

British Columbia Extended Producer Responsibility Plan for Thermostats Revised 5 Year Program Plan: 2025-2030



For submission to:

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

Submitted by:

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1. Glossary

1.1 Definitions

In this Plan,

“contractor” – means a licensed heating, ventilation, and air conditioning technician who is trained to properly install and remove HVAC equipment (including thermostats).

“distributor” – means a business that purchases only non-competing brands of thermostats directly from manufacturers, warehouses the products, and then distributes and sells them either to wholesalers (see definition below) or to HVAC contractors who install them into residences and businesses.

“HVACR” – means heating, ventilation, air conditioning, and refrigeration equipment.

“manufacturer” – means a business that designs and makes (manufactures) thermostats and sells them to wholesalers and distributors.

“mercury switches” – means mercury that is sealed in a glass bulb, vessel, or vial as part of the thermostat (see definition below).

“thermostat(s)” – means products that sense and control room temperature through communication with heating, ventilation, and air conditioning equipment from all sectors (residential and commercial), including electromechanical thermostats, which contain internal mercury switches, and electronic thermostats, which use sensors instead of switches to detect temperature levels.

“wholesaler” – means a business that purchases various competing brands of thermostats directly from manufacturers or distributors, warehouses the products, and then sells them to HVAC contractors who install them into residences and businesses.

2. Introduction

2.1 Overview

In British Columbia, the *BC Recycling Regulation (Reg. 449/2004)* under the *Environmental Management Act* sets out the requirements for extended producer responsibility (EPR) plans. Under Section 2(1) of the Regulation, it outlines that a producer must have an approved plan and comply with the approved plan with respect to a product in order to sell, offer for sale, distribute, or use the product in a commercial enterprise in British Columbia.

In accordance with the BC Recycling Regulation the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) (<http://www.hrai.ca/>), with the support of the Canadian Institute of Plumbing and Heating (CIPH), is submitting this EPR Plan on behalf of manufacturers responsible for selling thermostats in British Columbia.

The goal of this Plan is to continue to deliver a high-quality program that satisfies the obligations of the thermostat manufacturers under the British Columbia Recycling Regulation, as per Schedule 3; *Electronic and Electrical Product Category*, subsection 2(1)(i), and which is also a part of a harmonized national program. This version of the Plan covers a five-year period from July 1, 2025, to June 30, 2030, and as such sets five-year targets for accessibility and collection. The original program plan of July 1, 2010, to June 30, 2015, was approved on April 18, 2010. A second program plan was submitted for July 1, 2015, to June 30, 2020, and was not reviewed by the Ministry and a program plan for July 1, 2020, to June 30, 2025 was not submitted. As per the Recycling Regulation guidelines, the collection program for thermostats will be ongoing, this Plan will be reviewed after five years of operations, and any necessary amendments will be made at that time. Between five-year plan revisions, the Thermostat Recovery Program (TRP) will remain committed to achieving the targets set out in this Plan and demonstrating continual improvement.

2.2 Program Participants

HRAI has taken the lead in developing this Plan in full agreement with and on behalf of the five main manufacturers and distributors responsible for selling thermostats in British Columbia. [Appendix A](#) lists the thermostat manufacturers that have registered and signed onto this Plan. HRAI contacted the manufacturers listed in [Appendix A](#) to notify them about this Plan.

In signing onto this Plan, each thermostat manufacturer participant was asked to sign the TRP Participant Agreement which outlines their EPR obligations under provincial regulations in provinces such as BC. As well, the Agreement outlines HRAI's responsibilities to the stewards as the agency acting on their behalf by operating the program. A copy of the agreement fully outlining the duties that will be performed on behalf of each producer that has signed onto the Plan, as well as the producer's obligations under the provincial regulations in the provinces such

as BC, will be provided upon request from a director as stated in the Regulation under Section 2 (4) (b), as well as under Section 2 (3) (a).

2.3 Appointment of the Agency

As the agency appointed by the manufacturers listed in [Appendix A](#) to fulfill their legal obligation to develop and deliver a collection and recycling program for thermostats in British Columbia, HRAI provides overall program management and delivers the program. HRAI is a not-for-profit national trade association (not a corporation) of manufacturers, wholesalers and contractors in the Canadian heating, ventilation, air conditioning and refrigeration (HVACR) industries.

HRAI has not made any changes to the association's structure since the previous plan submitted in 2020. However, a current list of HRAI's board of directors who are accountable to the thermostat producer members can be found in [Appendix B](#). HRAI has also set up a TRP Advisory Committee and the members can be found in [Appendix C](#).

2.4 Program Products

This Plan covers all thermostat types, which are defined as “products that sense and control room temperature through communication with heating, ventilation, and air conditioning equipment from all sectors (residential and commercial), including:

- Electromechanical thermostats, which contain internal mercury switches (mercury in a sealed glass bulb) or snap switches to control the flow of electrical current; and
- Electronic thermostats, which use sensors instead of switches to detect temperature levels and electronically control the flow of electrical current. Currently, there are four types of electronic thermostats: non-programmable, programmable, Wi-Fi, and Smart.

Electronic thermostats are available for sale via distributors to the entire population of BC to control their heating and cooling systems. However, electromechanical thermostats (containing mercury) are no longer being manufactured or sold in any markets. While some mercury-containing thermostats have been in use for more than 50 years, they are no longer manufactured or sold.

Thermostats are not actively marketed by most manufacturers to the public because most TRP thermostat manufacturers sell through the wholesaler channel. One TRP participant manufacturer recently reported that they only sell to contractors, wholesalers, and distributors and do not sell to retail. Another thermostat manufacturer recently indicated that 90% of their thermostat sales are through the wholesaler channel, which then sells to contractors.

Therefore, it is estimated that a high percentage of thermostats sold in British Columbia are sold and installed via the contractor/wholesaler channel and not directly to consumers. The marketing of these products is mainly targeted toward contractors and wholesalers who purchase and install them. Typical marketing methods used by thermostat manufacturers include their company websites, industry trade publications, and industry trade shows. However, thermostats are also sold through some big-box retail stores and online.

The approximate collective BC market share the thermostat manufacturers and distributors represent is difficult to calculate due to lack of information available. However, based on information received from Statistics Canada as per their annual wholesale trade survey, financial estimates (Table 20-10-0077-01) ([Annual wholesale trade survey, financial estimates](#)), the percentage of HVAC goods sold in BC was approximately 7.4% of the total amount of all goods sold in BC between 2019 and 2023. Based on our research, out of all HVAC goods sold into the BC market, it is estimated that approximately 90% of those sales are for air conditioners and furnaces, which require thermostats. Therefore, thermostat sales represented an average of approximately 6.7% of all HVAC goods sold into BC between 2019 and 2023. Total Operating Date codes collected by the Thermostat Recycling Corporation, Washington, DC, between 2014 and 2019, showed that the average lifespan of mercury-containing thermostats being recycled was 25 years. TRP is currently working with Aevitas to set up a system to record date codes to gather additional information about the average lifespan of thermostats collected.

Information provided by the thermostat manufacturers indicated that residential electronic thermostats typically have a lifespan of 12-15 years due to the colored display where the backlight starts fading and the thermostat needs to be replaced because of screen issues. However, some electronic thermostats sold over 15 years ago are still working. For commercial thermostats, screen display issues are also relevant, however, assuming no screen issues, commercial thermostats can last in operation for 20-30 years.

However, many electronic thermostats are being replaced more frequently - on average every 7–10 years — as a result of renovations and/or replacing furnaces and other HVAC equipment. Furthermore, there is a rapid change in thermostat technology such as the introduction of Smart Thermostats, which is causing thermostats to be replaced before their end of their useful life simply because consumers are wanting newer technology. People want this new technology in their home. The consumer understands the value of smart thermostats and will continue to have them installed in homes, offices, etc., because of the benefits they offer. Improved thermostat technology means energy efficiency, savings and much more. In just the last few years, the thermostat industry has rapidly changed. Programmable electronic thermostats replaced old mercury containing thermostats. Now, programmable thermostats are “old school.” The leading edge in thermostat technology is the new AI smart thermostats.

The long potential lifespan, coupled with the significant variability in the replacement rate presents a challenge in anticipating how many thermostats will become available for collection each year. This means that targets must be based around collection totals rather than a recovery rate. Details will be provided below in [Section 3.5](#).

3. Collection System and Accessibility

3.1 Collection System

The Plan will continue to use the following three channels to collect end-of-life thermostats in British Columbia, which provides free collection to all consumers, fully paid for by the thermostat producers:

1. HVAC contractors and wholesalers who will remove and collect thermostats during their operations, and act as drop-off locations for the general public.
2. Municipal/Regional District recycling depots and private recycling depots such as bottle depots are collection points where the public can drop-off their old thermostats.
3. Send-back kits for members of the public in remote regions of the province, or who have mobility challenges or are unable to get to a drop off location.

3.2 Contractor/Wholesaler Channel

This channel has historically been used as the primary collection channel for the Plan. It was estimated in the previous plan that 80% - 90% of thermostats sold in British Columbia are sold and installed via the contractor/wholesaler channel. A recent survey of the TRP participant manufactures resulted in the outcome. Therefore, we expect a similar proportion of thermostats collected and returned through this channel. This assumption has been proven through British Columbia's participant list, which demonstrates that 52% of participants are contractors, 24% are wholesalers with a total of 77% of TRP participants are from the contractor/wholesaler channel.

HRAI will commit to identify and engage HVAC contractors and wholesalers every 2 months via letters, emails, advertising in industry publications, and participation in industry meetings and trade shows. Contractors and wholesalers can register for the Thermostat Recovery Program by the program website (<https://www.hrai.ca/trp>). Upon registration, the following materials are sent to a new contractor/wholesaler participant:

- collection pails (United Nations approved);
- TRP Program Information and Instructions;
- TRP Accepted / Not Accepted List;
- information brochures to leave behind with their customers; and
- a return prepaid courier waybill.

Contractors then remove old thermostats from homes or businesses and replace them with new thermostats, and place old thermostats intact in the provided UN approved collection pails. Once the collection pail is full, the participant can use the prepaid return waybill provided to return the collection pail directly to the recycling facility. Participants will also be asked to send back any pail that is at least half-full or more during the collection sweeps, which take place in May and September of each year.

The program ensures and will continue to ensure that the courier and the collection service provider used by the program have the appropriate certificates of approval to transport, receive and process all types of thermostats, including those containing mercury. Further details

regarding the collection service provider have been outlined and reported in the most recent Annual Report. The program also conducts annual visits to the collection service provider to conduct site inspections. Once the thermostats reach the collection service provider facility, the thermostats are counted, documented, and dismantled, and the number of thermostats collected by each collection participant are reported back to HRAI on a monthly basis, along with a breakdown of the total quantities of mercury-containing and electronic thermostats, the total number of mercury vessels (each thermostat can have between 1-4), total number of loose mercury vessels, and the total weight of plastics, metals, glass, mercury and batteries from each collection participant. The end-of-life process for all thermostat components is described and fully outlined in the flowchart in [Section 4.1](#).

For “do-it-yourselfers” or smaller contractor businesses (who do not collect a sufficient volume of thermostats to warrant having their own pail), the program promotes contractors and wholesalers who participate in the program as year-round drop-off locations. The Thermostat Recovery Program website (www.hrai.ca/trp) has a search-by-postal code functionality that will allow the user to locate a participating public drop off location in their area.

3.3 Send-back Channel

This channel will continue to be used as a secondary collection channel for the Plan. Though collection results through this channel have been low in British Columbia over the past five years (accounting for less than 1% of overall collection results), three consumers in BC have utilized this collection channel, collecting a total of seven mercury-containing thermostats. This channel is important for offering fair and equitable access to thermostat recycling for northern, coastal, and remote residents of British Columbia. It is provided as an option for BC residents living in remote areas who do not have access to drop-off locations. The Thermostat Recovery Program website currently has an online request option where the public can request a small shipping container (suitable for up to approximately four thermostats) with a prepaid courier waybill to ship their old thermostat directly to the recycling facility. Please note that the send-back channel is open to anyone wanting to return one to four thermostats who is unable to make it to a drop-off location

3.4 Municipal/Regional District and Recycling Centres Collection

In order to ensure that the Program is also accessible to the residents of BC, collection is also available through Regional District/Municipal collection channels, as well as private Recycling Centre depot locations (such as bottle depots) whenever possible. This channel provides convenient access to the program for members of the public who are “do-it-yourselfers” and prefer not to use a contractor for a thermostat replacement, as well as being a method of disposal that many residents are already familiar with.

This channel is a valuable method of collection, accounting for approximately 23% of participants. Efforts have been made to engage with as many Municipalities and Regional Districts as possible to increase the availability of this channel. Whenever possible, the

Thermostat Recovery Program makes collection available at the same locations as other BC EPR programs, in order to improve the convenience to the public.

To illustrate the distribution of the program’s Regional District/Municipal collections across BC over the past five years, refer to the chart below:

Figure 1: % of Active Participants by Regional District:



3.5 Consumer and Industry Access

The TRP Program has 379 participants in BC, 199 of which are contractors and 93 are wholesalers totalling 77% of participants. Contractors provide on-site collection for thermostats that they remove from homes and businesses.

The program has also worked to engage wholesaler branches as drop-off points for thermostats, because all small contractor businesses will visit at least one wholesaler branch on a regular basis

to purchase supplies. 66% of wholesalers participating in the program are drop off locations. Some contractors with a public-facing office location will also opt to be drop-off locations and 33% of contractors participating in the program are drop off locations. Research conducted has also shown that many smaller contractor businesses prefer to visit drop-off locations rather than registering for the program, therefore, it will not be possible to register 100% of the potential businesses. However, these businesses will still have access to the program through the drop-off locations. This finding will be reflected in the registration targets outlined below. However, some independent contractors find it more convenient to register for the program and receive their own thermostat collection pail to use in the field. The program offers the flexibility to meet the needs of a variety of different businesses.

3.6 Collection Location Targets

The program has experienced steady collection totals and public awareness communication efforts continue.

Table 1: Collection points per Regional District:

Region	Number of Collection Points
<i>Alberni–Clayoquot Regional District</i>	2
<i>Capital Regional District</i>	42
<i>Cariboo Regional District</i>	4
<i>Columbia–Shuswap Regional District</i>	18
<i>Comox Valley Regional District</i>	10
<i>Cowichan Valley Regional District</i>	13
<i>Fraser Valley Regional District</i>	26
<i>Metro Vancouver Regional District</i>	123
<i>Northern Rockies Regional Municipality</i>	1
<i>Peace River Regional District</i>	10
<i>qathet (Powell River) Regional District</i>	4
<i>Bulkley–Nechako Regional District</i>	6
<i>Central Kootenay Regional District</i>	5
<i>Central Okanagan Regional District</i>	14
<i>East Kootenay Regional District</i>	7
<i>Fraser – Fort George Regional District</i>	12
<i>Kitimat-Stikine Regional District</i>	8
<i>Kootenay Boundary Regional District</i>	4
<i>Mount Waddington Regional District</i>	2
<i>Nanaimo Regional District</i>	14
<i>North Okanagan Regional District</i>	11

<i>Okanagan–Similkameen Regional District</i>	11
<i>North Coast (Queen Charlotte) Regional District</i>	1
<i>Squamish–Lillooet Regional District</i>	5
<i>Strathcona Regional District</i>	4
<i>Sunshine Coast Regional District</i>	4
<i>Thompson–Nicola Regional District</i>	18
Total	379

As demonstrated in the above table, TRP collection points are currently present in 27 of British Columbia’s regions. The region in which TRP does not yet have participants is the Central Coast Region.

HRAI will continue to contact contractors and wholesalers to encourage them to register for the program, as well as Regional District and Municipal locations with the intention of increasing the number of collection points across the province. TRP will focus on contacting contractors and wholesalers, as well as at Regional District/Municipal and recycling centre depot locations in the Central Coast Region with the intention of having at least one collection location in each regional district of the province. Based on a GIS Analysis conducted in 2023 by EDM Planning Services Ltd. (EDM), using drive time, the overall total provincial coverage was 94.8%. The full EDM report can be found in [Appendix D](#). See table below taken from EDM report.

Table 2: 2023 GIS Analysis

Provincial Analysis Findings

Table 2 is the 2024 Provincial Summary using the new proposed method:

	Population within Drive Time	Total Population	Percent
Rural Depot Coverage (45min, 60km)	1,006,053	1,199,561	83.9%
Urban Depot Coverage (CMA)(30min drive)	3,735,225	3,801,318	98.3%
Total Provincial Coverage	4,741,279	5,000,879	94.8%
Unserviced Rural	193,508	1,199,561	16.1%
Unserviced Urban	66,093	3,801,318	1.7%

Table 2: 2023 Accessibility Measure

Coverage in the rest of province and to those who are not close enough in proximity to a collection point is available through the send-back channel which increases the percentage served by the program to all areas throughout BC accessible via Purolator or Canada Post.

Although the Thermostat Recovery Program’s collection system as outlined is quite efficient and consistent, HRAI will commit to work with other EPR programs to increase consumer accessibility, especially in rural communities and will continue to do so on-going. HRAI will commit to report annually on these consumer accessibility initiatives.

In order to ensure that all avenues for engaging potential collection locations have been explored and that outreach attempts are cost-effective and reach the target audience (based on above channels) ongoing research will be conducted throughout the term of this Plan to support collection target locations, as follows:

- Analysis of potential collection locations (via registration membership lists, and chapter outreach);
- Analysis of registration/participation trends;
- Annual participant survey;
- Interviews with HRAI members;
- Outreach to HRAI Contractors
- Outreach to HRAI Wholesalers to register all their branches throughout the province; and
- Outreach to Regional Districts and Local Government

As demonstrated in the table below, the program has continued to grow steadily from Year 1 through 4, positioning the program well to meet targets in Year 5. At this point, the program has conducted extensive outreach to contractor associations (including HRAI, CIPH, Mechanical Service Contractors of Canada, TECA, etc.) as well as reaching out to wholesalers to register all of their BC branches. The research that was previously conducted indicates that many small contractor businesses prefer to visit drop-off locations rather than registering for the program themselves. Therefore, while the original assumption as to the number of contractors and wholesalers who could potentially participate was accurate, the program has likely reached a saturation point as to the number that would register for the program.

The original Plan aimed for 20% growth year over year, the targets presented in this revised Plan for 2025-2030 aim for more modest growth of 5% in 2025, 3% in 2026, and then reaching a plateau in 2027-2030, after which point recruitment efforts would be focused on ensuring that coverage remains consistent and any collection locations that opt out of the program (for example, businesses that close down) are replaced.

Table 3: Target Number of Collection Locations:

Program Year	Target Number of Collection Locations	% Increase
2025	387	5
2026	400	3
2027	400	0
2028	400	0

2029	400	0
2030	400	0

3.7 Consumer Awareness

The TRP is primarily focused on the HVACR and Plumbing industry, rather than the public and retailer specific awareness, since our research shows most thermostats are purchased and installed by industry contractors. However, approximately 14% of participants in the program are Regional District/Municipal channels; and 9% are private recycling centres/bottle depots; therefore, there is a need for some public awareness of the program.

In October 2024, a joint 2024 Consumer Awareness and Usage Tracking Study was conducted by Leger on behalf of the members of the Stewardship Agencies of British Columbia (SABC). Among those surveyed, awareness of the program was 52% - compared to 48% in the 2020 and 49% in the 2022 study. As well, 41% of those surveyed knew where to take thermostats to be recycled and safely disposed of. Only 4% of participants reported ever having had thermostats that needed disposal and 47% of participants took their thermostats to a participating location for recycling and safe disposal. Of those that had used the program, both convenience and trust were rated well, at 66% and 88% respectively. While the overall awareness level is lower than that reported for the larger, consumer-facing programs, it is an appropriate level for an industry-focused program like the Thermostat Recovery Program. The Program will continue to engage in targeted and cost-effective consumer outreach initiatives and will participate in future consumer awareness studies with SABC to monitor awareness levels.

For the Thermostat Recovery Program, the messaging that is used for consumer awareness outreach focuses on why old thermostats need to be recycled (in particular because of the risks associated with the mercury found in many older thermostats), who funds the program (and the fact that it is completely free to participate), disposal options (contractor channel, drop-off locations, send-back), and program contact information for more information. This information is communicated through the following resources and channels:

- Program website presents a comprehensive overview of the program, with regular updates and an up-to-date list of disposal locations (i.e., participating contractors and wholesalers, drop-off locations and send-back options).
- Program Information Documents contains pertinent information for new registrants, next steps, and collection guidelines. Upon registering, participants receive a Welcome Letter via email, including the Program Information Document, confirming receipt of their registration form and the order of their program collection kit. This letter helps new registrants manage expectations, address program inquiries, and develop a commitment to the program. Information will be added to the Welcome Letter about how to store thermostats until

collection containers arrive. Instructions on how to properly seal the UN-rated pails are included on the lids from the manufacturer.

- Printed brochures — consumer friendly promotional brochures are made available at contractors, and Regional District/Municipal collection locations. These are sent upon registration and available upon request for distribution to participants.
- Posters — newly registered participants designated as drop-off locations are automatically sent a drop-off poster upon registration, along with their collection kits. These colourful, eye-catching promotional posters are available to all participants for on-site display.
- Advertising via the Recycling Council of British Columbia’s Recyclepedia and hotline — information about what is collected through the program and locations of drop-off locations are made available through these RCBC services.
- Regional District/Municipal waste reduction/recycling calendars— Thermostat Recovery Program ads will be purchased in Regional District and Municipal waste reduction or community recycling calendars as appropriate to increase consumer awareness of the program.
- Collection Container Labels: the TRP 5.0-gallon collection pails are labeled with the program branding, with warnings to restrict collections to intact thermostats only. This serves as a visual reminder for participants and helps ensure compliance with program goals.

On-going, HRAI is seeking and open to collaborative advertising, promotion opportunities and partnered collection events to boost consumer awareness for the TRP with other stewardship programs with similar products. HRAI will continue to engage other SABC members to find such opportunities on an on-going basis. In 2024, TRP participated in six temporary collection events: one in Kitimat-Stikine Regional District, three in Fraser Valley Regional District and two in Fraser-Fort George Regional District. HRAI is committed to participate annually in at least six collections events throughout the province.

3.8 Industry Awareness

Because the TRP is industry focused, rather than consumer-facing, awareness efforts will primarily target contractors/wholesalers rather than consumers. However, contractors have the primary relationship with the consumer and are encouraged to engage them regarding proper thermostat recycling. To supplement the consumer facing initiatives described above, industry-facing materials are also available. The messaging for these materials is similar to the consumer-facing information, in that it focuses on why old thermostats need to be recycled (in particular because of the risks associated with the mercury found in many older thermostats) and who funds the program, but include more of an emphasis on the fact that it is completely free to participate and describing the ways that contractors or wholesalers can join the program (registering as a participant or a drop-off location, or the option for smaller businesses to visit drop-off locations). Materials also describe what participants receive when they register and emphasize how easy it is to participate. This information is communicated through the following resources and channels:

- Program website —presents a comprehensive overview of the program, with regular updates and an up-to-date list of disposal locations, as well as simple way to register for the program
- Printed brochures — to be distributed by contractors/wholesalers at locations that sell new thermostats
- Printed posters — to be displayed at participating drop-off locations to advertise to customers that the program is available at that location
- Industry communications via newsletters and industry publications to inform the contractors/wholesalers about the program and how to register and participate (e.g. HRAI newsletter, *HPAC magazine*, *Business Mechanical magazine*, and *plumbing & HVAC magazine*)
- Wholesalers, distributors and manufacturers will promote the program to contractors and the public via their websites, newsletters, signage, etc.
- Wholesalers and distributors provide on-site promotion and education for the small, one-person contractors via signage and printed information (posters and brochures), as well as allowing the contractors to use their collection containers if they want to (instead of acquiring their own collection pail)

The following metrics will be used as benchmarks to measure the effectiveness of the communications tools listed above:

- Program website — the program website will be updated monthly with collection results and new program participants and drop-off locations.
- Printed brochures — a minimum of 500 brochures will be printed and distributed on an annual basis.
- Printed posters — posters will be distributed to all new drop-off locations to be displayed on site.
- Industry-facing advertising — a minimum of 10 ads per year will target industry (for example, through industry associations, trade publications, e-blasts, etc.)

3.9 Collection Targets (in lieu of Recovery Rate)

In developing the targets for the original plan, there was limited information available specific to the British Columbia context, therefore the targets were based on research conducted in Ontario and adjusted on a per capita basis for BC. The original per capita targets were also adjusted upward, to ensure the program set ambitious collection targets in its first years. Based on the actual collection results in ON, the targets were appropriate for that context, however, the actual collection results in BC have proven that these targets were unrealistic. The research determined that simply adjusting the ON targets to account for the population of BC did not result in accurate targets, for the following reasons:

- The original modeling was overly aggressive and used an inflated ratio for the per capita calculation, and assumed that the BC targets would be approximately 60% of the ON targets
- An analysis of the CAC and furnace sales (which were the foundation for the original ON targets) showed that sales into BC are only approximately 16% of those in ON

- An analysis of the available thermostat sales data (which was not available in the development of the original ON or BC plans) showed that sales into the BC market are approximately 12% of those into ON
- Anecdotal evidence from surveys suggests that many older homes would have had electric heat that did not use mercury-containing thermostats

Determining the exact number of electronic thermostats sold annually in BC is challenging due to the lack of publicly available sales data. Furthermore, it is also not possible to predict when mercury-containing thermostats will be complete given the lack of publicly available sales data. Statistics are not available on how many mercury-containing thermostats were sold in BC, and mercury-containing thermostats have not been sold in Canada for at least the past 15+ years. The number of mercury-containing thermostats available for collection will decline over the coming years, while the number of electronic thermostats collected is likely to increase. It is estimated that by 2030 most mercury thermostats will likely be out of use due to HVAC system upgrades, energy efficiency programs, and regulatory pressure. Beyond 2030, a small number may still exist in older buildings with low retrofit rates.

The lifespan of a mercury-containing thermostats is approximately 25 years, while the lifespan of an electronic thermostat is 12-15 years. However, in reality, the majority of thermostats are replaced more frequently than that, on average every 7 to 10 years, as a result of renovations and/or replacing furnaces and other HVACR equipment. This long potential lifespan, coupled with the significant variability in the replacement rate, especially with new smart thermostats coming onto the market, presents a challenge in anticipating how many thermostats will become available for collection each year. As a result of this, targets are based on historical collection totals rather than a recovery rate.

Table 4: Actual thermostats collection results in the last 5 years.

Year	Actual Number of Mercury-Containing Thermostats Collected	% of Mercury-Containing Thermostats Collected of Total # of Thermostats	Actual Number of Electronic Thermostats Collected	% of Electronic Thermostats Collected of Total # of Thermostats
2020	2456	51 %	2382	49 %
2021	3927	56 %	3051	44 %
2022	2854	48 %	3061	52 %
2023	3432	47 %	3823	53 %
2024	3018	46 %	3455	54 %
Average	3,137	49.6 %	3154	50.4 %

On average for the last 5 years (2020 – 2024) electronic thermostats have accounted for 50.4% of total number of thermostats collected and mercury-containing have accounted for 49.6% of the total number of thermostats collected. In the past three years, there has been a slight increase in the electronic thermostats collected compared to mercury-containing thermostats.

As mentioned above, the original 5-year collection targets proved to be unrealistic and the actual collection results support the adjustment of collection targets for this Program Plan. The approach for setting realistic collection targets for this Plan was to take the previous 5-year actual collection average and increase it by 5%/yr for electronic thermostats and decrease it by 5%/yr for mercury-containing thermostats.

It is important to recognize that because mercury-containing thermostats are no longer being manufactured and sold into Canada, the number of these thermostats available for collection will decline as the program matures, and the number of electronic thermostats will likely increase.

As with the collection location targets, the collection targets for both electronic and mercury-containing thermostats will also be re-aligned to the calendar year rather than the program year in order to facilitate reporting. The targets for 2025-2030 are outlined in the table below.

Table 5: Target number thermostats to be collected

Year	Target Number of Mercury-Containing Thermostats Collected	% decrease in collection from previous year	Target Number of Electronic Thermostats Collected	% increase in collection from previous year
2025	2987 (3137 previous 5-year actual collection average)	5%	3311 (3154 previous 5-year actual collection average)	5%
2026	2831	5%	3477	5%
2027	2689	5%	3651	5%
2028	2555	5%	3833	5%
2029	2427	5%	4025	5%
2030	2308	5%	4235	5%

Monitoring

The quantities collected and diverted because of the Plan will be monitored via monthly reporting from the recycler to HRAI and will include the number of thermostats collected broken out by mercury-containing and electronic thermostats from specific contractors, wholesalers, and municipal/regional district depots and recycling depot channels as well as the send back channel.

Unmanaged Product

TRP is confident thermostats are being properly managed and not ending up in BC's waste streams headed to landfills. As members of Stewardship Agencies of British Columbia (SABC), TRP has been partnering with other members to conduct waste composition studies to essentially quantify how much of our product is ending up in the waste stream and we will continue to do so going forward. These waste studies have been ongoing annually since 2014, with multiple studies completed in the same year in different regional districts. The results will be included in TRP annual reports.

Remedial Actions

If the collection targets are not met, the Plan will focus on scaling-up both consumer and industry awareness initiatives, as well as increasing communication to all collection locations. This communication will emphasize the importance of properly recycling mercury-containing thermostats, as well as education about collection of non-mercury-containing thermostats.

4. Management of Environmental Impacts

4.1 Pollution Prevention Hierarchy

Reduce/Redesign

The main environmental concern with thermostats is the mercury contained in many of the older models. While mercury-containing thermostats have been in use for more than 50 years, they are no longer produced by any of the major manufacturers. For example, Johnson Controls stopped selling mercury-containing thermostats in Canada in 2004, Resideo (Honeywell) stopped in 2006, and Emerson/White Rodgers stopped in the Spring 2007. As well, the government of Canada enforced new regulations on November 8, 2015, banning the sale, manufacture and import of all mercury-containing products (excluding lamps and dental amalgam) into Canada. In line with Canadian regulations, the U.S. (which is where the major manufacturers produce thermostats) has banned the manufacturing, sale and export of all mercury-containing products in many states. These bans will guarantee that mercury-containing thermostats are an obsolete product.

Reuse

HRAI does not encourage the reuse of old thermostats collected through this program for several reasons. First, many of the old thermostats contain mercury and this program will ensure that the mercury is properly managed once in our collection channels preventing any environmental concerns. Second, for the non-mercury-containing thermostats, the risk in reusing them is that they will not meet the technical/safety specifications or allow newer HVAC systems to reach their capabilities of higher energy efficiency levels that are now required. For this reason, responsibly

recycling older thermostats and replacing them with new models continues to be the best practice to reduce environmental impacts. Our goal is to collect end-of-life thermostats and ensure that the components are properly recovered from the environment and managed appropriately, not see them in continued use. The mercury recovered from thermostats and other manufactured products are no longer processed for reuse in new product manufacturing due to environmental concerns.

Recycle & Safety Risk Management

All thermostat collection pails are returned for processing directly to Aevitas Inc. located in Ayr, Ontario. Once at the recycling facility, the thermostats are counted, documented, and dismantled, and the number of thermostats collected is tracked and reported to HRAI on a monthly basis, along with a breakdown of the total quantities of mercury-containing and electronic thermostats, the total number of mercury vessels (each thermostat can have between 1-4 vessels), the total number of batteries, and the total weight of mercury, plastics and metals from each participant.

The following steps will continue to be taken to manage the materials recovered through the program:

- Thermostats collected/stored and shipped from participant locations using pre-paid Purolator return waybills
- Thermostats are stored and shipped in UN approved collection containers with fastening lids to ensure safe transport to recycler.
- Thermostats are shipped to Aevitas recycling facility located in Ayr, ON.
- Aevitas is the only approved mercury retort in Canada and follows all environmental laws and regulations.
- The program conducts annual visits to the recycling facility to conduct site inspections.
- Once at Aevitas, the thermostats are counted, documented and dismantled, and the components are separated for appropriate recycling and management.
- The glass mercury vessels are consolidated with others from Canada at Aevitas and shipped to Bethlehem Apparatus located in PA, USA, at least once a year, where the glass and mercury are separated:
 - the glass is crushed and sent to landfill due to quality impurities and low market demand
 - the mercury undergoes a stabilizing treatment process, converting elemental mercury to mercury sulphide, rendering it safe for disposal in specially engineered landfills. Once the mercury has been processed by Bethlehem, it is shipped back to Canada to Stablex located in Quebec for disposal.
- The recycling facilities follow strict occupational health and safety, as well as government mercury waste regulations.
- The plastic components recovered from the thermostat housings are low quality plastics and are not amenable to recycling and are deemed e-waste and sent to landfill.
- The thermostat collection pails are made of high-density polyethylene (HDPE). This material is an easily recyclable valuable product, which can be pelletized and reused as feedstock for

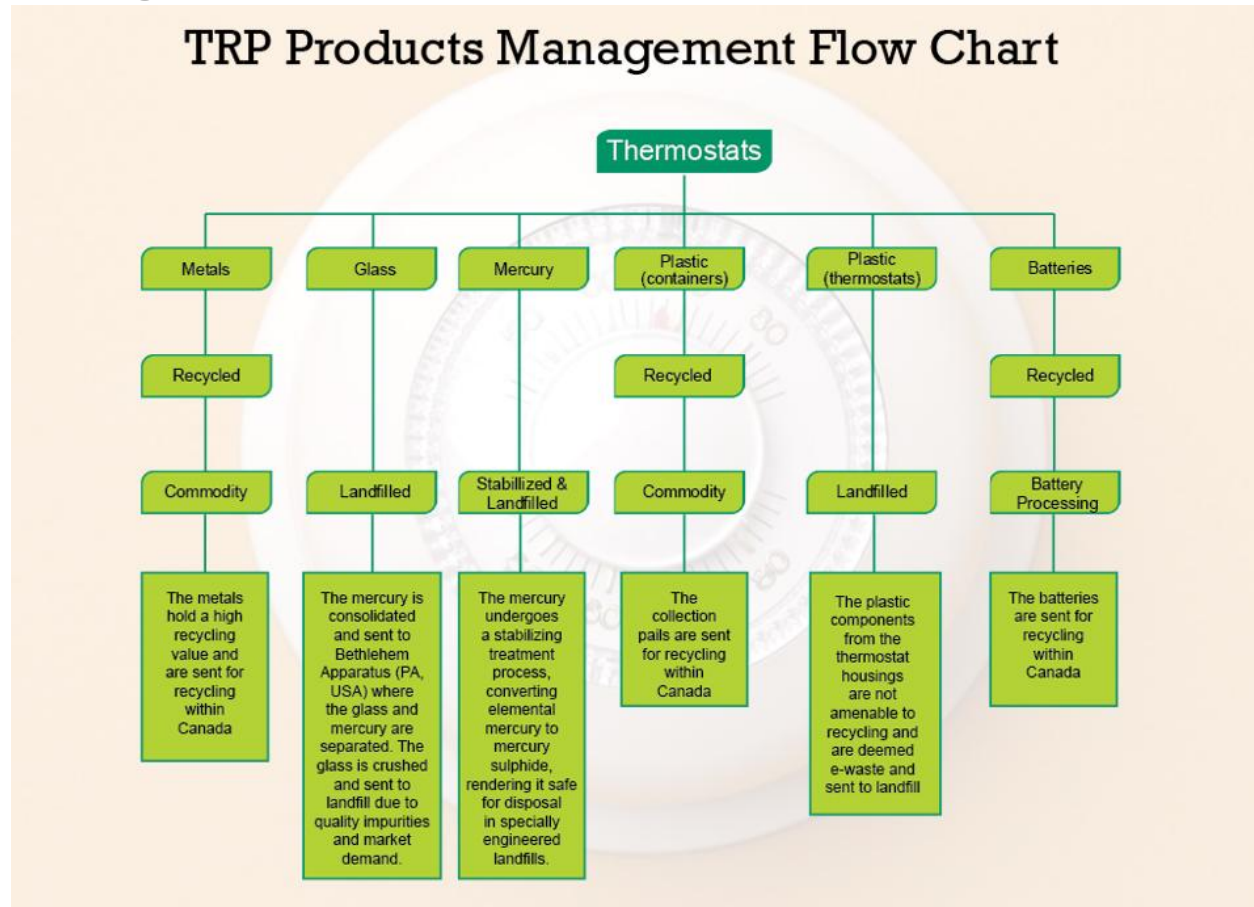
plastics manufacturing. The collection pails at end of life are sent to RPM Environmental Inc. located in Burlington, ON for recycling.

- The metals collected are a mix of iron, nickel and aluminum, all holding high reuse/recycling value and are sent for recycling and reuse within Canada.
- In 2024, 22% of materials recovered through the program (i.e. metals) were recycled and managed in accordance with the principles of pollution prevention with a high degree of certainty. (Further details are outlined in the most recent Annual Report). The mercury and glass can not be recycled and there is currently no recycling market for the low-quality plastic housings.
- The batteries are sent to Port Colborne, ON for recycling/battery processing.

Figure 2: Thermostat Recovery Program collection process in Canada (includes BC) is described in the following flow chart:



Figure 3: Thermostat Recovery Program products management is described in the following flow chart:



Both the Collection Infrastructure and the adherence to the Pollution Prevention Hierarchy, as well as the Program Performance (as described in the following section) are subject to an Independent Reasonable Assurance audit by Grewal Guyatt LLP, Chartered Professional Accounts, (changed from Price Waterhouse Cooper in 2024), in accordance with the Canadian Standard on Assurance Engagements (CSAE) 3000. Grewal Guyatt found that the Thermostat Recovery Program presents fairly with respect to all audit criteria. The details of these criteria and the details of the audit can be found in the current Annual Report, located online on the “[Program Results](#)” page of the Thermostat Recovery Program website.

TRP will continue to participate in ongoing discussions with Aevitas, as well as other stewardship organizations, in hopes to derive a joint solution to divert e-plastics from landfill. Aevitas is currently investigating potential solutions with plastic recyclers.

TRP contacted Call 2 Recycle in 2024 to inquire if batteries received in the TRP program could be processed through their EPR program. Call 2 Recycle wanted to know if the batteries received by Aevitas were loose or intact. Aevitas confirmed that approximately 95% of the batteries received were intact in the thermostats and approximately 5% were loose. Call 2 Recycle confirmed that

given 95% of the batteries processed by Aevitas are intact in the thermostats when they were received, they would fall under TRP. Furthermore, given the small amount of loose batteries (e.g. 32 batteries in 2024), the loose batteries would continue to be managed by TRP.

The total breakdown of all materials recovered from the province of British Columbia collected to date includes:

- ✓ 16,966 electronic thermostats
- ✓ 48,562 mercury-containing thermostats
- ✓ 171 kg of elemental mercury (calculated based on 2.5 grams per vessel)
- ✓ 68 kg of glass (calculated at 0.001 kg of glass per mercury-containing vessel)
- ✓ 1071 kg of metals
- ✓ 2,493 kg of plastics
- ✓ 4,018 batteries

5. Program Administration

5.1 Management of Program Costs

The Plan will continue to be managed and 100% fully funded by the manufacturers and distributors that have previously sold manufactured mercury-containing thermostats; and/or have imported thermostats into British Columbia. The TRP does not charge, collect, or manage any eco fees; as well the manufacturers and distributors do not collect eco fees on their products at the point of sale to fund the program, since thermostats collected can be anywhere from 5 – 30 years old, and mercury-containing thermostats are obsolete and are no longer being manufactured. The manufacturers continue to pay for the full costs for the recovery and recycling of thermostats, along with all other program expenses incurred including collection, transportation, recycling, and marketing.

The manufacturers and distributors are presented with an itemized TRP budget for the year at the beginning of each year. Representatives from the TRP major manufacturer and distributor companies are then asked by HRAI for approval of the budget. Once the budget is approved, they pay the full yearly costs for the collection and recycling of thermostats as per the approved plan, along with all other yearly program expenses incurred according to the yearly budget presented. The individual yearly funding shares used to pay for these costs are calculated based on the individual return share percentage of the total number of thermostats recovered per year. Therefore, individual manufacturer and distributor funding shares fluctuate from year-to-year depending on their total number of thermostats recovered, along with the yearly expenses. The TRP does not maintain a reserve fund because budget safeguards are included in the yearly budget calculation process. All anticipated expenses are based on carefully forecasted program activity (i.e. marketing/advertising, program plan audits, etc.) and are calculated during the budget planning process. One safeguard used occurs at the end of the year when HRAI accounting reconciliations take place based on actual final TRP expenses to calculate any over or

under budgeted expenses not anticipated. Once these figures are calculated, each manufacturers' and distributors' funding shares are examined to determine whether or not they are owed a credit (funds collected exceeds final budget expenses) or are required to pay additional funds (funds collected not enough to cover final budget expenses). Another safeguard used is in cases of programs under funding during any particular year, HRAI's reserve fund will float the extra TRP expenses until reconciliation occurs and the funds are recouped at the end of the year. This funding model has been used since HRAI was appointed to manage the program in 2010. To-date it has been successful and is working smoothly, therefore, it will continue to be used going forward until such time as any issues occur warranting necessary changes.

To ensure the manufacturers and distributors are kept fully informed, at the end of each program year TRP provides them with detailed reports that include all final program expenses and performance to budget year-to-year comparisons, as well as operation cost per unit figures, etc.

5.2 Steward Compliance

HRAI will actively identify and recruit manufacturers and distributors that sell and/or import thermostats into British Columbia who are not participating in the Plan. Techniques to identify these companies will include audits of collected materials and information received from the industry associations and member companies.

Once a company is identified, HRAI will issue communications (letter, email or phone call) to advise the steward of their regulatory obligation to participate in a stewardship program. If the company does not comply, HRAI will issue a letter to the British Columbia Ministry of Environment and Climate Change Strategy advising of the circumstances and requesting investigation and appropriate enforcement. To date the TRP has 100% of the mercury-containing thermostat manufacturers and distributors signed up as participants in the program. These manufacturers fund 100% of the program.

In 2024, less than 1% of returned thermostats came from non-participating manufacturers, but specific manufacturers were not tracked. Due to an increase in electronic thermostat collections, HRAI has asked Aevitas to track their manufacturers. The data is currently being analyzed, and if a significant number are from non-participating manufacturers, HRAI will reach out to encourage their participation.

5.3 Dispute Resolution

HRAI will contract with all suppliers and service providers by the use of formal contracts and agreements. If any disputes arise, HRAI will contact the supplier/service provider to set up a formal meeting (either in person or conference call) to discuss the issue. If the issue cannot be resolved during the meeting, HRAI will continue discussions (by scheduling a subsequent meeting or meetings) with the disputing party to reach a resolution; or to agree upon which next steps will be taken to work towards resolution. Ultimately, if resolution cannot be agreed upon between both parties, the issue will need to be resolved using appropriate legal procedures.

Any issues that may occur with thermostats (whether electronic or mercury) that are collected by entities outside of our program participant collection locations (i.e. nonparticipating depots, etc.) will be resolved on a case-by-case basis. Ultimately, the non-participant party in possession of the thermostat(s) must contact and inform HRAI directly. HRAI via TRP will then facilitate the delivery of a free appropriately sized TRP collection container directly to the party to place the thermostat(s) in. TRP will pay for the costs of transportation (via Purolator) of the collection pail to the main recycling facility (Aevitas, in Ayr, ON.) used by the program, where the thermostats will be consolidated and managed along with all other thermostats collected via the program.

It is recognized that for some disputes that cannot be resolved through an internal and voluntary dispute resolution process, the parties can access binding arbitration as per the B.C. *Arbitration Act* SBC 2020 Chapter 2. This, however, should not be the sole means of resolution as identified in the plan, and the manner in which arbitration is conducted should also respect the above-noted principles.

5.4 Cooperation with Other Thermostat Collection Programs

There are currently no other EPR programs that collect thermostats in BC. HRAI is committed to working with other stewardship agencies that operate other approved stewardship programs in British Columbia to ensure the programs operate cooperatively and as effectively as possible and that thermostats received in another program are returned through the TRP. However, TRP has never been approached by another stewardship program indicating that they have received thermostats. If this were the case, HRAI would arrange for a thermostat collection pail to be shipped to the appropriate agency with a pre-paid return Purolator waybill for the thermostats to be shipped to Aevitas to be managed accordingly and accounted for in TRP collection data.

5.5 Performance Monitoring and Reporting Commitments

HRAI will continue to ensure that the program plan’s performance is properly monitored and reported on a yearly basis according to the indicators and metrics outlined in the table below:

Performance Indicator	Reporting Metric	Specific Methods for Measurement & Reporting	Challenges, Issues or Qualifications	Description of Program Targets
Recovery Rate	Collection (total units, volume & weight) (Subject to third party assurance)	Total thermostats collected & reported are measured using: number of mercury containing thermostats (1.4 vessels per stat) + number of loose mercury (Hg) vessels (x 1.4)+ number of	n/a	Specific targets are set for the total number of thermostats collected. The targets for collection are set and agreed upon with the MOE file lead

		<p>electronic thermostats; separate total #'s for each item above are also reported; weight of mercury collected & reported from mercury thermostats in Kg calculated based on 2.5 grams of Hg per vessel; weight of plastics measured in Kg and reported; weight of metals are measured in Kg and reported; and weight of glass measured in Kg, calculated based on 1 gram of glass per vessel.</p>		<p>and are based on the calendar year.</p>
Capture Rate	Product available for collection	<p>Description on how capture rate is measured is fully outlined in this plan in Section 3.5.</p>	<p>Accurate numbers of the product available for collection are not available for TRP (Please refer to Section 3.5).</p>	<p>Description of these targets and how they're determined is outlined in Section 3.5.</p>
	Capture Rate	<p>TRP targets are based on a percent capture basis, emphasizing modest program growth, using the assumptions as outlined in Section 3.5.</p>	<p>Accurate numbers of the product available to determine capture rate are not available for TRP (refer to Section 3.5).</p>	<p>Description of these targets is outlined in Section 3.5.</p>
	Collection per Regional District (Subject to	<p>Amounts reported per regional district based on total # of units.</p>	n/a	<p>Total # of thermostats and total number of loose vessels</p>

	third party assurance)			are reported per regional district.
Per Capita Collection (Units)	Collection per Capita Provincial (Subject to third party assurance)	Description on how per capita collection is measured is outlined in Section 3.5 .	Accurate numbers of the product available for collection are not available for TRP (see Section 3.5).	Description of these targets and how they're determined is outlined in Section 3.5 .
Pollution Prevention Hierarchy	Percent (Subject to third party assurance)	Detailed description of how all thermostat components are recycled and managed, and also recycling rates are outlined in Section 3.5 .	n/a	Description of how the recycling percent is determined is fully outlined in Section 3.5 .
	Use of Approved/ Certified Service Providers (Subject to third party assurance)	Description of facilities used and outlined on Section 3.5 .	n/a	n/a
Awareness	Number of Activities or investment of commercial outreach	Description of different industry/commercial outreach activities conducted will be specifically reported each year.	n/a	Description of different outreach tools and activities, as well as targets is fully outlined in this plan on Sections 3.4 and 3.5 .

Accessibility	Total number of collection points in the province and by Regional District combined with Send Back Channel coverage (Subject to third party assurance)	Description of the different collection channels used by the program outlined in Section 3.1.	n/a	Description of collection point targets is fully outlined in this plan in Section 3.2.
	Percent of population served using SABC service standard	Description of percent of population served by program outlined in Section 3.2.	n/a	Description of percent of population served by program outlined in Section 3.2.
	Alternative collection events or mechanisms	Description of collection mechanisms and events outlined in Section 3.3 and 3.4.	n/a	n/a
Materials Management Costs	Program total and operating cost per unit collected	Description of how this information is shared with program stewards is outlined in this plan in Section 5.1.	n/a	n/a

Performance Measures Summary outlined in the table below:

Measures	Targets/Goal					
	2025	2026	2027	2028	2029	2030
Collection Location Targets (participation) (Subject to third party assurance)	387	400	400	400	400	400

Accessibility Targets (100% accessibility available since Collection Points combined with Send-Back Channel serves all BC residents)	100%	100%	100%	100%	100%	100%
Collection Targets Mercury-containing Thermostats (Subject to third party assurance)	2,987	2,831	2,689	2,555	2,427	2,308
Collection Targets Electronic Thermostats (Subject to third party assurance)	3,311	3,477	3,651	3,833	4,025	4,235
Consumer Awareness Percentage (Measurable by consumer benchmarking studies in collaboration with SABC when conducted)	50%	50%	50%	50%	50%	50%
Consumer Outreach Activities	<ul style="list-style-type: none"> Annual Reports to include summaries of all consumer awareness outreach initiatives. 					
Industry Awareness	<ul style="list-style-type: none"> Program website — the program website will be updated monthly with collection results and new program participants and drop-off locations. Printed brochures — a minimum of 500 brochures will be printed and distributed on an annual basis. Printed posters — posters will be distributed to all new drop-off locations to be displayed on site. 					

	Industry-facing advertising – a minimum of 10 ads per year will target industry (for example, through industry associations, trade publications, e-blasts, etc.)
Third Party Certifications & Approvals (Subject to third party assurance)	<ul style="list-style-type: none"> Annual Reports to include proof that transportation/recycling companies used by the program have the appropriate certificates of approval to transport (i.e. “Movement Document/Manifest”), receive and process all types of thermostats.
Send-back-Channel Collection (Subject to third party assurance)	<ul style="list-style-type: none"> Annual Reports to include percentage of thermostats collected via this channel, as well as compared to other collection points/methods.
Regional District /Municipal Collection (Subject to third party assurance)	<ul style="list-style-type: none"> Annual Reports to include percentage of thermostats collected via this channel, as well as compared to other collection points/methods, as well provide analysis.
Pollution Prevention Hierarchy (Subject to third party assurance)	<ul style="list-style-type: none"> Annual Reports to include an outline of how thermostats are managed in accordance with the PPH.
Management of Environmental Impacts (Subject to third party assurance)	<ul style="list-style-type: none"> Annual Reports to include explanation of how thermostats and their individual components (mercury, plastics, metals and glass) are managed and their individual processing/recycling pathways.
Agency’s Structure & Governance (Board Members/Affiliation)	<ul style="list-style-type: none"> Annual Reports to include any changes to HRAI’s structure, governance, newly appointed board members and affiliation.

6. Stakeholder Consultation

6.1 Promotion of Draft Plan

HRAI undertook stakeholder consultations on the contents of this plan. The following activities were conducted to solicit stakeholder feedback:

- Draft Plan posted on TRP website February 3, 2025

- Posted to <https://www.hrai.ca/trp> for comment until March 19, 2025 (a total period of 45 days)
- Notice of public consultation shared with:
 - Ministry of Environment and Climate Change Strategy
 - RCBC (notification to members and notice posted on RCBC website)
 - CWMA newsletter
 - HRAI members (includes contracts, wholesalers, manufacturers and associates)
 - HRAI newsletter
 - All TRP participants
 - Purolator
 - Aevitas
 - BC Local Governments
 - BC Regional Districts
 - First Nations Recycling Initiative (FNRI)
 - Indigenous Zero Waste Technical Advisory Group (IZWTAG)
- Use of social media to promote plan and public consultations (Twitter, Facebook)
- Notice of consultation posted on HRAI/TRP website and available for comments

6.2 Public Consultations

Stakeholder consultation was conducted with interested parties. The public consultation was meant to gather feedback and ideas to improve the Program Plan. The consultation included four online consultation webinars held on February 25, February 27, March 4, and March 6, 2025.

The online consultation webinars included a PowerPoint presentation that provided an overview of the Plan, as well as opportunities to ask questions and provide feedback to the Plan either by the chat function during the webinars, directly on the TRP website, or by emailing trp-consultation@hrai.ca.

During the consultations, each individual response/feedback brought forward regarding the Plan was answered, addressed and discussed immediately with the stakeholder in the format it was received by HRAI staff.

On-going, all stakeholders are able to contact the main TRP representative at HRAI (TRP contact name is always available on the program's website (www.hrai.ca/trp) at anytime to address any concerns, as well as to provide any input regarding the implementation and operation of the Plan.

[Appendix E](#) includes a list of webinar attendees, and a summary of feedback received.

Appendices

Appendix A: List of Thermostats Manufacturers and Distributors Signed-on to Participate in the TRP EPR Plan

TRP Registered Thermostat Manufacturers and Distributors:

- Resideo (Honeywell)
- Johnson Controls (York)
- Carrier
- Copeland (Emerson/White-Rodgers)
- Lennox

The list of participating manufacturers is posted on the TRP website (<https://www.hrai.ca/program-facilitators>).

Appendix B: List of HRAI Board of Directors 2024-2025

Chris Hann – Chair

Wolseley Canada

Tara Smith – Past Chair

Mr. Furnace

Joe Muchynski – Vice Chair

Arvin Air

Mike Miller – Secretary-Treasurer

Taco Comfort Solutions

Alex Gibbs – Director

Refrigerative Supply Limited

Mathieu Cardinal – Director

RefPlus

Mike Travers – Director

Reliance

Sandy MacLeod – President & CEO

HRAI

The current list of HRAI Board of Directors is posted on HRAI website:
[HRAI Board of Directors](#)

Appendix C: List of TRP Advisory Committee Members

Arnie Meyer (Chair) -Resideo

Jeff Werwie - Johnson Controls

Jeff McGaha - Johnson Controls

Bob Johnson - Lennox

Don Rooks - Daikino

Jason Carline - Resideo

Dennis Kozina - Emerson

Matt Lattanzi - Nortek

Jason Thomas - Carrier

Frank Baldwin - Goodman

Jeff Stanek - ITT

David Stephens - Johnson Controls

Chris Forth - Johnson Controls

John Hurst - Lennox

Julie Sherman - Lennox

Bob Bentz - Nortek

Paul Ahearn - Schneider Electric

Alexander Fisher - Schneider Electric

Mike DuFour - Carrier

Amber Smith - Emerson

Chuck Ketterer - Emerson

Appendix D: 2023 EDM GIS Analysis Report

LetterHRAIBC2024_OM

Appendix E: Stakeholder Consultation Results Summary

Online Consultation Webinar – February 25, 2025

Attendee	Organization	Title

Online Consultation Webinar – February 27, 2025

Attendee	Organization	Title

Online Consultation Webinar – March 4, 2025

Attendee	Organization	Title

Online Consultation Webinar – March 6, 2025

Attendee	Organization	Title

Summary of Questions/Comments

The following table summarizes the comments, questions and feedback that were received:

Participant Comments, Questions or Feedback (general themes)	Response or Action

Where relevant, the questions and comments received from the participants in the online consultation webinars have been incorporated throughout the Plan to reflect the feedback we received and to provide greater clarification about how the Plan will operate.