2021 Prince Edward Island Lamps Recycling Program Annual Report

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Submitted to: Prince Edward Island Department of Environment, Energy and Climate Action

Submitted by: Product Care Association of Canada



productcare.org

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1. About Product Care Association

Product Care Association of Canada ("Product Care") is a federally incorporated, not-for-profit product stewardship association formed in response to stewardship regulations and is governed by a multi-sector industry board of directors. Product Care manages paint, household hazardous waste, smoke and carbon monoxide alarms and other lamp industry stewardship programs in various provinces in Canada.

Product Care has an approved lamp product stewardship plan with the Prince Edward Island Department of Department of Department of Environment, Energy and Climate Action under the *Materials Recycling Regulations* ("Regulation") of the *Environmental Protection Act*. The PEI Lamp Recycling Program ("Program") began in April 2015 and was renewed for another 5-year period on November 18, 2019.

Product Care's members are the "brand owners" (manufacturers, distributors, first sellers and retailers) obligated by the Regulation. The Program is open to any brand owner to join.

Product Care operates lamp product stewardship programs in three other provinces: British Columbia (BC), Manitoba (MB) and Quebec (the program in Quebec is branded as RecycFluo).

Product Care also operates the Paint Recycling Stewardship Program in Prince Edward Island.

1.1. Report Period

This report covers the reporting period from January 1, 2021, to December 31, 2021.

1.2. Program Summary

The Program offers collection sites, free of charge, throughout the province where consumers and businesses can bring unwanted/burned out lamps. Most collection sites are operated by Island Waste Management Corporation (IWMC) under contract to Product Care. In addition to the IWMC collection sites, a retailer, Home Hardware, in Charlottetown, is also a collection site under the Program. Residents and businesses can return any type of whole lamps to any of the six IWMC collection sites. The Home Hardware store only accepts lamps from the residential sector.

Product Care supplies collection sites with standard recyclable collection boxes and metal drums for collection of broken lamps. A hauler contracted by the Program collects the filled boxes from the collection sites and delivers collection supplies to the collection sites. The full collection containers are shipped to a processor for recycling. Additional elements of the Program managed by Product Care include revenue management, communications, and administration.

The Program is funded by Environmental Handling Fees (EHF) remitted to Product Care, by its' members for each regulated lamp product sold into or in the province (see EHF rates in <u>Appendix 1</u>). There were no changes to the fee rates in 2021.

1.3. Accepted Products

The Program is designed to collect and manage end-of-life intact (whole) lamps. The Program includes the following common categories of lamps, whether they are marketed for residential, industrial, or commercial purposes. This list is subject to change by Product Care.

- Fluorescent Tubes Fluorescent tubes come in different lengths (4 feet, 8 feet, etc.), diameters (T5, T8 and T12) and light output. Most tubes are straight, but some may be curved or shaped.
- Compact Fluorescent Lamps (CFLs) Fluorescent bulbs that are typically similar in size and are intended to replace an incandescent (traditional) light bulb, including pin-type sockets, covered CFLs and various output wattages.
- High Intensity Discharge Lamps (HID), non-mercury and mercury containing lamps Includes mercury vapor, metal halide, high- or low-pressure sodium and UV lamps.
- Incandescent and Halogen lamps Filament lamps of all shapes, sizes, and wattages.
- Light Emitting Diode (LED) lamps Solid-state lamps used for specialty purposes and conventional lighting applications.
- Miniature Bulb Package Miniature bulbs are small or very small bulbs. They can be LED, incandescent, halogen or neon and are typically designed and sold as replacement bulbs.

Lamp products can be sold as replacement lamps or integrated into a product intended to illuminate an area (such as a fixture, a flashlight, etc.). When sold integrated into such a product, the lamp portion of the product must be designed to be able to be removed from that product by the end user to be recycled. Lamps that are sold integrated into products that meet this requirement are included in the Program.

The Program is designed to collect and manage whole lamps and not crushed lamps. A limited amount of incidental breakage of lamps is accepted by the Program, provided the broken lamps are packaged in accordance with the requirements of the Program.

The Program includes lamp products manufactured by existing brand owners as well as orphan products (those that are no longer in production or which the manufacturer is no longer producing) if their function was the same as products accepted in the Program.

1.4. Non-Program Material

Non-program materials are products other than the lamp products listed above. Minimization of non-program material is achieved through a comprehensive program of public education, signage, and collection facility staff training. Non-program material includes, but is not limited to, the following:

- All types of fixtures
- Ballasts
- Any other lighting products (Products containing lights with a primary purpose that is not to illuminate or assist in the illumination of space (e.g., germicidal lamps)).
- Lamps integrated into products that are not intended for removal/replacement by end users. Due to technological modifications, this exclusion may be subject to review.

2. Brand Owner Sales Information

Program members reported total sale of 434,479 units of program products in PEI from January 1 to December 31, 2021, as shown below in Table 1.

| Table 1. Total Onits Sold by Category | | | | | | | |
|---------------------------------------|----------------------|--|-----|------------------|--------------------------|--|--|
| | Fluorescent tubes | Compact Fluorescent Lights (CFL) | LED | HID and Other | Incandescent/ Halogen | | |

15,440

Table 1: Total Units Sold by Category

49,768

3. Collection

Units

The following section provides the total amount of lamps collected in PEI, as well as the location of collection sites.

1,909

102,914

3.1. Total Amount of Lamps Collected

Table 2 shows the total number of lamp units by category collected by the Program in 2021.

234,586

| | Fluorescent tubes | Compact Fluorescent Lights (CFL) | LED | HID and Other | Incandescent/ Halogen | Mini bulbs package | Total |
|-------|----------------------|--|-------|------------------|--------------------------|-----------------------|---------|
| Units | 65,929 | 22,239 | 4,996 | 2,087 | 31,038 | 0 | 126,289 |

3.2. Collection Sites

As of December 31, 2021, seven collection sites participated in the Program: six collection sites operated and managed by IWMC and one retail location. Table 3 lists all collection sites. <u>Appendix 2</u> illustrates the Program's recycling location finder. - <u>https://www.productcare.org/recycling-locator/.</u>

Table 3: 2021 PEI Lamp Collection Sites

| Collection Sites | Address | City |
|------------------|------------------------------|-----------------|
| Greenisle | 8 Superior Crescent | Charlottetown |
| Brockton | 2202 Dock Road Route # 150 | Brockton |
| New London | 10142 Route #6 | New London |
| Murray River | 378 Cape Bear Road Route #18 | Murray River |
| Dingwells Mills | 100 Selkirk Road Route #309 | Dingwells Mills |

Mini bulbs

package

29,862

Total

434,479

| City | Address | Collection Sites |
|-------------------|-------------------|------------------|
| Wellington Center | 29786 Route #2 | EPWMF |
| Charlottetown | 115 St Peters Rd. | Home Hardware |

4. Processing

4.1. Lamps Processed

All lamps collected through the Program were sent to Quebec for processing. In 2021, a total 126,289 whole lamps were recycled. The Program's processor is required to conform to Product Care's Processor Standards.

4.2. Disposal Method Descriptions

The following sections describe each method the Program used to reuse, recycle, or otherwise treat or dispose of lamp products.

Reuse

The Program is designed to manage end-of-life lamp products that no longer work and cannot be reused. Consequently, no lamps collected through the Program were reused.

Recycling

Collected Program Products were broken down into their component parts in a controlled environment. The resulting glass, ceramic and metal components were recovered as commodities. The metal components were sent to smelters. Glass and ceramics were sent to a glass recycler to be used for sand blasting.

Secure Landfill

During the separation of the components, the mercury and the phosphor powder were collected in drums. The contents of the drums are sent to a waste management company in Quebec where they are encapsulated into a concrete-like material and securely landfilled. Although the mercury can be removed from the phosphor powder by retort, the market for recycled mercury has been greatly reduced in the last few years due to regulatory restrictions. These restrictions include a US ban on mercury exports, which has limited the availability of recycling options for mercury.

4.3. **Product Impact Reduction, Reusability and Recyclability**

Lighting product producers continue working to reduce the environmental impact of lighting products through innovative product design and technology. New design and technology have addressed environmental concerns by reducing material use, increasing lamp life, increasing energy efficiency, and increasing recycling rates.

Over the past couple of years, the primary focus has been on increasing the use of energy efficient and long-life LED lamp technology. The advancement of LED lighting technology is having a significant impact on the lighting market as a whole. Manufacturers are focusing most of their efforts in this area and no longer spending research

energy on expanding any of the traditional product lines of CFL, linear fluorescent, HID, incandescent or halogen. Acceptance of LED technologies has greatly increased as prices decrease. In fact, the acceptance and adaptation to LED technology has been much more rapid and widespread than most industry experts would have forecasted some years ago.

Due to the significantly longer lifespan of LED lights, sales have decreased for other traditional lighting technologies, such as halogen, incandescent, fluorescent, and HID lights. A review of lamp sales trends from the past three years reveals declining sales in all lamp categories, except for LED lamp categories. According to members of Product Care's Light Recycling Advisory Committee, it can be expected that declining sales trends will continue for mercury containing lamps. In particular, sales of CFLs have experienced a decline at a faster rate than anticipated. The Advisory Committee foresees that CFLs will likely be eliminated from the market within the next two to three years. Furthermore, it is anticipated that fluorescent tubes will follow CFLs and likely be eliminated from the market, the Advisory Committee expects that they will be replaced by LED lamp technologies. LEDs contain no mercury and have an even longer life of about 15,000-20,000 hours. Most CFLs, in comparison, only have an average life of 10,000 hours. It is expected that we will also likely see more and more integration of LEDs into fixtures.

The shift to more energy efficient and longer lasting lighting technology is clear. Most LED lamps are more than 50% more efficient than CFL lamps, reducing electricity use and reducing pollution from power generation.¹ These changes all help to decrease the impact on the environment; longer life lamps help to reduce waste, new generation lamps contain less hazardous materials, and the reduction in the size of lamps reduces the amount of materials required to manufacture them and associated waste.

Lighting as a service is a growing business model which can offer consumers assistance with design, installation, operation, and maintenance. The responsibility of the lighting systems durability, reuse, and recycling at end-of-life remains with the companies providing this service in the lighting industry, leaving only the monetary responsibilities for lighting used (operation and maintenance fees) with the consumer. This strategy applies more circular economy principles providing a more sustainable way to use lighting and fixtures.

5. Communication and Public Education

In 2021, in partnership with IWMC, Product Care implemented several different methods to raise consumer awareness of the Program. The following section provides details regarding communication and public education activities in 2021.

5.1. Website

The Product Care website includes the following content about the Program:

- "Find a Recycling Location" tool (a searchable map displaying collection sites and drop-off events See <u>Appendix 2</u>
- Collection site hours of operations
- Accepted and not accepted products
- Consumer videos showing the product management approach for lights

¹ Personal Communication with representative of a major manufacturer.

- Program member support section with news and updates
- Other information (e.g., a description of the Program, annual reports)

An estimated 372,774 users accessed ProductCare.org during the 2021 calendar year. The Prince Edward Island section (including sub-sections for accepted products and fee information) received 1,686 total page views. In addition, there were a total of 2,424 page views (39% increase over last year) to the "Find a Recycling Location" tool from consumers in Prince Edward Island.

5.2. Program Hotline

PCA and IWMC continued to operate a toll-free "hotline" for consumers to obtain information about the Program.

5.3. Partnerships

Product Care continued to contract with IWMC to promote the Program in the province throughout the year by implementing the following tactics:

1. Waste Watch News: Newsletters were distributed to Island residences (including seasonal dwellings and apartment units) in June and December through Canada Post. Residents and visitors could also pick up newsletters at the Access PEI locations and town halls. The newsletters were available in English and in French and contained a summarized sorting guide, including information on light products and recycling. A total of 71,000 newsletters were distributed per issue of the newsletter. The newsletter is available on the IWMC website under the resources section.

2. Interactive Sorting Guide: The IWMC website featured a *What Goes Where* tool providing customers an easy access to sorting and disposal guidelines. The instructions on light bulbs included a direct link to the Program's website for a complete list of accepted and excluded products. Hard copies of the sorting guide, which included light bulbs disposal advice and a direct link Product Care's website in the special disposal section, were made available in English, French, Mandarin, and Arabic. They were also produced in poster size for display at businesses, community organizations and multi-family dwellings. The sorting guide was also made available to new residents. See <u>Appendix 5</u>

3. Business Customers: Business Guides helped the industry, commercial and institutional sectors manage waste. IWMC included Sorting Guides when distributing the Business Participant Guide. Sorting information for the business sector was also available on IWMC's website.

4. Customer Service Inquiries: In addition to the Program hotline operated by Product Care, IWMC's Customer Service Centre operated a toll-free line where consumers could call in to request more information regarding the disposal of various recyclables, including lights. IWMC receives an average of 50,000 calls every year and answers queries through e-mail and IWMC's Facebook page.

5. **Corporate Annual Report:** Information on light bulbs recycling was highlighted in IWMC's Annual Report. The latest version of the annual report tabled in the Legislature is made available on the IWMC website.

6. Recycle Coach: IWMC also offers *What Goes Where* interactive sorting guide as a part of mobile app Recycle Coach. In addition to the interactive sorting guide, the app features quizzes and articles on proper sorting and disposal. See <u>Appendix 5</u>

7. Presentations & Tours: Normally IWMC presents to audiences of every age at early childhood learning centers, schools, community college, and community groups. These presentations and community outreach activities feature information on proper recycling and special disposal, including Product Care's Light Recycling stewardship program. Unfortunately, in-person presentations and activities were not possible due to the restrictions related to COVID-19.

5.4. Digital Advertising

All digital campaigns reached the entire province.

1. Google Search Advertising Campaign: A search advertising campaign served lights ads to provincial residents based on an extensive list of keyword searches relevant to the Program. These ads work according to user's queries on the Google Search engine and during 2021 they received 105 impressions and 22 clicks.

2. Facebook and Instagram Content Strategy: Content on Facebook and Instagram focused on light recycling, special waste, and the recycling community in general.

3. Targeted blog posts: Blog posts were targeted at relevant audience members including, but not limited to, homeowners, heads of households, and environmentally inclined individuals. Topics included specific information on lights recycling, "do it yourself" ("DIY") content, renovation tips, and sustainability best practices. All posts included a call-to-action to find a local collection site or interact with the brand on social media. Collectively, these posts received 62,790 views. See <u>Appendix 3.</u>

5.5. Point of Sale (PoS) and Point of Return (PoR) Materials

In 2021, Product Care distributed both PoS and PoR materials as requested by retailers and collection sites. General program awareness posters were made available for reorder through the online order form. See <u>Appendix 4</u>

6. Financial Information

The following is a summary of the Program's finances for the 2021 reporting year.

| 2021 Revenue and Expenses | (\$'000s) |
|---------------------------------|-----------|
| Total Revenue | 75 |
| Total Operating Expenses | 76 |
| Program Operation | 70 |
| Program Administration | 5 |
| Education, Public Awareness | 2 |
| Regulatory | (1) |
| Surplus/Deficit from Operations | (1) |
| Cumulative Surplus (Reserve) | 97 |

Appendix 1: PEI Lamps Environmental Handling Fee Rates

| Accepted Lamp Products | Rates ² |
|---|--------------------|
| Fluorescent Tubes measuring ≤ 2 feet | \$0.30 |
| Fluorescent Tubes measuring > 2 feet and ≤ 4 feet | \$0.50 |
| Fluorescent Tubes measuring > 4 feet | \$1.00 |
| Compact Fluorescent Lights (CFL)/Screw-in induction lamps | \$0.20 |
| Light Emitting Diodes (LED) | \$0.15 |
| High Intensity Discharge (HID), Special purpose and Other | \$1.10 |
| Incandescent / Halogen | \$0.05 |
| Miniature Bulb Package | \$0.10 |

² The Program has not had a change rate since 2015.

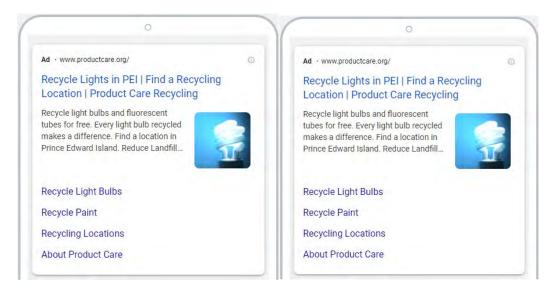
Appendix 2: Recycling Locator Tools

Below is a snapshot of the "Find a Recycling Location" tool located at productcare.org.

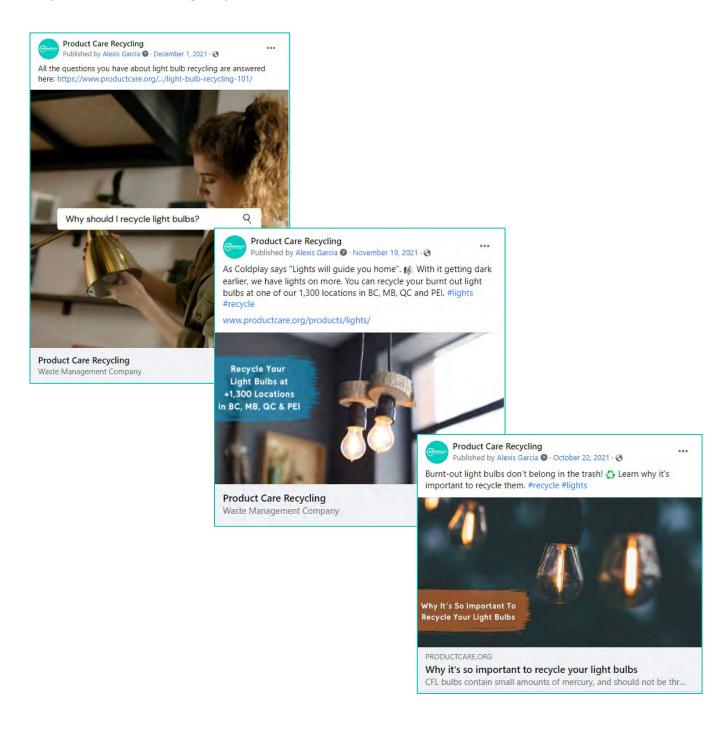


Appendix 3: Digital Advertising Activities

Google Search Ads



Sample Facebook and Instagram posts



Website blog posts



Appendix 4: PoS and PoR Materials

General program awareness posters

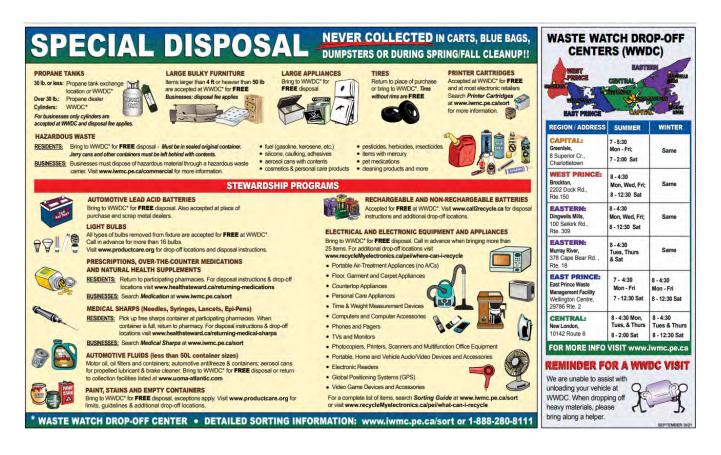


Lights rack card



Appendix 5: IWMC partnership materials

IMMC Sorting Guide



Recycle Coach app

