care. All board members are affiliated with companies or associations that have business interests in BC. A current list of Product Care's Board of Directors is available on Product Care's website (<https://www.productcare.org/about/board-of-directors/>).

Product Care governance is subject to its articles, bylaws and policies. Membership classes are subject to change with member approval. The board maintains various standing committees. Any changes to Product Care's legal status will be referenced in the Program's annual report, if applicable.

In addition, Product Care has established a National Lamp Industry Advisory Committee comprised of industry representatives from the lamp and lighting equipment sectors (manufacturers, retailers, trade associations). The committee's purpose is to provide advice, information and recommendations to Product Care 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. Accordingly, each Producer that joins the Program appoints Product Care as its agent to carry out the duties of the Producer as set forth in Part 2 of the Regulation. In turn, the Program Plan confirms the duties that Product Care will perform on behalf of each Producer that is a member in good standing of the Program.

The Program is an approved EPR program for lamps and lighting equipment in the Province. Product Care's Program members represent the vast majority of the market in British Columbia for designated products. Program membership is open to all Producers, including manufacturers, brand owners, distributors, first importers and retailers of obligated products in BC. Product Care is continuously engaged in identifying and recruiting Producers of Program Products in the BC market, and where necessary, notifying the MoECCS for follow up and enforcement. A current list of program members that have appointed Product Care as their agent, as well as other member-related information, is available on Product Care's website ([www.productcare.org](http://www.productcare.org)). Product Care can provide confirmation of a company's membership upon request. In addition to information on its website, Product Care engages

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<sup>3</sup> A copy of the Act is available at <http://laws.justice.gc.ca/eng/acts/c-7.75/>. Product Care's Letter of Continuance, bylaws and audited financial statements are available on Product Care's website [www.productcare.org](http://www.productcare.org).

with members on an ongoing basis through various channels, such as member meetings, member notifications and member support staff.

Product Care also manages and operates extended producer responsibility programs for lighting products in other provinces. Information on other provincial stewardship programs is available at [www.productcare.org](http://www.productcare.org).

## **4 PRODUCTS COVERED UNDER THE EXTENDED PRODUCER RESPONSIBILITY PLAN**

Section 2.1 (e) of Schedule 3 of the Regulation (“Electronic and Electrical Products”) designates “all electronic or electrical lighting equipment, parts and bulbs”. The Program covers all products described below for use in residential and commercial applications (“Program Products”). A description of product categories and a regularly updated list of Program Products and products excluded from the Program (“Non-Program Products”) can be found on Product Care’s website ([www.productcare.org](http://www.productcare.org)).

### **Lamps**

Product Care defines “lamp” to mean a light source or replaceable component, designed to produce light from electricity. Lamps are often 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**

Product Care defines “lighting equipment” to include fixtures and ballasts used with lamps. 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 or providing light. Typically, the purpose of the light fixture is to house and 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.

Products containing lamps with a primary purpose that is not to illuminate or assist in the illumination of space for conventional purposes are outside the scope of the Program, with the exception of horticultural fixtures. This includes, but is not limited to:

- Lighting included as a component of products covered by other schedules of the Regulation and under the management of other extended producer responsibility programs in BC. Examples include large appliances, small appliances, medical equipment and electronic products.

- All fixtures integrated into a mode of transportation containing lights with a primary purpose of navigation, navigational safety, signaling or displaying information, or illuminating space within the mode of transportation.

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.

## 5 STAKEHOLDER CONSULTATIONS

Pursuant to section 5(1)(b) of the Regulation and the Recycling Regulation Guide<sup>4</sup>, Product Care conducts comprehensive public consultations with opportunity for stakeholder input prior to submitting amendments to this Program Plan. A summary of the consultation process is documented in Appendix A to this Program plan. Appendix B lists the participants who attended the consultations by sector. Appendix C summarizes the feedback received during the consultations and Product Care's responses.

Product Care interacts with various stakeholders, including but not limited to collection sites, on an ongoing basis, which allows stakeholders to provide feedback on the Program's operations, including but not limited to:

- Visiting collection sites
- Engagement at conferences
- Ongoing engagement/consultation with program members as detailed above.

## 6 COLLECTION SYSTEM AND CONSUMER ACCESSIBILITY

### 6.1 Collection System

In accordance with section 5(1)(c)(iii) of the Regulation, the Program employs a comprehensive network of permanent year-round collection sites across BC 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 businesses and organizations that provide collection services, including:

- Retailers
- Private (non-retail) businesses (e.g., bottle depots)
- Municipalities (recycling centres, facilities)
- Regional Districts (transfer stations, landfills, etc.)
- Metal recycling companies
- Not-for-Profit organizations
- Indigenous communities

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<sup>4</sup> British Columbia Ministry of Environment, *Recycling Regulation Guide*, April 2012

There is no charge to drop off Program Products at any collection site, whether or not the products are currently marketed in BC. The collection site finder on Product Care’s website assists consumers in locating their nearest collection site.

The Program also collaborates with other stewardship programs to provide collection services.

To provide optimal access for different types of generators and to address capacity of some locations, collection sites are distinguished based on the type of products accepted, quantity limits and whether they are advertised or not. “Residential” collection sites are defined as locations that have limits on the size and/or quantity of units that can be recycled. “Commercial” collection sites provide collections for large sized and large quantities of Program Product. In addition, contracted collection sites may be advertised or non-advertised. Advertised sites are collection sites that accept Program Products from the public and are promoted by the Program. Unadvertised sites are collection sites, which accept Program Products from their clientele (not from the public) and have requested not to be promoted as a public collection site. Table 1 provides a summary of the different types of collection sites in the network, product types accepted and quantity limits, if any.

**Table 1: Collection Site Types, Product Type Accepted and Quantity Limits**

Collection Site Type	Accepted Product Type	Quantity Limits <sup>5</sup>
Residential lamps – advertised	Lamps	16 lamps per drop-off
Commercial lamps – unadvertised	Lamps from specific sources only	No limit
Residential & Commercial lamps – advertised	Lamps	Up to 1 pallet
Residential fixtures - advertised	Fixtures	No limit
Residential fixtures – unadvertised	Fixtures from specific sources only	No limit
Residential and Commercial fixtures and non-PCB ballasts – advertised	Fixtures and non-PCB ballasts	No limit

### Fixture and Non-PCB Ballast Collections

By agreement between Product Care and Canadian Electrical Stewardship Association (CESA), Residential fixtures, such as table lamps and floor lamps, are accepted at all CESA small appliance collection sites resulting in greater consumer convenience, and efficiencies for both the programs and the supply chains.

<sup>5</sup> Sites may exercise discretion in accepting more and are encouraged to do so if they have the capacity.



Commercial fixtures are mainly comprised of metal and are already managed and recycled through the well-established metal recycling industry. Product Care contracts directly with many private metal recycling facilities to ensure acceptance of Commercial fixtures and non-PCB ballasts without charge to the generator.

### **PCB Ballast Collection System**

Polychlorinated biphenyls (PCBs) are 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. The Program's website provides Generator Guidelines<sup>6</sup> 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. To ensure proper handling and regulatory compliance, PCB ballasts are not accepted at collection sites, but the Program offers free pick-up service in accordance with transportation requirements set out under applicable regulation.

### **Large Volume Generator Direct Pick-Up Services**

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 commercial quantities of lamps at their own sites or at offsite locations.

### **Collection Events**

Product Care augments its permanent collection system with a number of one-day collection events, often held in collaboration with local or regional governments. Program Products are typically collected alongside other stewarded and non-stewarded products. The number of events held each year varies depending on the number of requests received from local government and any service gaps identified. The Program partners with the event organizers to supply collection containers and takes responsibility for the transportation and recycling of the collected Program Products.

## **6.2 Consumer Accessibility**

In accordance with section 5(1)(c)(iii) of the Regulation, Product Care commits to provide reasonable access to collection services in the Province. To provide some perspective on what constitutes reasonable access, SABC retained the services of RCBC to conduct a review of local government service standards for solid waste and recycling services and other public services in the province. The study concluded that "there is no standard when providing access to public services. Local agencies are most likely to rely on key considerations when determining access and types of facilities. Key considerations can include environmental, social, cultural, technical, economic and/or legal requirements. Often the

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<sup>6</sup> Generator Guidelines are available on the website: <https://www.productcare.org/app/uploads/2015/01/PCB-Ballast-Pick-Up-Guidelines-October-12-12.pdf>

delivery of public services is balanced with other financial and social requirements by local governments.”

Accordingly, Product Care employs the following criteria to assist in defining what constitutes “reasonable” access to collection facilities, as required by the Regulation. Reasonable access is defined as a 30-minute drive to a collection site in urban areas, and a 45-minute drive to a collection site in non-urban areas with a population greater than 4,000.<sup>7</sup> Urban areas consist of Census Metropolitan Areas (CMA) and ~~Census Agglomerations (CA)~~ as defined by Statistics Canada. All other areas of the province are considered non-urban. This represents the minimum accessibility threshold for the Program. The Program also provides permanent collection services in many communities with populations less than 4,000, as well as collection services to other rural, remote areas and indigenous communities of the province.

The Program has also established collection sites in many indigenous communities. In addition, many indigenous communities have access to collection sites in nearby municipalities. Product Care also works collaboratively with the Indigenous Zero Waste Technical Advisory Group (IZWTAG) to expand the level of service to indigenous communities.

### 6.3 Approach to Evaluating Collections

Due to the variation of products collected by the Program, differences in how they are collected and processed and other regulatory considerations, products collected may be measured by units or weight. For safety, efficiency and accuracy, quantities are usually measured at the processing locations. The factors influencing the unit of measure applied and the method of determining the amount of product collected is detailed below.

#### Lamps

Lamps collected are reported out under the following categories corresponding to the different sorting and processing streams of our lamp processors:

1. Fluorescent Tubes: All sizes and shapes
2. Compact fluorescent lamps (CFLs)
3. High intensity discharge (HID) lamps and Others: Sodium lamps, HPS lamps (High Pressure Sodium), Metal Halide lamps, Mercury Vapour lamps, Induction tubes, UVC lamps and tubes, and Neon tubes
4. Light Emitting Diode (LED) Lamps: Solid-state lamps used for specialty purposes and conventional lighting applications
5. Incandescent and Halogen Lamps: All incandescent/halogen filament lamps of all shapes, sizes and wattages, and all minibulbs

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<sup>7</sup> The Stewardship Agencies of BC conducted consultations with local governments in 2021 on the appropriate criteria to use to determine accessibility. There was no consensus on whether to apply a time-based or distanced-based measure.

The lighting industry continues to experience rapid technological change, such as the transition from incandescent to fluorescent to LED lamp technology, the shift from fixtures with replaceable bulbs/lamps to fixtures with integrated lighting circuitry, and the introduction of leasing lighting systems instead of purchasing lighting equipment. The transition from CFL to LED technology has occurred faster than expected, impacted by energy efficiency incentives and other regulatory requirements.

In addition, different categories of Program Products have different lifespans. The lifespan of lighting technology (e.g., CFLs) generally improves over time, but will vary depending on manufacturing standards and the frequency of use by the consumer. Accordingly, forecasting the sale and collection of lamps with any precision is extremely difficult. Consequently, the Program does not set collection targets for lamps.

### **Fixtures**

Residential fixtures are collected along with materials collected through the Canadian Electrical Stewardship Association (CESA) EPR program are tracked by tonnage and not by units. The weight of fixtures attributable to the Program each year is estimated by sampling the commingled materials received by the processors.

Commercial fixtures collected through metal recycling facilities represent a very small percentage of the total volume of scrap metal generated in the Province. Commercial fixtures collected through metal recycling facilities are also generally commingled with other metal-based products at the point of collection, making it impractical for collectors and the Program to track the actual number of units or weight of fixtures collected. Using sampling to estimate the amount of fixtures collected through metal recycling facilities has been both challenging and imprecise. Extrapolating a small data set from select sampling events to estimate the amount of fixtures collected relative to the entire volume of metal recycled in the Province through private metal recyclers introduces a great amount of variability and large margins of error. At most, sampling events help to confirm that materials are or are not finding their way to metal recyclers to be recycled.

Based on the high percentage of metal in Commercial fixtures and their associated monetary value, and historical sampling evidence, Product Care has a very high level of confidence that these products are being recycled through the metal recycling industry. This is supported by the absence of fixtures in any waste composition audits of municipal solid waste facilities carried out by SABC members in recent years. Consequently, the Program considers there to be no longer a tangible benefit to conducting a sampling program for Commercial fixtures at metal recycling facilities.

### **Capture Rate & Recovery Rate**

Capture rate and recovery rate are two additional measures utilized by other EPR programs. However, the applicability and utilization of these performance metrics is heavily dependent on a number of considerations such as product durability, the ability to accurately determine product lifespan, the nature of the product (i.e., consumable vs durable), product consistency across a product category, and other factors.

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.

From a cursory view, capture rate would seem to be a more appropriate measure for lamps than recovery rate given the relatively long lifespan of these products. However, aforementioned factors all contribute to making it extremely difficult, and arguably impossible, to accurately ascertain the quantity of lamps and fixtures available to collect, thereby weakening the validity of capture rate as a meaningful performance measure for lamp recycling. Similarly, the long lifespan of products, rapid changes in technology and the external forces impacting the sale of lamps, make recovery rate an unreliable performance metric. Accordingly, the Program does not view capture rate or recovery rate as applicable or reliable metrics assessing program performance. Rather, the Program utilizes other, more appropriate, performance metrics, such as consumer awareness and consumer accessibility.

#### **6.4 Waste Composition Audits**

To confirm that Program Product is being successfully diverted from landfill, the Program participates in waste composition audits undertaken by local governments in collaboration with other stewardship organizations. Not all local governments conduct waste audits and for those that do, the audits are not always conducted on an annual basis. Given the scope, logistics and costs associated with conducting waste composition audits, it is necessary that audits are conducted in conjunction with local governments and other partners.

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 partners and stakeholders involved.

The consultant conducting the study typically includes in their report the date and location of the audits, as well as the number of units of Program Products identified. Audit results are considered to be informative for the region in which the study is conducted only.

## **7 CONSUMER AWARENESS**

Product Care invests resources in understanding consumer behaviour regarding lamp and lighting equipment products. As a significant percentage of Program Products are in service for long periods of time, education regarding these products must be handled differently than “fast moving consumer goods” (FMCG), which have a short life span and quick turnaround between point of purchase and point of return. Understanding the different value propositions between short- and long-term goods and consumer use is critical to the Program’s awareness strategy. As such, Product Care has conducted research to better understand the consumption and disposal habits of residential and commercial users with regard to lamps and lighting equipment.

Product Care allocates resources toward educating those responsible for purchasing and replacing Program Products that these products can, and should, be recycled.

Product Care invests significant resources to maintain a comprehensive public education strategy and to reach, if not exceed, the Program's consumer awareness target for residential users. Similarly, the Program directs considerable resources toward educating and engaging commercial users. The messaging will be highly targeted, highly relevant, and highly engaging. Tactics are informed by three core pillars:

- Identify the three Ps – people (who are using the product), place (how do we find these people) and promotion (how will we reach them)
- Identify critical timing – at which points in the product's lifecycle are people most likely to engage with the product (when is our message relevant)
- Go a mile deep, not an inch wide – instead of blanket awareness campaigns, focus on relevant consumers at times that matter.

In accordance with section 5(1)(c)(iv) of the Regulation, messaging focuses on raising awareness:

- That lamp and lighting equipment products can and should be recycled at designated collection facilities
- The location and availability of collection services
- How to manage products in a safe manner to ensure they are handled properly during use and are recycled at end-of-life

The program utilizes the 'key touchpoints' approach to consumer education, where four key moments throughout the product's lifecycle are identified and consumers are engaged and educated.

- **Point of Sale (POS)** – Product Care works directly with brand owners and retailers to ensure residential and commercial users are aware of their responsibilities. Product Care offers a suite of free resources for point-of-sale education, such as posters, brochures, educational literature for retailer websites, and social media content for use on retailers' channels.
- **Active lifecycle** – Product Care educates consumers through the duration of the product lifecycle through proactive and reactive means, including traditional media, digital media, search advertising, and partnerships. Product Care educates year-round through digital platforms and with specific targeted campaigns, such as Christmas lighting campaign.
- **End of life** – Consumer inquiries seeking information about the Program, such as accepted products and collection site locations, are serviced by Product Care staff or through other services, such as RCBC's hotline, website and Recyclepedia app. Product Care also operates a user-friendly website ([www.productcare.org](http://www.productcare.org)) that is regularly reviewed and updated, which hosts information about the Program, including accepted and not accepted products, a recycling location locator tool, and how to manage Program Products at end-of-life.
- **Point of Return (POR)** – Product Care employs a robust point of return education program, with free materials offered to collection partners, such as indoor and outdoor signage, educational brochures containing program information, and training for collection site staff to guide consumers at POR.

To effectively reach/ educate British Columbians about recycling lamps and lighting products, consumer research has been analyzed to identify key segments: homeowners/renters, young urban residents and older rural residents. Messaging and advertising channels are targeted to each segment for optimal engagement.

Additionally, Product Care pursues third-party partnerships. Product Care intends to continue to strengthen and grow those relationships. The Program has collaborated with brand owners, industry associations, as well as had significant success with earned news media coverage around recycling of Program Products. Product Care continues to build its highly engaged and reputable network of third-party relationships who validate and amplify the message about the importance of recycling lamps and lighting equipment.

Product Care has limited ability to influence the design of products and associated packaging. Product Care has engaged industry members through its National Advisory Committee on the possibility of incorporating information about product recycling on Program Products and/or associated packaging. Industry members noted the following challenges of including province specific messaging:

- Products are manufactured for sale throughout North America for sale into jurisdictions where EPR programs or other recycling options do not exist.
- Many products do not have a surface that can accommodate messaging about recycling.

## **8 MANAGEMENT OF PROGRAM COSTS**

### **8.1 Program Revenue and Environmental Handling Fees**

The Program is funded by environmental handling fees (“EHFs”) paid to Product Care by its members based on the quantity of the designated products sold or supplied in British Columbia. The EHF is not a tax or a refundable deposit. The Program does not prescribe how the cost of the EHF is managed through the supply chain. The recovery of the EHF paid to the Program may be presented at the time of retail sale as a separate charge or be integrated into the product price. Program revenues fund program operations, including but not limited to:

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

EHF rates are set by Product Care and are subject to change as needed to ensure there are sufficient funds to operate the Program and maintain the necessary reserve in accordance with Product Care’s policies. Current EHFs for Program Products are listed on the Product Care’s website, [www.productcare.org](http://www.productcare.org).

## **8.2 Reserve Fund**

As part of its risk management system, the Program maintains an appropriate reserve fund in accordance with Product Care'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. Product Care monitors the Program's financial performance on an ongoing basis to ensure it remains financially sustainable and that an adequate reserve fund is maintained.

## **8.3 Audited Financial Statements**

In accordance with Section 8(2)(f)(ii) of the Regulation, Product Care's audited financial statements, as well as the Program's revenues and expenses, will be posted on the Product Care website as part of appendices to the Program's annual report.

## **8.4 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 MoECCS to pursue compliance and potential enforcement proceedings.

## **8.5 Paying the Cost of Collecting and Managing Products**

In accordance with section 5(1)(c)(i) of the Regulation, the Program Plan must "adequately provide for [...] the producer collecting and paying the costs of collecting and managing products within the product category covered by the plan[...]."

All collection sites operate under an agreement between the collection site operator and the Program. Collection sites are compensated based on the amount of Program Product collected. The Program provides all contracted collection sites with collection containers and other collection supplies at the Program's expense.

In response to the MoECCS guidance document "Producers paying the cost of managing obligated materials and dispute resolution", Product Care retained the services of BDO Canada LLP ("BDO"), one of the largest full-service advisory and accounting firms in the world, to conduct a cost study and develop a cost model to determine the adequacy of collection site compensation for lamps as well as the other extended producer responsibility programs operated by Product Care. BDO conducted market research, collecting information from collection sites and identifying various costs factors related to the collection of products for each of the Product Care programs in British Columbia, to determine if the compensation paid to collection sites adequately covers their costs associated with collecting and handling Program Products.

In accordance with the MoECCS guidance document, Product Care held public consultations on the cost model and dispute resolution provisions. The report was distributed along with the consultation notice

and made available on Product Care's website. Product Care held two webinar sessions to solicit feedback on the report's findings. Product Care submitted a report to MoECCS on December 23, 2019, including the full BDO report and a summary of stakeholder feedback along with Product Care's responses. The model will continue to be used to verify that Product Care continues to pay the cost of collecting material, taking into consideration cost input data received from collection sites.

For Residential fixtures collected through CESA's collection network, the Program compensates for services based on the compensation system employed by CESA. CESA undertook a similar study and consultation process in relation to compensation for the collection of fixtures collected and managed through CESA's collection network.

## 9 MANAGEMENT OF ENVIRONMENTAL IMPACTS

The objective of the Program is to minimize the improper disposal of Program Products by providing an effective collection program and ensuring that the collected materials are either reused or recycled or disposed of in an environmentally responsible manner. The Program strives to manage collected Program Products using the highest option on the pollution prevention hierarchy as set out under section 5(1)(c)(v) of the Regulation. The application of the pollution prevention hierarchy and the management of each product varies depending on a number of considerations, such as product composition, availability of appropriate recycling technologies, qualified service providers, sufficient economies of scale, operational costs related to transportation and management of the materials, the existence of end markets for commodities and global market conditions. This section details the management options and considerations for Program Products.

### **Reduce and Redesign**

Lamp technologies are evolving constantly and the lighting 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. Advances in fluorescent technology include reductions in product size and material resources by weight, reductions in mercury content, and increasing their lifespan. Replacement LED technology does not contain mercury, has significantly longer lifespans and is more energy efficient.

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.

The Regulation requires reporting on the efforts taken by or on behalf of the Producers to reduce environmental impacts throughout a product's life cycle and to increase reusability or recyclability at end of life. Extended Producer Responsibility programs are designed to address the disposition of products at end-of-life. 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.

### **Reuse and Repair**

For safety reasons, the Program does not provide a reuse option for fixtures. The Program is designed for end-of-life lighting equipment (lighting equipment that no longer works or cannot be safely reused). Established, alternative channels are available for consumers to make their used lighting fixtures available for reuse. Expired lamps are not reusable.

### **Recycle and Recover**

#### ***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 and end fate.

Mercury and PCBs (see subsection regarding PCB-containing ballasts below) are the two constituents that pose the most potential environmental risk. The mercury-phosphor powder from fluorescent tubes and CFLs typically undergoes a process whereby the mercury is separated from the phosphor powder. Liquid mercury from HID lamps is retorted to remove impurities. The resultant mercury from these processes is then chemically treated to form a stable mercury compound. The mercury compound is subsequently put into long term storage or disposed in an environmentally responsible manner. The phosphor powder is reused where there is a market and demand, and if not, disposed of in an environmentally responsible manner.

Other materials, including metal, glass and plastic, are separated and managed as commodities for use in a variety of applications.

PCA has developed Lamp Processing Standards that reflect industry best practices 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. 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 are audited to ensure they are operating in accordance with the Lamp Processing Standards.

#### ***Fixtures***

Residential fixtures contain materials similar to small appliances (e.g., metal, glass, plastics, etc.). As a result, the Program partners with CESA to collect Residential fixtures and non-PCB ballasts together with small appliances and power tools at contracted collection sites that also serve as CESA collection sites.

They are shipped to processors, broken down into their respective components and managed as commodities. Processors are required to meet applicable electronics recycling standards.

Commercial fixtures and non-PCB ballasts are managed outside the Program through the existing market-driven metal recycling industry. 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 industry that maximizes the associated revenue potential. Second, most of the Program's collection sites do not have the capacity to manage Commercial fixtures.

### **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.

The Program employs waste composition audits of municipal waste facilities to confirm that lamps and lighting equipment are not ending up in landfills (see section 6.4 above).

## **10 DISPUTE RESOLUTION**

In accordance with the Ministry's Guidance on Producers Paying the Cost of Managing the *Obligated Products and Dispute Resolution dated April 24, 2018*, Product Care consulted with stakeholders on its approach to resolving disputes to ensure adequate provision for a dispute resolution procedure for disputes that arise between a producer and person providing services related to the collection and management of the product during operation of the Program. The consultations were conducted in conjunction with the consultations on the Program's compensation framework detailed in section 8.5 above.

The Program contracts with all suppliers and service providers by way of commercial agreements. The procedure follows normal commercial dispute resolution practices, including:

- Discussion between the service provider and Product Care manager
- If necessary, escalation of discussion to Product Care senior staff
- If necessary, escalation of discussion to Product Care board
- If necessary, undertaking legal proceedings, including the option of mediation or binding arbitration, with the consent of the parties

The first two procedures can be conducted with the consent of both parties, via conference call and/or video conferencing, including actual recordings of the meetings to be made available to both parties.

## 11 PERFORMANCE MEASUREMENT SUMMARY AND REPORTING COMMITMENTS

Given the complexities and nuances in managing the range of products covered in the Program, program performance should be assessed based on a suite of performance measures and not any one specific measure. Accordingly, this Program Plan sets out a number of performance metrics, which collectively, illustrate the Program’s success. First, accessibility targets ensure that British Columbians have reasonable and free access to the Program’s collection service. Second, consumer awareness tactics and targets evidence consumer awareness of the ability to recycle lamps and fixtures and provide consumers with easily accessible information on where and how to recycle their Program Products when they reach end-of-life, and consumer awareness targets evidence the success of these tactics in building consumer awareness of the ability to recycle Program Products. Third, reporting amounts of Program Product collected and the approaches employed to manage them in accordance with the pollution prevention hierarchy.

Table 2 summarizes the targets and commitments set out in the Program Plan. Certain non-financial elements of Program performance are subject to audit by an independent third-party auditor in accordance with Guidance on Third Party Assurance for Non-Financial Information provided by the MoECCS. Table 2 also indicates which performance metrics are subject to audit.

Unless otherwise indicated, in accordance with section 6 of the Regulation, all performance requirements, commitments and targets apply up to the five-year anniversary (i.e., April 23, 2027) of the Program’s original approval date (i.e., April 23, 2012). Following that period, the Program will continue to report against all commitments and targets until they have been reassessed.

**Table 2: Performance Measures and Reporting Commitments**

Performance Metric	Reporting Commitment/Target	Subject to Audit
<b>Section 6: Collection System and Consumer Accessibility</b>		
<b>6.1 Collection System</b>		
Collection sites	Report annually on the number and location (city and regional district) of contracted collection sites.	Y
	Report annually on the collection sites opened and closed during the reporting year, including name and location.	Y
	Report annually on communities greater than 4,000 that did not have a permanent collection site in each product category.	N
Number of collection events	Report annually on the number and location (city and regional district) of collection events.	N

Performance Metric	Reporting Commitment/Target	Subject to Audit
<b>6.2 Consumer Accessibility</b>		
Accessibility	Provide permanent collection service to a minimum of 95% of the population that meets the criteria set out in section 6.4 of the program plan for Residential lamps, Residential fixtures, Commercial lamps and Commercial fixtures.	N
	Inquire with regional districts on an annual basis to identify collections service concerns and work together to address those concerns.	N
	Provide initial response within 3 business days to inquiries for collection of designated products from rural/remote communities where there is no reasonable access.	N
	Meet with the Indigenous Zero Waste Technical Advisory Group (IZWTAG) at a frequency determined by IZWTAG, but no less than one meeting per year, to support collections in Indigenous communities that are ready to engage.	N
	Report annually on the number of indigenous communities that received collection services.	N
<b>6.3 Approach to Evaluating Collections</b>		
Units sold	Report annually on total units sold by product category.	N
Lamps collected	Report annually the total estimated units of lamps collected by product category. <sup>8</sup>	Y
	Report annually the total estimated units collected by regional district. <sup>9,10</sup>	N

<sup>8</sup> In accordance with lamp categories detailed above in section 6.3 of the Program Plan.

<sup>9</sup> Regional district counts are estimated based on average lamps per collection container collected from each regional district.

<sup>10</sup> 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, Product Care does not consider this metric to be a reliable performance measure. Caution should be exercised when interpreting this metric.

Performance Metric	Reporting Commitment/Target	Subject to Audit
Residential fixtures collected	Report annually the total estimated weight of fixtures collected through CESA's collection system.	Y
	Report annually the total estimated weight of fixtures collected (kilograms per capita) through CESA's collection system by regional district.	N
PCB-Containing Ballasts collected	Report annually the total estimated weight of PCB-containing ballasts collected.	Y
	Report annually the total estimated weight of PCB-containing ballasts collected by regional district.	N
<b>6.4 Waste Composition Audits</b>		
Waste Composition Audits	Participate in all waste composition audits committed to by SABC.	N
	Report annually on the number and location of waste composition audits conducted.	N
	Report annually on kilograms per capita of Program Products identified in each waste composition audit.	N
	Report annually on the total batteries found per waste audit conducted in units and kilograms per capita.	N
<b>Section 7: Consumer Awareness</b>		
Consumer awareness survey	Conduct consumer awareness survey every two (2) years and report the survey question used, a summary of the survey methodology employed, and awareness level achieved.	N
Consumer Awareness	Maintain a minimum 70% awareness level of the ability to recycle lamps and lighting equipment amongst BC consumers.	N
Consumer education	Report annually on educational strategies and materials undertaken by the Program broken down by consumer group (residential and commercial), including targeted activities aimed at specific consumer segments.	N

Performance Metric	Reporting Commitment/Target	Subject to Audit
Commercial sector engagement	Undertake ongoing engagement with the commercial sector through sector-based strategies, working with industry associations and report out annually on efforts undertaken.	N
Program website visits	Report annually on user visits to the Program's website.	N
RCBC Recyclepedia website visits and hotline calls	Report annually on user visits to RCBC's Recyclepedia website and the number of hotline calls received.	N
Labelling	Pursue opportunities to engage with Producer members in discussion regarding labelling on products and associated packaging to promote recycling of Program Products. Report annually on efforts made.	N
<b>Section 8: Management of Program Costs</b>		
Financial statements	Report annually the complete audited financial statements of Product Care Association of Canada, and the annual statement of revenues and expense for the Program.	Y
<b>Section 9: Management of Environmental Impacts</b>		
Design for environment	Report annually on significant developments, provided by the program's membership, that reduce the environmental impact and improve the recyclability of Program Products.	N
End fate management	Report annually on reported material flow and final disposition of materials derived from lamps, Residential fixtures and PCB ballasts according to the Pollution Prevention Hierarchy.	Y

## **APPENDIX A: SUMMARY OF STAKEHOLDER CONSULTATION PROCESS**

[This appendix to be completed following completion of public consultations on the program plan.]

## **APPENDIX B: LIST OF CONSULTATION PARTICIPANTS**

[This appendix to be completed following completion of public consultations on the program plan.]



## **APPENDIX C: STAKEHOLDER COMMENTS AND RESPONSES**

[This appendix to be completed following completion of public consultations on the program plan.]