



Reference: 414555

June 20, 2025

Michael Zarbl
Executive Director
Major Appliance Recycling Roundtable
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Burnaby, BC V5G 4Y2
mzarble@marrbccollab.ca

Dear Michael Zarbl:

Thank you for submitting proposed amendments to the B.C. Major Appliance Extended Producer Responsibility (EPR) Plan (the “plan”) for major household appliances initially on June 16, 2022, in fulfillment of the requirements of Part 2, Section 6 of the [Recycling Regulation](#) (the “regulation”) made under the [Environmental Management Act](#). Further, the most recent revision of the plan was submitted June 5, 2025.

I acknowledge the efforts of the Major Appliance Recycling Roundtable (MARR) and the ongoing dialogue between MARR and EPR section staff to develop revisions and improvements to the plan to better meet the requirements of the regulation.

Under the regulation, the director, otherwise known as the Statutory Decision Maker (SDM), has the ability to both amend an approved EPR plan on their own initiative, and to approve amendments to an approved plan that have been proposed by the producer appointed agency.

Prior to issuance of this decision letter, MARR was provided with feedback on the proposed plan amendments and has had the opportunity to propose further amendments or provide additional information for consideration. I have completed my review of the submitted plan, and MARR’s revisions of the plan in response to the proposed amendments as outlined in my preliminary decision letter of February 26, 2025. Pursuant to Section 5(5) of the regulation, I hereby approve the amendments to the plan proposed by MARR in the revision of June 5, 2025.

I am satisfied that the amended plan addresses the various regulatory requirements. I want to acknowledge MARR’s commitments to close the gap of the population having access to collection services, to investigate collectors that exceed a certain threshold of ozone depleting

substance (ODS) containing appliances that are received without ODS gas, and pursuing a solution to manage all material components in ODS-containing appliances. MARR has demonstrated a commitment to strong program performance and a commitment to continuous improvement.

Ministry Expectations:

The ministry expects continuous improvement across all future plans and amendments submitted by MARR. This includes the following areas of focus, for MARR's consideration:

A. Paying the Cost

Please note that the ministry has updated guidance documents for producers paying the cost, [Paying the Costs under Recycling Regulation Section 5\(1\)\(c\)\(i\) and Dispute Resolution Guidance 2024](#). For future plan reviews, it is expected that MARR follows the updated guidance to ensure the compensation rate methodology is presented as the steps taken/methods used (e.g., step-by-step process for negotiating costs, what happens at each step of the process, what variables are included in the compensation rate methodology, etc.) which will allow interested parties to determine implications to their interests.

B. Consumer Awareness

For future plan reviews, it is expected that MARR demonstrate continuous improvement in consumer awareness. Continuous improvement can be demonstrated in different ways, including setting progressively higher general awareness targets over time or establishing targeted awareness commitments to identify consumer groups, industry sectors, all product types managed by the program, or geographical areas that may not be properly managing MARR program products.

C. Management of Environmental Impacts

For future plan reviews, with respect to the recovery and treatment of insulating foam and associated halocarbons, it is expected that MARR work towards the establishment of specific targets for material recovery. These targets would be expected to be developed once the recovery and treatment of insulating foam and halocarbons has been implemented for a period of enough time to establish baseline data on material recovery and treatment rates.

D. Management of Plastics from non-ODS Containing Appliances

MARR should consider the management of plastics from non-ODS containing appliances. On average, 64% of appliances collected by the MARR program are non-refrigerant appliances. As MARR's program manages more non-ODS containing

appliances and the proportion of modern appliances that are made up of plastics has increased, MARR's current downstream management practice of landfilling plastics from these appliances is still an area of concern. I understand the challenges involved in managing plastics from major appliances collected by the program and the time needed to conduct research to understand the impacts of changing the supply chain for non-ODS appliances. Therefore, the expectation for MARR's next plan review would include consideration on how MARR will improve the management of plastics from non-ODS containing appliances at the highest level of the PPH

Reporting Expectations

The ministry expects this approval letter to be forwarded to MARR's board of directors as well as its member producers, since each producer is responsible for ensuring its agent fulfills the plan, and compliance proceedings may be taken against a producer if the agent fails to implement the plan.

Third Party Assurance for Non-Financial Information in Annual Reports

Third party assurance for non-financial information in Annual Reports is required through Section 8(2)(h) of the regulation. The assurance report should be completed in accordance with the document entitled, "Third party assurance for non-financial information in annual reports" dated November 2024 and revised from time to time, which is enclosed.

Additionally, please be advised, under Part 2, Section 8(2)(h) of the regulation, the director can specify any other information required in the annual report. To ensure the continuity of all performance measures, performance requirements, and targets in the plan, reporting on each of these metrics will be maintained until they are superseded by an approved plan renewal.

Next Plan Review Due Date

Section 6 of the regulation requires a plan review every five years. As per this requirement, MARR must review its approved plan, conduct consultation with interested parties, and submit proposed amendments to the director, or notify the director in writing that no amendments to the plan are necessary, by **June 29, 2027**. Guidance on this process can be found on the Extended Producer Responsibility webpage at: [Extended Producer Responsibility - Province of British Columbia \(gov.bc.ca\)](https://www2.gov.bc.ca/gov2/industry/extended_producer_responsibility).

Right to appeal

If you disagree with this decision, Division 2 of Part 8 of the Environmental Management Act provides for appeal of my decision to the Environmental Appeal Board (EAB). In accordance with the Act and with the Environmental Appeal Board Procedures regulation, the EAB must

receive notice of the appeal no later than 30 days after the date you receive this decision. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

Thank you for your efforts on this plan, and I appreciate MARR's continued commitment to achieving compliance in this regard. If you have any questions regarding the implementation of the plan, please contact me at andreas.wins-purdy@gov.bc.ca or through the Extended Producer Responsibility inbox at ExtendedProducerResponsibility@gov.bc.ca.

Sincerely,



Andreas Wins-Purdy, P.Ag.
Director, Extended Producer Responsibility, Program Delivery
Authorizations and Remediation Branch
Environmental Protection Division

cc: Extended Producer Responsibility: ExtendedProducerResponsibility@gov.bc.ca
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Enclosure:

MARR EPR Plan, revised June 5, 2025.
Third party assurance for non-financial information in annual reports, November 2024.

BC Major Appliance Extended Producer Responsibility Plan

Product Category:

Major Household Appliances within the Electronic and Electrical Product Category

Submitted to the Ministry of Environment
and Parks by: Major Appliance Recycling
Roundtable

Approval Date: June 29, 2012

Revision Date June 15, 2022

Revision Date June 5, 2025



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Glossary of Terms and Abbreviations

AHAM	Association of Home Appliance Manufacturers
APF	Administrative Program Fee
Collection site	Facility that accepts end-of-life major appliances
DfE	Design for the Environment
EPR	Extended Producer Responsibility
GHG	Greenhouse gases
GWP	Global Warming Potential
IC&I	Industrial, commercial and/or institutional
LGAC	Local Government Advisory Council
Local Government	Municipalities, regional districts and First Nation governments
MARR	Major Appliance Recycling Roundtable
ODS	Ozone Depleting Halocarbon refrigerants subject to BC regulation B.C. Reg. 317/2012 <i>OZONE DEPLETING SUBSTANCES AND OTHER HALOCARBONS REGULATION</i> from residential products that utilize a vapor-compression refrigeration system listed in MARR's Product List and Definitions listed on MARR's website ¹ .
RCBC	Recycling Council of British Columbia
RCC	Retail Council of Canada
SABC	Stewardship Agencies of BC

¹ <https://www.marrbc.ca/?AA=Download&AT=202&AD=98,DIFile>

Introduction

In British Columbia (BC), the Recycling Regulation² under the *Environmental Management Act* sets out the requirements of extended producer responsibility (EPR), including for approved Extended Producer Responsibility plans. These requirements for Extended Producer Responsibility plans are outlined in section 4 of the Recycling Regulation, stating:

“A producer must submit an extended producer responsibility plan, at the time specified in the applicable Schedule, if any, and in a manner and format satisfactory to a director, for the products within the product category of the product the producer uses in a commercial enterprise, sells, offers for sale or distributes in British Columbia...”

This five-year Extended Producer Responsibility plan for major household appliances (“Extended Producer Responsibility plan”) is being submitted by the Major Appliance Recycling Roundtable (MARR) in accordance with the Recycling Regulation under the *Environmental Management Act*. The Extended Producer Responsibility plan covers major household appliances contained within the electronic and electrical product category of the Recycling Regulation, and includes the following major product types³:

- Refrigerators, wine coolers and beverage centers
- Freezers
- Portable, room and window air conditioners
- Portable dehumidifiers
- Clothes washers and dryers
- Ranges, built-in ovens and surface cooking units
- Built-in and over the range microwave ovens
- Range hoods and downdrafts
- Dishwashers
- Food waste disposers and trash compactors
- Electric water dispensers

This Extended Producer Responsibility plan replaces the previous Extended Producer Responsibility plan for major appliances submitted by the Association of Home Appliance Manufacturers Canada (AHAM Canada) and the Retail Council of Canada (RCC) approved April, 2021

² British Columbia Ministry of Environment and Parks,, BC Recycling Regulation, Accessed at http://www.bclaws.ca/civix/document/id/complete/statreg/449_2004 .

³ For an up-to-date listing of the products covered by the Extended Producer Responsibility Plan, please refer to the detailed list of included and excluded products available at: <http://www.marrbc.ca/participants/products>

1. Duty of the Producer

As per section 2(1) of the Recycling Regulation under the Environmental Management Act:

“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 use in a commercial enterprise, sell, offer for sale or distribute the product in British Columbia.”

2. Appointment of an Agency

MARR is a not-for-profit Extended Producer Responsibility agency created to implement and operate an Extended Producer Responsibility plan for end-of-life major household appliances in BC. It acts on behalf of producers of major appliances who are obligated under the BC Recycling Regulation.

In registering, each producer must sign an Agency Appointment Agreement⁴ that formalizes the role of MARR as its agent to carry out the duties of the producer as set out in section 2(2) of the Recycling Regulation. This Extended Producer Responsibility plan confirms the duties that MARR will perform on behalf of each registered producer. Copies of membership agreements are available upon request to the Director.

The MARR program is open to all obligated producers of major household appliances in BC, including manufacturers, wholesalers and retailers. A current list of registered participants is available on MARR's website at <http://www.marrbc.ca/participants/registered>. As of April 2025, there were 147 individual companies registered with MARR.

As MARR currently administers the only approved Extended Producer Responsibility plan for major household appliances in BC, it is expected that member producers represent the vast majority of major appliance sales in the province. With representation from major manufacturers, retailers and wholesalers, the more than 147 registered participants of MARR reported total unit sales of 1,186,087 major appliances for 2023 across all product types. MARR's registered producers represent the prevailing share of producers of major appliances obligated under the B.C. Recycling Regulation.

Agency Governance

MARR is a not-for-profit Extended Producer Responsibility agency incorporated under the *Canada Not-for-Profit Corporations Act* on July 17, 2012. The Retail Council of Canada (RCC) and the Association of Home Appliance Manufacturers (AHAM) are the corporation's two members. MARR is governed by a Board of Directors comprised of representatives from major appliance manufacturers and retailers. A list of current board members is published at www.marrbc.ca/about

MARR maintains transparency with its members and stakeholders by posting relevant policies, guidelines, reports and materials on its website. Rules and Policies, Annual Reports and Financial Statements are publicly available to members and stakeholders on the following webpages:

- Rules and Policies: www.marrbc.ca/participants/register
- Annual Reports and Financial Statements: www.marrbc.ca/about

⁴ Available on MARR's website at <http://www.marrbc.ca/documents/MARR-Agency-Appointment-Agreement-May-1-2013.pdf>

The MARR-Local Government Advisory Council (LGAC) was created in 2013 to provide a forum for local governments involved in the collection of major household appliances to deliver their unique perspective and advice to MARR. The LGAC includes representation from regional districts and municipalities representing urban, rural and remote communities, allowing MARR to better understand municipal and regional needs, capabilities and capacities⁵. Information and minutes of the LGAC can be found at <https://www.marrbc.ca/collectors/lgac>

⁵ The current membership of the MARR-LGAC includes the Regional District of Mount Waddington, the Capital Regional District, the Metro Vancouver Regional District, the Regional District of Central Kootenay, the Regional District of Bulkley-Nechako, the Regional District of North Okanagan, the City of Vancouver and the First Nations Recycling Initiative.

3. Products Covered Under the Plan

This stewardship plan covers a variety of large appliances as listed under **2(1)(c)**, “electronic or electrical appliances” and detailed in **Schedule 3** of the **Electronic and Electrical Product** category of the BC Recycling Regulation under the *Environmental Management Act*.

The plan covers major appliances that have been designated for residential use in BC, provided they are electrical or electrically powered. However, it also includes:

- Products that are dual fuel natural gas or propane products, provided the other power source is electricity;
- Appliances used in or sold for industrial, commercial and/or institutional (IC&I) applications that have essentially the same design characteristics as major household appliances; and
- Products that are used for refrigeration or freezing that contain a compressor and/or refrigerant gases.
- Legacy products that fit the product definition.

MARR’s Extended Producer Responsibility Role

Currently there are no other agencies, aside from MARR, appointed to act in an Extended Producer Responsibility capacity for major appliances in British Columbia. As such, there are no other Extended Producer Responsibility agencies or plans covering the same products.

The stewardship plan covers the following products:

- Refrigerators, wine coolers and beverage centers;
- Freezers;
- Portable, room and window air conditioners;
- Portable dehumidifiers;
- Clothes washers and dryers;
- Ranges, built-in ovens and surface cooking units;
- Built-in and over the range microwave ovens;
- Range hoods and downdrafts;
- Dishwashers;
- Food waste disposers and trash compactors; and
- Electric water dispensers.

For a detailed list of included products and relevant definitions, please refer to the MARR website:

<https://www.marrbc.ca/?AA=Download&AT=202&AD=98,DIFile>

4. Stakeholder Consultation

Section 5(1)(b) of the Recycling Regulation provides:

The producer has undertaken satisfactory consultation with stakeholders prior to submitting the plan for approval and will provide opportunity for stakeholder input in the implementation and operation of the Extended Producer Responsibility program

During 2021 and 2022, MARR undertook a consultation process that provided meaningful opportunities for public consultation and comment. An overview of that process is included in Appendix A.

If any interested parties wish to submit ongoing input, please email info@marrbc.ca

5. Collection System and Consumer Access

With respect to the recycling of major household appliances, there exists a long-standing and effective market-based system for end-of-life product management. In a broad view, this market-based system exists largely because major household appliances currently have a financial value at end-of-life. That is, collectors and processors of end-of-life major appliances have a financial incentive to recycle the product, as it can be a revenue-generating activity.

The Extended Producer Responsibility plan for major appliances builds on and supports the existing market-based system for end-of-life major appliances, rather than supplanting and replacing it with a traditional Extended Producer Responsibility program model wherein all aspects of end-of-life product collection, transportation and processing are controlled and managed by a single Extended Producer Responsibility agency. The imposition of a traditional Extended Producer Responsibility model on the pre-existing market-based system has the potential to cause significant economic dislocation for businesses operating in that system, confusion for consumers and ultimately reduced environmental performance. In the view of MARR and its member companies, building upon the market-based system and the existing economic players within that system is the most responsible, economically efficient and environmentally prudent approach to maintaining and enhancing the already impressive performance of major appliance recycling in British Columbia.

The activities proposed in this plan are therefore meant to enhance the performance of the current system, to address specific circumstances and challenges affecting key stakeholder groups⁶, and to ensure continuous improvement with respect to the achievement of desired outcomes. Guiding the Extended Producer Responsibility plan are the following commitments:

1. A commitment to reasonable and free consumer access to collection facilities. This will be accomplished by:
 - a) maintaining a robust network of collectors that provide collection of large appliances at no cost to the public, and
 - b) providing financial, logistical, promotional, organizational and/or administrative support as needed to local governments or community organizations for organized collection events where the establishment of a permanent collection site is not feasible.
 - c) Supplying Large Appliance Collection bins in remote and rural communities that have limited access to collections sites. MARR plans to build and supply 5 bins per year for 5 years pending demand, and MARR will pay the cost of the bin, transportation and hauling of the full bin to a processor.

2. Through a network of approved collectors and community partners, a commitment to enhance the performance of the current system by paying the cost for:
 - a) the management, reporting, administration and collection of large appliances within the product categories;
 - b) safe removal of gasses from refrigerated appliances within the product categories

⁶ To inform this plan, stakeholders were engaged to better understand the challenges with respect to the current system, and areas for potential improvement. For more details on stakeholder consultation activities, please refer to Section 5.

- c) safe removal of mercury switches and capacitors containing Polychlorinated biphenyls (PCBs); and
- d) transportation of appliances to a processor should the metal value of the end-of-life appliances not cover transportation costs.

MARR will provide these economic incentives to qualified collectors who have executed a collector agreement, and who, upon verification have met the requirements specified in those agreements and will be subject to ongoing audit and compliance verification.

Recognizing that BC's geography is varied and having heard from stakeholders that they have differing needs based upon their location, MARR will operationalize these commitments in close consultation with impacted local governments. This is a recognition that one solution may not work for all communities, and that different communities have different operational models and requirements.

Collection System

A market-driven recycling system for major appliances has been in place in British Columbia for decades, historically driven by the positive financial value of these products at end-of-life. This system is comprised of a variety of collectors, including retailers, local governments, utilities and private companies, which accept major appliances and then channel those products to scrap metal consolidators and processors. As part of the larger commodities market, scrap metal companies process the products to recover metal components, which are sold to end-markets such as steel mills for recycling.

MARR's intention is to provide an opportunity for those currently involved in the collection of end-of-life appliances to become qualified collectors and to be part of the collection network upon signing a collection agreement with MARR

MARR has established a set of basic collector qualification standards to be met in order to qualify as a collector under the MARR program, such as free drop off service to residents, proof of all necessary licenses and permits, compliance with health and safety requirements, and specified liability and business insurance coverage. Qualification standards will also include reporting requirements to allow MARR to meet its reporting requirements to the MEP.

Qualified Collectors will be required to report data such as:

- a) Total metal tonnage, and number of units collected by category (ODS/ODS Empty/Non ODS and Product Category)
- b) Weight of ODS collected
- c) Weight of ODS sent for destruction

Drop-Off Collection Sites

There are 218 contracted collection site locations in BC that offer free and ready collection of MARR products to the public as of April 11, 2025

MARR continues to expand the collection network. The most current list of MARR authorized collection sites can be found at <https://www.marrbc.ca/collection-site-locator>.

Collection Events

Accessibility to free drop-off in some rural areas of British Columbia is challenging when local population numbers do not warrant permanent collection facilities. Often the collection of large appliances for recycling in small or remote communities is based on annual or semi-annual collection events organized by local government or community groups.

In areas where gaps in accessibility to collection sites exist, MARR is committed to supporting local drop off events. Logistical, promotional, organization and administrative support, as needed, will be provided to assist with collection events and activities. MARR will report on the number collection events and the locations on an annual basis. MARR commits to conducting clean up events when reasonable in communities that do not have access to permanent collection sites and conducting a minimum of one collection event per year in any Regional District without a permanent collection site.

A remote stockpile recovery effort occurs when legacy end-of-life large appliances that have been collected in a remote or rural area are recovered by MARR. MARR commits to working with the community to clean up the stockpile, and to work with the community to develop a system to prevent a future stockpile of MARR product. This may be the establishment of MARR collection bins, the development of traditional collection site or another solution that works within the community. MARR will report annually on stockpile recovery/clean-up efforts and the effort taken for the ongoing community benefit until a solution exists. MARR also is a member of the Indigenous Zero Waste Technical Advisory Group (IZWTAG) and the First Nation Recycling Initiative (FNRI) where we support large appliance recycling by providing assistance where needed often in the form of transportation and logistical support for community collection events.

Pick-up Services

There are a number of options available to consumers to manage the exchange of new and old appliances. When a consumer purchases a new appliance, many retailers offer a delivery/take-back option that facilitates the proper recycling or resale of the used appliance on behalf of the consumer. According to survey results of 116 major appliance retailers conducted as a part of the System Study, 84 percent of respondents offered a take-back service to their customers when a new appliance was delivered.

Accessibility to Collection Sites

With over 200 collections sites accessibility to a MARR collection site is convenient to well over 90% of the population of British Columbia. MARR will calculate the accessibility by the presence of collection sites in each municipality or within 20 km of the municipality and the represented population. 20 km will be calculated as a circular radius from the population center and population numbers will be retrieved annually from The Government of British Columbia:

<https://www2.gov.bc.ca/gov/content/data/statistics/people-population-community/population/population-estimates> In cases where the natural environment (mountains without passes or water access barriers) prevents travel to a collection point within 20km MARR will not calculate that population center with accessibility. MARR will continue to work to establish collection sites or to place MARR collection bins or prioritize collection events in the communities that have natural barriers to other collection sites.

Accessibility to free drop-off locations for BC residents was estimated at 94.9 percent as reported in the MARR 2020 annual report. It is MARR's intention to continue to close this gap by continuing to add

collection sites across BC and to maintain collection sites in every regional district in BC. MARR will continue to seek potential collectors in areas with low service to continue to increase accessibility.

Accessibility to free drop-off in some rural areas of British Columbia is challenging when low population numbers do not support the development of permanent collection facilities. The collection of large appliances in rural and remote communities is achieved by holding community organized drop-off/round-up collection events as needed. In areas where gaps in accessibility to collection sites exist MARR is committed to supporting local drop off events by providing transportation and ODS removal for all MARR products.

Tracking Product Pathways Not Directly Managed by the Extended Producer Responsibility Program

Major appliance recycling utilizes the existing market-based system and MARR does not contract directly with all processors it is therefore not reasonable to obtain information on materials processed outside of the MARR Collection network. Because of the value of end-of-life appliances there are independent repair services, insurance and restoration companies and low volume scrap metal “peddlers” or non-contracted municipal governments that handle a small volume of end-of-life large appliances.

MARR regularly participates in waste audits conducted by local governments and to date there have been no reported instances of major appliances in the waste stream. It is our opinion that the vast majority of appliances are recycled through the MARR network and the remaining recycled through the pathways not managed by the Extended Producer Responsibility program. MARR commits to participating in a waste audit yearly and will report on the results annually.

6. Consumer Awareness

Since the approval of the initial Extended Producer Responsibility plan for major appliances in 2012, MARR has developed detailed and well-rounded consumer awareness plan that includes materials and resources for producers, retailers and collectors, in addition to the resources for consumers. MARR has also partnered with other organizations to increase its presence and accessibility to consumers.

MARR is committed to working with partner stakeholders, including First Nations, local governments and non-profit associations – along with other Extended Producer Responsibility agencies – to improve consumer awareness on an ongoing basis.

The cornerstone of MARR’s consumer awareness is the maintenance of a robust website that allows consumers and stakeholders access to program information including maps and a searchable database of collections sites, news and updates on the program, accepted products and Administrative Program Fees (APF’s) and access to MARR’s annual reports.

MARR commits to maintaining an awareness level of the percentage of surveyed adults in British Columbia that are aware they can recycle large appliances. MARR will target a progressive consumer awareness level shown in section 10 that will be determined by an annual survey with a margin of error of less than +/-5%

Information for consumers on how to recycle major appliances, including a list of collection sites, is easily found on the MARR website at the following links:

- How to Recycle: <https://www.largeappliance recycling.ca/products>
- Collection Sites: <https://www.largeappliance recycling.ca/collection-site-locator#findsites>

In addition to MARR’s website, informational brochures and point-of-sale rack cards are provided at no charge for collectors and retailers. MARR also produces collection site signage and “what’s accepted” manuals for collectors.

Building on these efforts MARR undertakes an annual public consumer education plan. The details of the annual plan are reported in the annual report and may include a mix of any of the following:

- Digital media
- Social media
- Television
- Radio
- Print
- Video
- Google AdWords
- Community Recycling Calendars

MARR also maintains a toll-free number and a dedicated email address to be able to quickly respond to anyone that may have questions beyond what is covered by the communication materials.

Should consumer awareness levels fall below the targets established in section 11, MARR will undertake a full review of the annual consumer awareness plan and budget and make changes to the mix of tactics. As part of the annual consumer awareness survey, MARR tracks the effectiveness of the advertising tactics in the yearly plan. If consumer awareness falls below target MARR will identify the advertising tactic(s) that fell below standard and in the following years will modify the tactic as corrective action.

7. Management of Environmental Impacts

MARR strives to promote the principles of the pollution prevention hierarchy where technically feasible and economically viable, to divert as much material as possible from the waste stream. Options and strategies employed by MARR and its member organizations for managing end-of-life major appliances based on the pollution prevention hierarchy are described below, along with factors influencing the decision-making process, and areas for further research and development or materials processing. In addition, improvements in GHG performance can be achieved from the proper recovery and reuse of ODS materials.

Reduce the Environmental Impact

Managing the safe removal of ODS gas from all units collected that contain refrigerant gasses used for cooling purposes is the primary environmental focus of the MARR plan. Safe handling is defined as removal of ODS gas by a technician that possesses a valid certificate number for refrigerant handling under the current BC regulation who records and reports the quantity of ODS collected by weight, the tank numbers and provides a certificate of destruction/recycling to MARR on a timely basis. Based on historic collection reports MARR estimates that 20% of refrigerated appliances that reach end-of-life have no refrigerant and lack the ability to cool. This can be from natural wear and tear, damage from relocation or other causes. MARR will investigate collectors that exceed this threshold of ODS empty and attempt to determine the root cause of the empty units if possible.

MARR will report annually on the following:

- Report the percentage of units collected that had the ODS gas removed prior to collection. MARR Commits to investigate collectors where the annual ODS empty rate exceeds the 20% threshold and commits to report annually on the results of the investigation and any resulting consumer awareness activities undertaken by MARR
- MARR commits to report annually on the measures MARR will take/implement to work with these collectors that exceed the threshold
- The procedures for safe handling and disposal of ODS gasses.
- Efforts taken by or on behalf of producers to reduce environmental impacts throughout the product life cycle and to increase reusability or recyclability at the end of the life cycle.

Redesign the Product to improve recyclability

Major appliance manufacturers continue to focus significant attention on incorporating Design for the Environment (DfE) principles into the manufacturing of home appliances, specifically:

- Reducing the amount of materials used in the manufacturing of the products,
- Incorporating new very low Global Warming Potential (GWP) refrigerant and foam blowing agent chemicals, such as cyclopentane, hydrofluoroolefins (HFOs) or isobutane (r600a).

Manufacturers have eliminated the use of mercury switches and PCB containing capacitors and continue to explore ways to reduce the amount and weight of material used in the manufacturing of appliances, as well as its packaging. Light-weighting of products results in lower transportation costs (both in the outbound supply chain and in the end-of-life supply chain), as well as improvements in GHG emissions. Efforts to improve the amount and weight of material used in the manufacturing of appliances must always be balanced against ensuring consumer safety and the overall protection and lifespan of the

product.

Significant changes have and will continue to be made in the types of refrigerants and foam blowing agents used in refrigerators and freezers as manufacturers incorporate refrigerants and insulation with very low greenhouse gas impacts as mandated by new regulations and laws in the U.S. and Canada. Currently, virtually all if not all refrigerator/freezers have transitioned out of HFCs for foam blowing agents. The transition to very low refrigerants in refrigerator/freezers will be largely completed by January 1, 2022, and the remaining products (built-in products) by January 1, 2023. This effort builds on a history of environmental Extended Producer Responsibility that includes significant gains in energy efficiency and the phasing out of ozone depleting substances without losing efficiency gains⁷.

Eliminate or Reduce the Generation of Unused Portions of a Product that is Consumable

Many MARR participants have set independent corporate goals to minimize waste. Those participants are working towards significant waste reductions across their product categories.

Reuse

Appliances may have many different owners over their lifetime, usually facilitated by a used appliance retailer, private sale/donation or refurbisher. Refurbishers are organizations involved in appliance reuse or the reuse of parts. They generally receive used major appliances from commercial generators or through retailers. The main goal of the refurbisher is to resell the unit into the second-hand market, or at least use some of the parts for appliance repair

Recycle

Once an appliance is retired, or reaches end-of-life, it enters the collection system described above in Section 5. MARR collectors sell the appliances to consolidators that in turn sell the material for processing, or directly to recyclers where the appliances are shredded, and the metal is recycled. Major appliances are primarily metal (both ferrous and non-ferrous) with smaller amounts of other materials like glass, rubber, foam, paper, electronics, refrigerants, oils and other substances where applicable. The shredded material is then sorted, and ferrous and non-ferrous metals are separated from other materials such as plastic and foam.

The material composition of major appliances is reported to be approximately 74 percent metal. Of this metal, processors report that 98 percent of the ferrous and non-ferrous metal that enters the shredder is recovered and recycled back into the commodities market.⁸

Recover Energy from the Product

Refrigerant gas that has energy recovery potential is managed by the Refrigerant Management Corporation (RMC) to comply with the Ozone-depleting Substances and Halocarbon Alternatives Regulations.

⁷ <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/publications/code-practice-elimination-fluorocarbon-emissions.html>

⁸ Based on survey responses from the two processors in BC currently operating shredders.

Otherwise Dispose of the Waste from the Product in Compliance with the Act

As described above, large appliances are sold to recyclers, shredded, and their metal recovered. Shredding facilities also process other large metal items, like vehicles, with non-metal waste sent to landfill as post shredder residue.

Technicians that safely remove refrigerant gasses return the tanks to processors that are part of the Refrigerant Management Corporation (RMC) program. Once in the RMC program, gasses are transported to certified facilities where they are either purified for reuse or safely destroyed using high-temperature incineration or plasma arc technology. These destruction methods break down the harmful chemical compounds into inert substances, ensuring that they no longer pose a threat to the environment. RMC's program plays a vital role in reducing the environmental impact of appliances, particularly those containing older refrigerants like CFCs and HCFCs, which have high global warming potentials⁹.

Pollution Control and Disposal

Prior to shredding, products undergo decommissioning to remove refrigerant and to look for any other substances of concern. In general, the System Study identified that refrigerant was extracted responsibly, but some gaps remained. Most retailers surveyed transferred major appliances with refrigerant to secondary collectors, and most processors had onsite staff to perform refrigerant removal. At local government sites that accept appliances with refrigerants, most contracted out the removal of refrigerants as part of the scrap metal removal contract. Refrigerant removal generally occurs at the first location to receive the appliance. The refrigerant was removed by a technician and subsequently sent for recycling or destruction.

Few appliances reaching end of life contain mercury switches. Mercury switches were primarily used in chest freezers until they were phased out in approximately 2000 and replaced by mechanical switches. ODS technicians identify and remove mercury switches as part of the ODS removal process. Collected switches are shipped to a facility for safe processing and recovery of the mercury. MARR pays the cost of removal, shipping and processing of the mercury switch.

Material End Fates and Product and/or Material Processing Pathways

The table below illustrates the downstream management process for each material stream (based on results from the System Study)

Material Commodity	Recycled	Landfilled	Safely Destroyed
Ferrous Metal	X		
Non-Ferrous Metal	X		
Plastic		X	
Refrigerant	X		X
Other		X	

⁹ <https://www.hrai.ca/rmc-about>

It is estimated that 74 percent of materials are recycled (mostly ferrous and non-ferrous metal). The remaining 26 percent, including plastic, glass, rubber and foam, does not undergo further processing, and is currently sent to landfill.¹⁰ MARR continues to examine the management of shredder residue and identify opportunities for achieving higher end uses of residual materials. For example, in some cases, plastic residuals may be sent to waste-to-energy facilities. In 2017, MARR met with other Extended Producer Responsibility organizations and metal recyclers to discuss this issue and will continue to consider options for achieving higher end uses of residual materials. Metal recyclers are continually upgrading equipment and processes to minimize shredder residuals.

Plastic waste reduction, tracking and recycling is an area of focus. As such MARR commits to submitting a supplementary report to the director within 18 months of the approval of the EPR plan, that provides a comprehensive solution, with associated timelines, for the management of all material components in ODS-containing appliances. The report will explain how this solution addresses the management of plastics and halocarbons with due consideration to the PPH. The report will also outline the environmental and economic implications of the solution, and a detailed timeline of steps for implementation. In developing the proposed report MARR must expressly identify what if any legislative or regulatory amendments may be necessary to support and implement the comprehensive solution.

Program Environmental and Safety Risk Management and Due Diligence

In 2016, MARR completed the development of a Major Appliance Processing Standard to ensure the proper decommissioning of end-of-life appliances and the safe handling of substances of concern, including mercury switches and refrigerants. MARR met with private scrap metal facilities across the province to promote and encourage adoption of the standard.

Initially, the intention was to have the collectors of major appliances (retailers, municipalities etc.) to agree to decommission the appliances they collect in accordance with the standard or require their processors to whom they sell or provide their appliances to be certified against the standard. Part of this framework includes a certification and audit program to ensure that applicable processors are processing appliances in accordance with the standard. MARR initially approached collectors to obtain agreement with such a standard in 2015 but received little response. As a result, MARR introduced the Voluntary Processing Standard in 2016. In 2019 the Voluntary Processing Standard evolved to become a contractual commitment for all MARR collectors and is now known as the MARR Processing Standard.

¹⁰ Ibid

8. Management of Program Costs

MARR is funded by Administrative Program Fees applied to the sale and supply of new major household appliances in BC. The APFs for different products are established by MARR having regard to the cost to recycle the materials contained in the product and the cost of administering the program generally. Current APFs for products covered under the plan are listed on MARR's website at <http://www.marrbc.ca/participants/products>.

APFs are reported and remitted to MARR on either a quarterly or annual basis by registered participants (i.e., manufacturers, distributors, retailers) who have joined MARR to fulfill their regulatory obligations. Currently, it is the decision of each participant on how to manage this business cost. APFs may be shown as a separate line item on the product invoice/receipt, incorporated directly into the price of the product or absorbed, at the discretion of the relevant participant(s). If an amount is charged by a MARR participant to its customer to recover the APF, the amount must not exceed the actual APF paid by the participant to MARR. Transparency of program costs and fees is an important principle to stakeholders, particularly consumers.

Producers Paying the Cost

MARR is committed to providing reasonable and free collection to the public in accordance with the Ministry of Environment and Parks Guidance document "Producers Paying the Cost of Managing Obligated Materials and Dispute Resolution". MARR achieves this by following the procedures below:

1. Collectors are contractually obligated to accept all products covered by the plan at no cost to the consumer.
2. Collectors are paid a per unit Administrative Fee negotiated on a per contract basis.
 - a. This fee is unique for each collection site and is based on the collector reporting their actual costs which may include handling, administration and labour.
 - b. The collector may sell the units once processed and use the value of the scrap metal to help cover operating and transportation costs.
 - c. Once the net monthly costs are established this is divided by the expected number of units per month to determine the fee per unit.
3. The administrative fee is not a fixed, blended rate that every collector receives, rather it is unique per collector and pays the full cost of collecting and managing products within the product categories covered by the plan.
 - a. The fee is renegotiable should there be changes to the collector's costs.
 - b. Each contract requires 90 days notice for termination or renegotiation.
4. Each collector must hire qualified ODS removal technicians and MARR fully reimburses the cost of ODS removal to the collector or pays the ODS collector directly.
5. To protect against fluctuations in scrap metal price each contract allows for the following: Should commodity values be insufficient to pay for the cost of transporting the Program Products to market, MARR reimburses Collectors for the difference between invoiced, current market transportation costs for the major appliance portion (by weight) of any load and the price received for the metal. The weight of the major appliance portion will be determined by using the average weight of the appliances reported by the Collector to be contained in that load as determined by MARR.

MARR does not collect deposits nor pay associated refunds for products covered under the plan.

Financial Risk Management Principles

In 2015, the Board of Directors passed a resolution to establish a Restricted Reserve Fund. The purposes of the Restricted Reserve Fund are as follows:

- To assist in stabilizing eco fees by being available to manage year to year revenue and costs due to volume fluctuations.
- To cover the costs of winding up the program by the decision of the members or because of regulatory change, in an orderly manner, not to exceed one year.
- To cover any claims against the program, Board of Directors or staff in excess of the program's insurance coverage.
- To cover the costs of any unanticipated or extraordinary items.
- To fund other special projects that enhances the recycling of major appliances.
- To fund the purchase of capital equipment.
- To cover the cost of managing products with long life spans, for which collection may occur well in the future.

Transfers to the fund are made upon resolutions passed by the Board of Directors. Total contributions to the Reserve Fund are targeted to be approximately one year's operating expenses.

Rates for APFs are set by MARR and are subject to change as needed to address changing program costs and commitments, as well as annual surpluses or deficits. The Reserve Fund, however, serves as a transitional measure and/or source of funds to manage APFs during periods of program change as well as annual surpluses or deficits. APFs are reviewed by MARR on a regular basis to ensure there are sufficient funds to operate the Extended Producer Responsibility plan and maintain the appropriate level of reserves, consistent with the MARR not-for-profit mandate.

MARR's audited financial statements are also posted on the MARR website as part of its annual report. The Annual Report includes key financial information like revenues and expenditures along with additional performance measures such as number of large appliances sold and collected for recycling. This non-financial information will also be audited before being reported.

9. Dispute Resolution

Should any disputes arise involving MARR with respect to the implementation of the Extended Producer Responsibility plan, MARR will first discuss the issue directly with the disputant and may pursue standard commercial legal procedures should the need arise, including mediation, arbitration and civil proceedings, where necessary. Prior to any commercial legal procedures, a dispute should be made in writing to: Major Appliance Recycling Roundtable, 100 - 4259 Canada Way Burnaby, BC V5G 4Y2. For this section a disputant is considered anyone that has a valid contract with the Major Appliance Recycling Roundtable and actively is engaged in a disagreement relating to that contract.

This dispute resolution procedure was made with regard to the Ministry of Environment and Parks Guidance document “Producers Paying the Cost of Managing Obligated Materials and Dispute Resolution” and MARR commits to a timely and staged approach to all dispute resolutions.

<p>ongoing benefit</p> <ul style="list-style-type: none"> • The activities undertaken as part of FNRI and/or IZWTAG • Participate in one waste audit per year and report results • The number and location of collection bins produced in the year 								
<p>MARR will target accessibility to free drop-off locations for the BC population in accordance with the schedule shown. MARR will calculate the accessibility by the presence of collection sites in each municipality or within 20 km of the municipality and the represented population retrieved annually from: https://www2.gov.bc.ca/gov/content/data/statistics/people-population-community/population/population-estimates</p>	<p>Performance Target:</p> <table border="1" data-bbox="894 604 1393 716"> <tr> <td>Year 1 – 95%</td> <td>Year 2 – 95.2%</td> </tr> <tr> <td>Year 3 – 95.4%</td> <td>Year 4 – 95.6%</td> </tr> <tr> <td>Year 5 – 95.8%</td> <td></td> </tr> </table>	Year 1 – 95%	Year 2 – 95.2%	Year 3 – 95.4%	Year 4 – 95.6%	Year 5 – 95.8%		Y
Year 1 – 95%	Year 2 – 95.2%							
Year 3 – 95.4%	Year 4 – 95.6%							
Year 5 – 95.8%								
<i>Consumer Awareness</i>								
<p>MARR will report on the program’s consumer awareness materials and strategies, including:</p> <ul style="list-style-type: none"> • The number of unique visitors to MARR’s website • The number of inquiries for MARR program materials • Percentage of surveyed adults in British Columbia that are aware they can recycle large appliances. MARR will target a consumer awareness level shown that will be determined by an annual survey with a margin of error of less than +/-5% 	<p>Report annually.</p> <p>Performance Target:</p> <table border="1" data-bbox="894 1230 1393 1341"> <tr> <td>Year 1 – 80%</td> <td>Year 2 – 80.5%</td> </tr> <tr> <td>Year 3 – 81%</td> <td>Year 4 – 81.5%</td> </tr> <tr> <td>Year 5 – 82%</td> <td></td> </tr> </table>	Year 1 – 80%	Year 2 – 80.5%	Year 3 – 81%	Year 4 – 81.5%	Year 5 – 82%		N N
Year 1 – 80%	Year 2 – 80.5%							
Year 3 – 81%	Year 4 – 81.5%							
Year 5 – 82%								
<i>Financial Management</i>								
<p>MARR commits to producing and publishing independently audited financial statements annually, detailing revenues and expenditures for any fees associated with the approved Extended Producer Responsibility plan that are charged separately and identified on the consumer receipt of sale.</p>	<p>Report annually.</p>							
<p>Maintenance of a reasonable restricted reserve fund</p>	<p>Performance target: MARR should maintain a reasonable restricted reserve fund that is expected to be around the annual budgeted operating cost of the program.</p>	Y						

	Publish independently audited financial statements annually.	
<i>Environmental Management</i>		
<p>MARR will report annually on:</p> <ul style="list-style-type: none"> • The percentage of units collected that had the ODS gas removed prior to collection. • Report on any investigations that MARR undertook for any collectors in relation to ODS empty rate. • Report on the measures MARR will take to work with collectors that exceed the threshold. • The procedures for safe handling and disposal of ODS gasses. • Efforts taken by or on behalf of producers to reduce environmental impacts throughout the product life cycle and to increase reusability or recyclability at the end of the lifecycle. • A description of how the recovered product was managed in accordance with the pollution prevention hierarchy, including: • Conformance with acceptable product and/or material end disposition. • Safe Removal of ODS gas from all units collected that contain refrigerant gasses used for cooling purposes. • Report the percentage of units collected that had the ODS gas removed prior to collection. 	<p>Report annually.</p> <p>Collectors will be required to adopt the MARR Processing Standard for Recyclers of Major Appliances in order to become Qualified Collectors and be eligible to receive incentives.</p> <p>Performance Target:</p> <p>Removal of ODS gas from all units collected that contain refrigerant gasses used for cooling purposes.</p>	Y

Appendix A: Stakeholder Consultation Summary

For a plan to be successful, we understand the importance of working with and hearing from stakeholders including those who operate collection sites, design and manufacture appliances, and process end-of-life major appliances. MARR is committed to working openly with our partners to assure the best outcomes along with compliance with the Recycling Regulation.

Prior to the submission of the BC Major Appliance Extended Producer Responsibility Plan, MARR undertook a consultation process that provided meaningful opportunities for public comment. The initial stakeholder consultation took place between October 4th and November 19th, 2021, in the forms of a hybrid in-person and virtual session at the 2021 Coast Waste Management Association Annual Conference in Victoria, BC, as well as a fully virtual session held over Zoom, and acceptance of written feedback. In total, MARR emailed 295 stakeholders to invite them to register for a session or to participate in the consultation through written feedback.

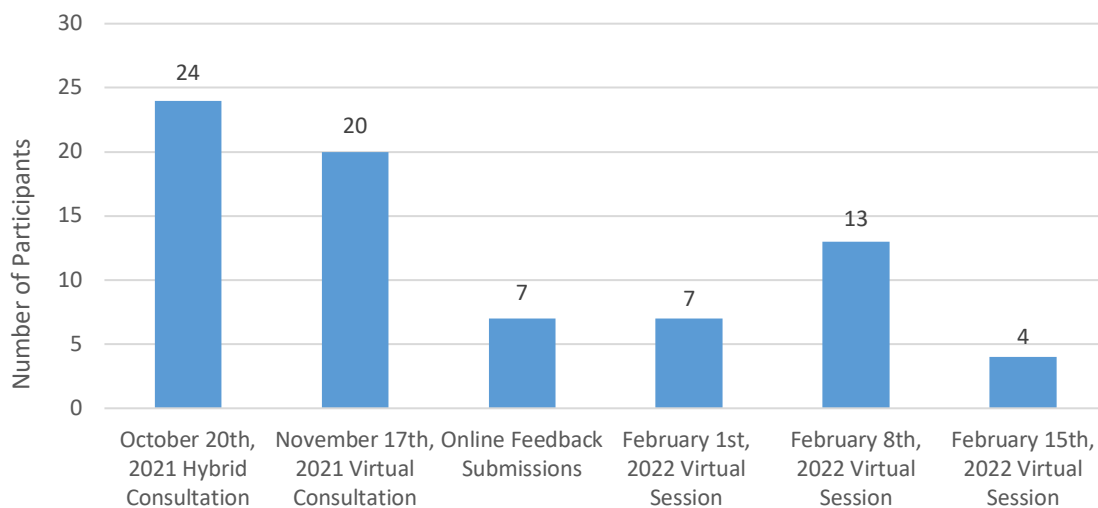
During these early stages of the process, the following stakeholder groups were consulted:

1. **Retailers and Manufacturers**, representing MARR member producers.
2. **Local and Regional Governments**, being regional districts, municipalities, and First Nation governments.
3. **Metal Recyclers and Processors**, notably companies involved in scrap metal collection, processing, consolidation, and resale.
4. **ODS Technicians**, including service providers trained in the removal of harmful substances from end-of-life major appliances.
5. **Non-Profit Organizations**, as involved in the recycling system in British Columbia.
6. **Other Stakeholders**, including representatives from the Provincial government and other interested parties.

Building on this, later consultation sessions were held over Zoom between February 1st and February 15th, 2022, with individuals representing First Nations governments and organizations (February 1st) and with MARR registered collectors (February 8th and 15th).

Figure 1 shows the participation in the consultation process by method.

Figure 1: Consultation Participation by Method



The following table provides a listing of those that participated in the Extended Producer Responsibility plan consultations.

Name	Organization
October 20th, 2021, In-Person Attendance	
A. Bruenjes	Retail Council of Canada
B. Paton	MARR Contractor
G. Wilson	Retail Council of Canada
J. Schmidt	ABC Recycling
K. Hodgins	ABC Recycling
K. MacMillan	B.C. Ministry of Environment and Climate Change Strategy
K. Morden	Retail Council of Canada
M. Dick	City of Kamloops
M. Hatch	Association of Home Appliance Manufacturers
M. Kurschner	Product Care
M. Wadeson	B.C. Ministry of Environment and Climate Change Strategy
P. Eichelberger	Alberni-Clayquot Regional District
T. Bravil	ABC Recycling
T. Daliren	City of Nanaimo
T. Dance	ABC Recycling
October 20th, 2021, Virtual Attendance	
A. Jensen	Canadian Tire
A. Perianayagam	Best Buy Canada
G. Westwood	Trail Appliances
I. Burns	qathet Regional District
J. Benton	Fraser Valley Regional District
J. Ivan	Comox Valley Regional District
M. Welsh	ABC Recycling Campbell River
N. Hartnett	Regional District of Fraser-Fort George
T. Barrington	Regional District of Central Kootenay
November 17th, 2021 Virtual Attendance	
A. Jensen	Canadian Tire
A. Nygaard	Gibsons Regional District
A. Patrao	Sunshine Coast Regional District
C. Tsang	Staples

D. Murray	Regional District of North Okanagan
D. Santano	District of Summerland
G. Casselman	Sunshine Coast Regional District
K. Day	Ridge Meadows Recycling Society
K. Payne	Amazon
L. Ackerman	City of Richmond
L. Bobanova	Return-It
L. Harrison	Resort Municipality of Whistler
L. Midan	Abbotsford Mission Recycling
M. Filion	PureSphera
M. O'Brien	Scrappys Metal Recycling
M. Wadeson	B.C. Ministry of Environment and Climate Change Strategy
P. Gontier	Guildford Freon Recovery
R. Arce	Regional Recycling
T. Grady	Cariboo Regional District
T. Olfert	City of Quesnel
Online Feedback Submissions	
A. Doi	Metro Vancouver
A. Tucker	Resort Municipality of Whistler
J. Hastings	Nanaimo Recycling Exchange Society
J. Wint	District of Squamish
L. Zapotichny	Regional District of Fraser-Fort George
M. Filion	PureSphera
S. Maxwell and J. Kaminski	Zero Waste BC and Zero Waste Canada
February 1, 2022 Virtual Attendance	
C. Jameson	Indigenous Zero Waste Technical Advisory Group
E. Chu	Indigenous Zero Waste Technical Advisory Group
L. Bobanova	Return-It
L. Phillips	Indigenous Zero Waste Technical Advisory Group
M. Wadeson	B.C. Ministry of Environment and Climate Change Strategy
T. Jones	First Nations Recycling Initiative
February 8, 2022 Virtual Attendance	
A. McLennan	Let's Talk Trash
B. Van Nostrand	Columbia Shuswap Regional District

N. Reddy	City of Richmond
D. Santano	District of Summerland
G. Casselman	Columbia Shuswap Regional District
H. Grskovich	West Coast Metal
L. Bobanova	Return-It
M. O'Brien	Scrappy's Metal Recycling
M. Wadeson	B.C. Ministry of Environment and Climate Change Strategy
N. Hartnett	Regional District of Fraser-Fort George
T. Grady	Cariboo Regional District
T. Uhlmann	Let's Talk Trash
W. Dunn	Capital Regional District
February 15th, 2022 Virtual Attendance	
A. Nygaard	Gibsons Recycling Depot
K. Walker	Summerland Landfill
M. Wadeson	B.C. Ministry of Environment and Climate Change Strategy
T. Barrington	Regional District of Central Kootenay

Polling Results

At the end of the presentations at the Coast Waste Management Association Conference session and the following virtual session, two polling questions were put forward to attendees to gather feedback on particular aspects of the plan. Slido, an online interaction application, was used to facilitate this polling. A total of 17 representatives participated. The results of the polling questions are summarized below.

Figure 1: When it comes to ensuring accessibility, of information and collection facilities, which of the following do you feel are important?

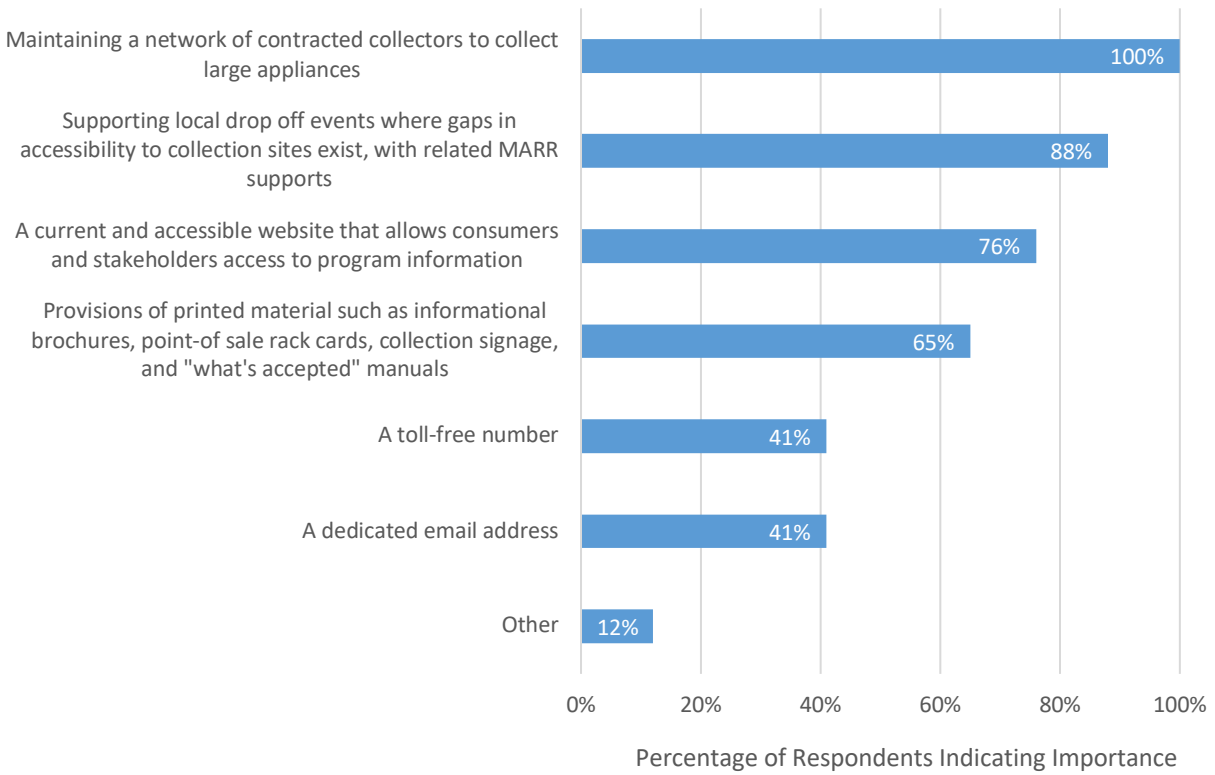
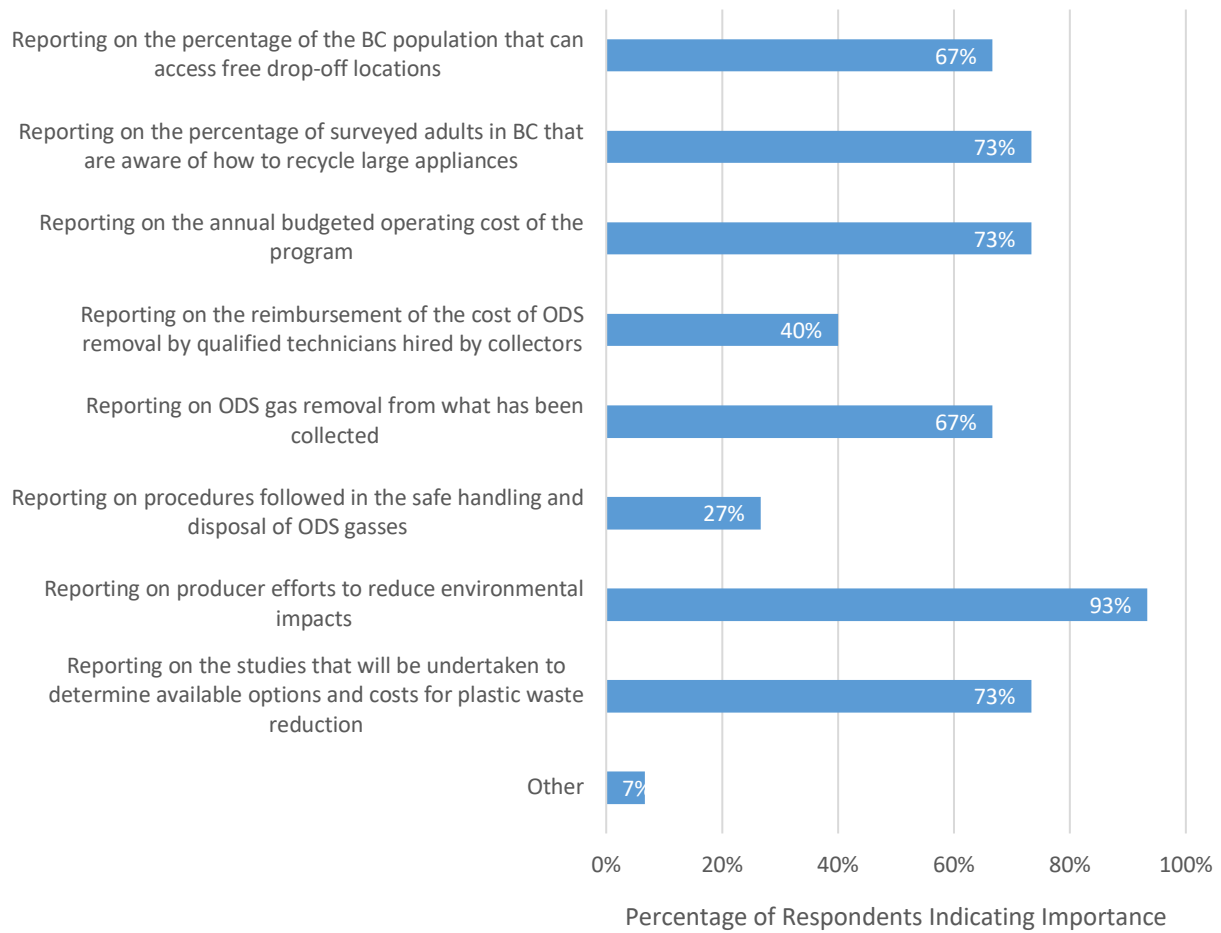


Figure 2: As it relates to what you want to know about the progress being made in keeping with the five-year Extended Producer Responsibility plan, which of the following areas for reporting do you feel are important?



Questions and Comments

Feedback received from those consulted on the draft Extended Producer Responsibility plan is summarized in the following tables, along with MARR’s consideration of and response to the feedback in finalizing the plan.

Table 1: Questions and Comments from Consultations, Grouped by Theme

No.	Organization	Intake Method	Question/Comment	MARR Response
Appointment of the Stewardship Agency				
1.	Zero Waste BC	Written submission	The plan notes that the “MARR’s registered producers represent the prevailing share of producers” which is a good start, but all producers are obligated under the Recycling Regulation to be registered, so the plan should include an action to identify and	There is already an established process in place between all the Extended Producer Responsibility agencies and the Ministry of Environment and Parksto identify any non-member

No.	Organization	Intake Method	Question/Comment	MARR Response
			recruit obligated non- members and to inform the Ministry of non-compliers. It is important both for the accurate collection of sales data as well as to ensure a level-playing field for producers.	producers and report them to the enforcement branch. In addition to this, we also have a process to identify any non-member producers (mostly small retailers) and to sign them up and onboard them as members. We are not aware of any producers in the province that are not members of MARR.
2.	District of Squamish	Written submission	MARR's plan notes that its registered producers do not include all producers, but rather only a large amount of them. MARR should take action to identify and register the obligated non-members, and inform the Ministry of non-compliers.	Please see response to Reference No. 1.
3.	Resort Municipality of Whistler	Written submission	The plan notes that the "MARR's registered producers represent the prevailing share of producers" however, all producers are obligated, so the plan should include an action to identify and recruit obligated non-members and inform the Ministry of non-compliers.	Please see response to Reference No. 1.
4.	Regional District of Fraser-Fort George	Written submission	MARR indicated that their <i>"registered producers represent the prevailing share of producers of major appliances obligated under the B.C. Recycling Regulation."</i> What is done about those producers who are not signed up with MARR to be their Extended Producer Responsibility Agency, to bring them on board? Does MARR have a timeline to get all producers of major appliances to become registered with their program?	Please see response to Reference No. 1.
MARR Governance				
5.	Nanaimo Recycling Exchange	Written submission	Industry led EPR has represented industry. It's fair to say industry would represent industry without a	Thank you for your feedback. This is something we will take under

No.	Organization	Intake Method	Question/Comment	MARR Response
	Society		Producer Responsibility program. A more productive balance of representation could be achieved if EPR boards were mandated to include members representing the environmental purpose of the program.	advisement for future consideration.
6.	Zero Waste BC	Written submission	The MARR Board would ideally represent a wider range of stakeholders including reuse and repair organizations, recyclers, local governments, First Nations and environmental NGOs. Due to the structure of the board being made primarily of representatives of manufacturers, there are conflicting responsibilities of board members to both increase shareholder value through more sales and minimize program costs, and to develop and run a robust program that works towards longer lasting products that can be repaired and reused and minimizes environmental impact. Wider Board representation would mitigate this to some degree.	Please see response to Reference No. 5.
7.	District of Squamish	Written submission	The MARR board should also represent a wider range of stakeholders, including local governments, First Nations, Repair and Reuse organizations, and recyclers.	Please see response to Reference No. 5.
8.	Resort Municipality of Whistler	Written submission	The RMOW would like the LGAC to play a more active role with greater transparency on their recommendations. Details of this committee, including minutes, should be on the MARR website. The MARR Board would ideally represent a broader range of stakeholders, including reuse and repair organizations, recyclers, local governments, First Nations and environmental NGOs	Thank you for your feedback. We will start including the meeting minutes of the Local Government Advisory Committee (LGAC) on the MARR website as of 2022 and will also retroactively post LGAC meeting minutes where possible. With respect to composition of the MARR Board, we will take this under advisement for future consideration.

No.	Organization	Intake Method	Question/Comment	MARR Response
9.	Fraser Valley Regional District	October 20 th Consultation, Chat Function	Does MARR have a Local Advisory Committee such as some other Stewards? If not, will you consider one?	Yes, we have a Local Government Advisory Committee with good representation from the regional districts across the province as well as the First Nations recycling initiative. We meet three or four times a year to provide updates. If there is a local government that would like to be included on our Local Government Advisory Committee, please reach out to us at info@marrbc.ca .
10.	Regional District of Fraser-Fort George	Written submission	MARR should provide the terms of reference for the MARR-Local Government Advisory Council (LGAC), including the decision on which local governments can be a part of the LGAC, when do those appointments change and what is their reporting mechanism to the Board of Directors?	MARR does have terms of reference for the Local Government Advisory Council, and we will publish them on our website. Participation is by request. Please contact MARR at info@marrbc.ca if you are interested in participating.
11.	Zero Waste BC	Written submission	MARR is commended for having the Local Advisory Committee to hear non-steward perspectives. It is hoped that this group can play a more active role with greater transparency on its recommendations and if they are implemented. Details on this committee including minutes should be on the MARR website.	Thank you for your suggestion. We will start including meeting minutes of the Local Government Advisory Council (LGAC) on the MARR website starting in 2022 and will retroactively post LGAC meeting minutes where possible.
Products Covered under the Stewardship Plan				
12.	Comox Valley Regional District	October 20 th Consultation, Chat Function	Are there discussions in relation to the addition to RV ODS items? Most received are ammonia-containing which is a high cost (\$70-\$75/unit).	Unfortunately, the RV, ammonia-containing appliances are not covered under the recycling regulation. Even if they were regulated, it is unlikely that they would fall into the scope of the MARR plan. Some of the ODS technicians in the province that support local government sites do service ammonia-

No.	Organization	Intake Method	Question/Comment	MARR Response
				containing fridges. However, as they are not in the MARR plan, the costs have to be absorbed by the local district, the region or the metal recycler.
13.	Regional Recycling	November 17 th Consultation, Chat Function	Under the products covered, it lists commercial items and gas items, is ammonia now included?	Ammonia products are not included in the MARR plan. We only take appliances from commercial sources if they are a residential-like appliance. We do not accept commercial appliances like rooftop air conditioners or coolers. As noted earlier, there are some RV refrigerators that are ammonia-powered, but they are not currently regulated and are not a part of the MARR program.
14.	Cariboo Regional District	November 17 th Consultation, Chat Function	How are RV ammonia appliances not "residential"? Does that mean that ODS units from RVs are also not included in the MARR program?	When we say residential, we mean the appliances in your home. A resident may own an RV, but an RV appliance is not the same as a residential home appliance.
15.	Zero Waste BC	Written submission	MARR is commended for the range of the products accepted, particularly the ones that use dual fuels, are similar to residential models but sold to ICI settings and used for refrigeration or freezing. We encourage MARR to also include the many products that are not currently part of the program such as units that use ammonia, battery, 12 Volt DC power or thermoelectric systems, and those coming from boats, RVs and trailers. An exploration of what is needed to develop capacity for adding hot water heaters, heat pumps, other types of air conditioners, other types of dehumidifiers, portable cooktops, and furnaces should be undertaken.	As these products are not currently covered under the scope of MARR, this question should be addressed to the BC Ministry of Environment and Parks or the product's appropriate Extended Producer Responsibility agency. For example, small thermoelectric appliances may be covered by the Canadian Electrical Stewardship Agency (CESA) and the RV appliances might be covered by automotive recycling programs. Some of the other items you mention like heat pumps, water

No.	Organization	Intake Method	Question/Comment	MARR Response
				heaters, furnaces and large air conditioners are already covered by another program (Heating, Refrigeration and Air Conditioning Institute of Canada, or HRAI).
16.	District of Squamish	Written submission	MARR is commended for the range of the products accepted, particularly the ones that use dual fuels, are similar to residential models but sold to commercial settings and used for refrigeration or freezing. We encourage MARR to also include the many products that are not currently part of the program such as units that use ammonia, battery, 12 Volt DC power or thermoelectric systems, and those coming from boats, RVs, trailers and other types of mobile housing.	Please see response to Reference No. 13.
17.	Resort Municipality of Whistler	Written submission	We encourage MARR also to include the many products that are not currently part of the program, such as units that use ammonia, battery, 12 Volt DC power or thermoelectric systems, and those coming from boats, RVs and trailers. MARR should explore what is needed to develop the capacity for adding hot water heaters, heat pumps, other types of air conditioners such as ductless air conditioners, other types of dehumidifiers, portable cooktops, and furnaces. Finally, an analysis should be done of what ICI products are not included.	Please see response to Reference No. 13.
18.	Zero Waste BC	Written submission	An analysis of what institutional and commercial products are not included should also be done as a step towards including these in the program as well. The program should aim to be comprehensive in its scope of materials to avoid confusion for consumers who may think all major appliances are included and to reduce the waste	As MARR is specifically a residential recycling program, commercial and institutional products are not covered under MARR's scope. This comment would be better addressed to the BC Ministry of Environment and Parks or the Extended Producer

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			<p>flowing from this sector by ensuring the full suite of products is covered between all of the EPR programs. Failing that, the Ministry should expand the scope in the Recycling Regulation to ensure producers of those products are taking responsibility for their products.</p>	<p>Responsibility agency responsible for commercial and institutional refrigerators, which we believe may be the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI).</p>
19.	District of Squamish	Written submission	<p>The program should aim to be comprehensive in its scope of materials to avoid confusion for consumers who may think all major appliances are included and to reduce the waste flowing from this sector by ensuring the full suite of products is covered between all of the EPR programs. Failing that, the Ministry should expand the scope in the Recycling Regulation to ensure producers of those products are taking responsibility for their products. This confusion puts extra burden on collection sites, as the consumer awareness is not in place to differentiate between programs in and out of scope of the program. For example, products containing ammonia are often left at the Squamish Landfill, which means we then pay for their proper removal and disposal. A similar situation arises from fridges from mobile homes and recreational vehicles, which puts further burden on both the consumer and the collectors.</p>	<p>Please see responses to Reference No. 13 and 16.</p>
20.	Resort Municipality of Whistler	Written submission	<p>The program should be comprehensive in its scope of materials to avoid confusion for consumers who may think all major appliances are included. Failing that, the Ministry should expand the scope in the Recycling Regulation to ensure that producers of those products are taking responsibility for their products.</p>	<p>Please see responses to Reference No. 13 and 16.</p>

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Stakeholder Consultation				
21.	Regional District of Fraser-Fort George	Written submission	<p><i>“During 2021 and 2022, MARR undertook a consultation process that provided meaningful opportunities for public consultation and comment.”</i></p> <p>Does this mean MARR will have further opportunities for consultation and comment after the November 19, 2021 submission deadline?</p>	Yes, we plan on holding further public consultation if there are any material changes to the plan based on feedback received. If so, we will continue public consultation on the sections of the plan that have changed.
Collection System				
22.	Metro Vancouver	Written submission	MARR should be commended for the notable improvement of the program over the past several years, including adjusting financial incentives for collectors, collection monitoring of program materials and overall streamlining of procedures. In addition, it should be noted that MARR is an organization that has become responsive to stakeholders and has adapted practices and approaches based on feedback.	Thank you very much.
23.	Regional District of Fraser Fort George	February 8 th Consultation, Verbal Feedback	MARR has been great to work with.	Thank you.
24.	Let’s Talk Trash	February 8 th Consultation, Verbal Feedback	Just a comment. New to MARR this year. Came to a good agreement with a remote island community. Seamless, easy to report.	Thank you.
25.	Columbia Shuswap Regional District	February 8 th Consultation, Verbal Feedback	Echo sentiment. Great to work with.	Thank you.
26.	Nanaimo Recycling Exchange Society	Written submission	<p>Recycling Regulation 8.2(d)a requires description of how the collected product was managed in accordance with the pollution prevention hierarchy.</p> <p>MARR is to be commended on progress since 2019, specifically for the significant reported increase in certified collection sites requiring</p>	Thank you.

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			<p>MARR's Processing Standard. It is significant that MARR has provided oversight of the collection sites, that MARR has mandated the Processing Standards, and that MARR has secured reporting from data on units collected and emptied of ODS.</p>	
27.	Regional District of Fraser-Fort George	Written submission	<p><i>"2. Through a network of approved collectors and community partners, a commitment to enhance the performance of the current system by paying the cost for...</i></p> <p><i>...c) transportation of appliances to a processor should the metal value of the end-of-life appliances not cover transportation costs."</i></p> <p>Extended Producer Responsibility is an approach to recycling that requires producers, such as manufacturers, distributors, and retailers to take responsibility for the life cycle of the products they sell, shifting the responsibility of those products away from local governments. If MARR has agreements with local governments, MARR should contribute to offset the cost of transportation of appliances to a processor regardless of the metal value.</p>	<p>MARR currently has a transportation offset clause included in each agreement with collectors that ensures transportation costs are covered and paid for by MARR.</p>
28.	District of Squamish	Written submission	<p>Space at many smaller regional landfills, such as the Squamish Landfill, is limited. MARR products are inherently large and take up significant operational space in diversion areas. Space at many of the regional landfills and transfer stations is very limited, and there is increasing pressure from a growing number of EPR programs, and citizen desire to divert as many materials as possible. It is important that landfills and the</p>	<p>Our collection agreements are negotiated on a per contract basis to ensure that collectors are compensated for their costs.</p> <p>The majority of processors and all of our collectors have signed the MARR Processing Standard and are obligated to accept and process all MARR products.</p>

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			<p>existing network are properly compensated for the space and operations that all of the products that are delivered by residents under the MARR program. This should include payment to collectors for any product forms that have low metal content or material value to ensure items such as dishwashers are as likely to be collected as other products. The tailoring of solutions to meet the needs of local governments is a very positive step.</p>	
29.	Zero Waste BC	Written submission	<p>The existing market-based system relies on several factors: the historic provincial mandate for all landfills to collect major appliances separately resulting in an existing network, the high content of metal of major appliances in the past, and the market value of metal. These factors cannot be relied on going forward. Local governments and others operating waste facilities should be compensated for their space and labour now that a program exists to ensure they continue to want to deliver and improve this service for the program and that it is not subsidized by taxpayers. Many products have declining percentages of metal and some such as dishwashers, may be predominantly made of plastic providing little incentive for collection. The market value of metal fluctuates and due to the transport distances to a viable market (particularly where ferries are also needed), fees paid to collectors and processors may not be high enough in more remote communities to compensate for their services. While collection can be a revenue-generating activity as noted, it is not guaranteed and not in all locations.</p>	<p>The process of negotiating each contract with collectors ensures that the costs to depot operators, local governments, and other MARR collection sites is covered to their satisfaction, and that each site will accept all MARR products free of charge.</p>

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			<p>Given that, the program's commitment to a robust network of collection facilities with no cost to the public is a positive step along with payment for management, reporting, administration, collection, ODS removal and transport when necessary. This should include payment to collectors for any product forms that have low metal content or material value to ensure items such as dishwashers are as likely to be collected as other products. The tailoring of solutions to meet the needs of local governments is also a very positive step.</p>	
30.	Caribou Regional District	February 8 th Consultation, Verbal Feedback	Is there payment for mercury switches?	Yes, ODS service technicians receive a fee per unit for proper handling of the materials. There would also be payment for the shipment to a processing facility and proper disposal of mercury required.
31.	Columbia Shuswap Regional District	February 8 th Consultation, Verbal Feedback	Are you moving towards standardized requirements for ODS contractors or MARR administering those agreements across the province?	We are working on standardization of contractors with ODS removal in accordance with our standards. A trained expert in ODS removal has been going into the field to make sure the technicians are doing it properly, while giving advice. MARR has taken over the ODS contract for one collector in 2022, but would consider this at the pilot stage. MARR would consider handling this directly for other jurisdictions (including CSRD) in the future.
32.	Let's Talk Trash	February 8 th Consultation, Verbal Feedback	The ODS training that MARR offers, does that cover all certifications required to do ODS removal on	Another Extended Producer Responsibility program in the province (HRAI) provides a

No.	Organization	Intake Method	Question/Comment	MARR Response
			MARR units? Or, is additional training required?	certification course across the country. MARR requires that all technicians working for them or their collectors have taken the course. MARR prefers that a third party come in to do it more efficiently.
33.	City of Quesnel	November 17 th Consultation, Chat Function	Can we use local ODS capture techs who cost a couple dollars more per appliance instead of a cheaper tech from out of town? Or do we need to always use the low bid?	You do not always need to use the lowest bid, MARR will reimburse the cost of your ODS technician (within reason). If the cost of your preferred technician is significantly higher than the market rate, we would engage in a discussion on this, particularly what the operational benefit would be and to assist in negotiating with the service provider.
34.	PureSphera	November 17 th Consultation, Chat Function	You are talking always about ODS gases being removed but are you considering also HFC's which are not ODSs but potent GHG gases?	Hydrofluorocarbons (HFCs) have been used for the past 20 years or more. R134A is the most common hydrofluorocarbon in use, and while it is not an ozone depleting substance, it does have a global warming potential of about 1430 instead of the 10910 that is found in the previously used R12. Although there is a relatively small global warming potential, those gases are being collected, removed from the system by a technician, and brought to a refrigerant recycling company. All of our ODS collectors must provide documentation proving that they brought the gas to a proper recycling company.

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Drop-off Collection Sites				
35.	Fraser Valley Regional District	October 20 th Consultation, Chat Function	There are over 200 collection facilities. I know you have worked hard to get local government on board in the past few years. What percentage of local government facilities are part of the MARR collection facility?	Of all the regional districts in British Columbia, there is only one left, Northern Rockies, that does not have a MARR collection site in their region. There is currently a collection site that accepts major appliances in the region, it just is not part of the MARR program yet. About three quarters of our collection network are municipal or regional governments.
36.	Zero Waste BC	Written submission	While the maps of the collection sites are good, it would be helpful if the website showed a list of the sites sortable by community name or regional district to determine where gaps may be (including the name of the community would also be helpful in the annual report). We applaud the recent gain in the number of collection sites noted in the 2020 annual report.	This information is contained in our annual report, which includes the number of collection sites by regional district and a link to the interactive map on our website. The interactive map shows the distance around each site, illustrating any coverage gaps. You can also search the map by regional district.
37.	Nanaimo Recycling Exchange Society	Written submission	MARR is to be commended on the revised site finder that seems to identify only the contracted sites. Maybe add a note on the site for consumers that taking large appliances elsewhere does not guarantee free or safe ODS management and it could harm the environment.	This message is relayed to consumers through our communications material which highlight the importance of bringing end-of-life appliances to a registered MARR collector.
Collection Events				
38.	Indigenous Zero Waste Technical Advisory Group	February 1st Consultation, Verbal Feedback	Makes a lot of sense (to keep things flexible and non-prescriptive). Happy to work with MARR. With the FNRI (First Nations Recycling Initiative) group, we sometimes call multiple times with no replies. With MARR, it's been great. "Let's go, let's get it done." Been working great. Like working with you. Restrictions with other	Thank you. We are happy to support clean up efforts and have Bill (field services) to support if needed with boots on the ground.

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			organizations need to be looked at. Clean up with other communities, sometimes there for a week. Need to get it cleaned up now. With MARR, one phone call and we can get it done.	
39.	Indigenous Zero Waste Technical Advisory Group	February 1st Consultation, Verbal Feedback	I remember a time before IZWTAG and FNRI. It has been a complete 180. With respect to getting large appliances out of remote communities, it has been fantastic, awesome. Really acknowledge that wholeheartedly.	Thank you very much.
40.	Indigenous Zero Waste Technical Advisory Group	February 1st Consultation, Verbal Feedback	There are three main types and combinations of systems within remote First Nation communities: (1) transfer stations like Bella Bella; (2) mobile depots that operate a cube van with bags for weekly recycling and (3) ecostations that provide limited collection in the community (e.g. Recycle BC items, small appliances, electronics).	Our goal is to remain flexible in supporting remote communities. MARR will fund and support First Nations recycling initiatives across all three types of systems, as well as hybrid ones. Collection would be expensive on a per unit basis but not as a percentage of our overall budget. There are a few different arrangements that we could look into to formalize this. We will continue this discussion and put a plan in place to make collection events and clean up events more regular.
41.	First Nations Recycling Initiative	February 1st Consultation, Verbal Feedback	Great that there are a number of activities that have coincided. There are other communities close by that would also benefit. Logistically, would be great to combine material for collection events or to coordinate with communities situated close by/close together. Bins that could be utilized by multi communities to benefit the whole region. One way to remove material is through better coordination.	MARR is open to being the main point of contact and can reach out to other Extended Producer Responsibility programs to coordinate material pick up. MARR will also participate in ongoing discussions through the IZWTAG and Recycle BC working group.
42.	Zero Waste	Written	Collection events should be seen as a stop gap measure for up to a year	MARR has an extensive collection network which

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	BC	submission	<p>but after that, the program should set up its own permanent collection system if no alternative can be contracted. It is unreasonable to expect that someone who is moving or has bought a new item will keep the old one in their home, taking up a fair amount of space, until an event occurs. The program should not rely on local governments or community groups to arrange collection events. Instead, permanent options for even small communities should be set up.</p> <p>Engagement with IZWTAG and the FNRI are suitable ways to ensure that First Nations' communities also receive service suited to their needs, which again, may not rely on community collection events unless that is the wish of the communities.</p>	<p>allows 95% of the population to drop off an appliance within 20 km of their home. We work with remote communities individually to collect end of life appliances.</p> <p>MARR is a member of the First Nations Recycling Initiative and associate member of the Indigenous Zero Waste Technical Advisory Group (IZWTAG) and we do provide service to remote communities.</p>
Accessibility to Collection Sites				
43.	Indigenous Zero Waste Technical Advisory Group	February 1st Consultation, Verbal Feedback	<p>I appreciate that you are not using SABC's definition of coverage and are looking instead at what's the best we can do. In the past, we have given Bella Bella all the info about the MARR program. Difference this time is you went there. Now that there is personal understanding, a relationship, trust, and they can join as a collector. Given the immense cost with removal in certain areas of the province, how would you manage ongoing removal to avoid pile up?</p>	<p>Thank you. Bella Bella is now a MARR collector. Fox's Disposal will be leaving a bin there. Once ODS is drained, the appliances can be placed in the bin. The appliances can be taken out of the scrap metal pile, as feasible, and then they can get paid by MARR for reporting them. Once it's full, Fox's Disposal can haul the bin out and replace with a new one.</p>
44.	Nanaimo Recycling Exchange Society	Written submission	<p>Recycling Regulation 5.1(c) states that plans must adequately provide for</p> <p>(iii) reasonable and free consumer access to collection facilities or collection services,</p> <p>(iv) making consumers aware of</p>	<p>It is included within each of our contracts with collectors that they are not allowed to charge for the drop off of a MARR appliance. Each of our registered collection sites is obligated to take MARR appliances at no charge.</p> <p>MARR's program plan is</p>

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			<p>(A) The producer’s extended producer responsibility program,</p> <p>(B) The location of collection facilities or the availability of collection services,</p> <p>MARR is to be commended for what seems like much improved consumer awareness of sites, and better enforcement of the free drop-off requirement at contracted sites. Although there are still sites that charge for drop off, they seem to now be the exception rather than the rule.</p> <p>Some places, even those associated with Regional Districts are charging for drop-off of more than 1 or 2 items containing ODS in a single visit.</p> <p>Metal collectors, for example, ABC Metal pays the market price of metal drop off for each unit, except if the ODS has not been drained. This makes two problems: one is it encourages uncertified emptying of fridges before drop-off in order to receive the market rate. The other problem is that it disincentivizes drop off at these MARR certified metal recyclers. MARR should be covering the cost of ODS removal at all collection sites, including metal recyclers, and the metal recycler should carry on business as usual and pay the customer.</p> <p>Trail appliances picks up with a purchase of a new fridge, but charges \$35. MARR should be reimbursing Trail to pick up and transport to a metal recycler where no further transport is needed. This same program can be applied in remote areas to ensure management under the MARR program. MARR could consider a no purchase needed sub-contract</p>	<p>based on the drop off of our program products to a MARR collection facility. Any third-party transportation and pick up services are out of the scope of the MARR program.</p>

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			arrangement with Trail to transport ODS containing materials to metal recyclers because this is an end market. This would raise convenience and proper management of recycling such heavy ODS containing products.	
45.	Zero Waste BC	Written submission	MARR is to be congratulated for not using the SABC accessibility standard, but it should be up to the communities themselves to determine if the 20 km range is suitable. The target for coverage should be that 100% of the population has access to either a collection depot, or a mail-back or ship-back system (free of charge to the end user). Programs should provide service in all municipalities and if no service provider can be contracted, the program itself should set up the collection depot. The program should work with the BC Extended Producer Responsibility Council and the Indigenous Zero Waste Technical Advisory Group to determine the underserved communities. The program will be able to determine the balance between when a permanent depot location is best or if offering free pick-up services (or “ship-back” type options) to small locations is more cost effective. It should be as easy to return an item for collection as it is to purchase a new one. Pick-up services offered as part of the delivery are a good model but there should not be an extra charge for the pick-up.	<p>We feel that 20 km is a reasonable standard and improves upon the existing Stewardship Agencies of BC (SABC) guideline. It also improves upon services levels provided by many federal, provincial, and local services.</p> <p>MARR’s program plan is based on drop off at a MARR collection facility. Any third-party transportation and pick up services are out of the scope of the MARR program.</p>
46.	Fraser Valley Regional District	October 20 th Consultation, Chat Function	Out of 27 regional districts, how many of those 27 do not meet the free and reasonable access to collection, and what does reasonable mean according to MARR?	The method we use demonstrates that 95% of the BC population is covered by a collection site. We do not measure by regional district. We are committed to constant growth of our collection network and until we have 100% coverage of our

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				<p>network, we will continue to use collection events and other methods to retrieve products that are not currently covered.</p> <p>In the past we have used the Stewardship Agencies of BC (SABC) definition of “reasonable access” which was within half an hour of driving distance. However, there were challenges with this as driving times can fluctuate. We now use 20 km.</p>
Tracking Product Pathways Not Directly Managed by the Stewardship Program				
47.	Metro Vancouver	Written submission	(Page 11) “It is our opinion that the vast majority of appliances are recycled through the MARR network and the remaining recycled through the pathways not managed by the stewardship program.” Although this statement likely represents the current situation, it is possible that products arrive at MARR facilities or other metal recyclers through clean-up activities, for example due to instances of illegal dumping. Will MARR consider researching these pathways to determine the estimated numbers of appliances managed in this manner?	We plan to continue to communicate with the public to ensure broad consumer awareness of how there are free drop off locations for MARR appliances that covers the majority of the province (95% of the population).
48.	Zero Waste BC	Written submission	Other product pathways are noted in the plan. While they are not currently connected to MARR, we encourage MARR to engage with repair services, insurance and restoration companies, peddlers and other local governments for both collection and other actions noted under section 11.	Thank you for your comment. We engage with these stakeholders on a regular basis and will continue to do so.
49.	Zero Waste BC	Written submission	The ongoing use of waste composition audits is good, for which MARR should be contributing to the costs. The results should be published on the MARR website.	MARR subsidizes the waste audits through our membership in the Stewardship Agency of BC (SABC). If a local government would like to

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				<p>conduct a waste audit and would like funding support, please contact SABC.</p> <p>While the full reports are unable to be published, MARR will post the results of the waste audits that we participated in on the MARR website.</p>
50.	Regional District of Fraser-Fort George	Written submission	<p>Even though MARR has had no reported instances of major appliances in the waste stream from local government waste audits, from managing solid waste facilities, the Regional District of Fraser-Fort George can demonstrate that such appliances still end up in the waste stream. Contractors and staff at solid waste facilities have had to remove major appliances from the landfill, and direct site users to place their major appliances in the designated areas. More consumer awareness is needed.</p>	<p>Through our contracts with collectors, any landfills that are MARR collection sites are compensated for properly managing the material at their site.</p> <p>We will continue to increase our consumer awareness and education efforts in this area.</p>
51.	Zero Waste BC	Written submission	<p>The programs should also start tracking illegal dumping and develop strategies to reduce large appliances being dumped which may include offering free pick-up services.</p>	<p>The MARR program offers free drop off of major appliances in order to discourage anyone from illegal dumping. We also carry out annual surveys to track progress. Any third-party transportation and pick up services are out of the scope of the MARR program.</p>
Consumer Awareness				
52.	District of Squamish	Written submission	<p>Consumer awareness needs to be expanded among consumers and waste removal contractors about the MARR program, and the depot network. While most residents do not regularly need to dispose of major appliances, not all Waste and Junk Haulers, who do regularly dispose of major appliances, are aware of the program. This increased awareness needs to be</p>	<p>Our goal is to bring awareness to the general population as all stakeholders to the MARR program are subsets of the general population. By reaching the public more broadly, we are also reaching waste and junk haulers and others who may be involved in the</p>

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			<p>the responsibility of MARR and cannot rely on landfill operators who are trying to keep these products out of their landfills.</p>	<p>system. We also advertise in trade journals to generate awareness.</p> <p>Through our contracts, landfill operators that participate as collection sites are also compensated to manage MARR appliances at the landfill.</p>
53.	Zero Waste BC	Written submission	<p>The 2018 BC survey noted that only 65% of BC resident were aware they could recycle large appliances and only 49% said they recycled or sometimes recycled large appliances. This combined with the fact that few are showing up in the waste composition audits shows the local government systems for diverting these items at the point of disposal likely plays a key role. It also may account for the large appliances that are illegally dumped.</p>	<p>The survey data referenced is out of date, and improvements have been made since 2018. Annual surveys on consumer awareness are conducted with the results published in MARR's annual report.</p> <p>The MARR program offers free drop off of major appliances accessible to 95% of the BC population in order to discourage anyone from illegal dumping.</p>
54.	Zero Waste BC	Written submission	<p>The annual report for 2020 noted an awareness that products could be recycled of 80% but a program awareness of 73%. The goal should be to get 95% of the population aware of the program by 2024 (and later 100%). To do otherwise is to continue to externalize costs to the public and the environment. The program could also pursue disposal bans with local governments as a way to ensure consumers do the right thing but also that they are aware that throwing these products away is not appropriate.</p> <p>To achieve this MARR will need to enhance its existing consumer awareness approach and its work with partner stakeholders. The direction to work with other Extended Producer Responsibility agencies and recover remote stockpiles is good but more action is likely needed and can be</p>	<p>We believe it is more important for British Columbians to know that they can recycle major appliances rather than knowing the brand name of the agency responsible for it. We also partake in waste audits on an annual basis and have not seen MARR products in these reports. Additionally, a program awareness target of between 82% and 90% is considered a world class standard. We believe it would be fiscally irresponsible to pursue awareness beyond that level.</p> <p>We plan to publish more research as it relates to our existing consumer</p>

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			determined through annual surveys of consumer awareness to see if the program is on track to meet the 95-100% awareness target. The surveys should include more detailed analysis for certain products or audiences after new campaigns to determine if they were effective or if they should be adjusted. In addition, the surveying should start to look at what awareness there is for reuse, repair and refurbishment of products.	awareness survey in our annual reports.
55.	Resort Municipality of Whistler	Written submission	The RMOW would like to see an increase in consumer awareness advertisement in Whistler as it has not been observed at this time.	MARR conducts local consumer awareness in areas of the province that have MARR collection sites, including supporting community calendars and recycling calendars. Please reach out to us and we will be happy to help you. At the time of our last campaign, the Resort Municipality of Whistler may not have been a MARR collection site yet. Please contact info@marrbc.ca for further information.
Management of Program Costs				
56.	Nanaimo Recycling Exchange Society	Written submission	<p>Recycling Regulation 5 (1) states that approval of a plan requires</p> <p>(c)the plan adequately provides for</p> <p>(i)the producer collecting and paying the costs of collecting and managing products</p> <p>within the product category covered by the plan, whether the products are currently</p> <p>or previously used in a commercial enterprise, sold, offered for sale or distributed in</p> <p>British Columbia,</p> <p>(vii)eliminating or reducing the environmental impacts of a product throughout the</p>	<p>MARR adjusts the Administrative Program Fee (APF) on a regular basis in order to maintain a reserve fund of one year's operating expenses.</p> <p>Part of this new plan is to research options for non-metal components. Should those options result in higher costs, the APF will be revisited again.</p>

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			<p>product's life cycle, and</p> <p>(viii)the management of the product in adherence to the order of preference in the pollution prevention hierarchy,</p> <p>Why has MARR reduced the fees when there is no apparent solution for any non-metal components? Metal high-grading does not sufficiently address the waste from large appliances. Funds exist to try something.</p>	
57.	District of Squamish	Written submission	<p>The program should plan to develop differential fees based on certain criteria such as lifespan, ease of repair, availability of parts, use of easy to recycle materials (versus materials that are wasted by being burned for energy), etc. to drive product design change as intended by the Canadian Council of Ministers of Environment. The fees should also be set at a higher level to pay for the improvements needed in ensuring high collection rates, providing more comprehensive collection networks or systems, enhancing awareness and fulfilling the mandate for redesign, reuse and repair.</p>	<p>Differential fees would be difficult administratively as it would be based on variable and/or subjective criteria. For example, it would be difficult to determine the lifespan of each appliance sold by various producers, especially when these products have long lives. The other criteria mentioned (ease of repair, availability of parts) would also be variable and subjective.</p>
58.	Zero Waste BC	Written submission	<p>The program should plan to develop differential fees based on certain criteria such as lifespan, ease of repair, availability of parts, use of easy to recycle materials (versus materials that are wasted by being burned for energy), etc. to drive product design change as intended by the Canadian Council of Ministers of Environment. The fees should also be set at a higher level to pay for the improvements needed in ensuring high collection rates, providing more comprehensive collection networks or systems, enhancing awareness</p>	<p>Please see responses to Reference No. 43 and 44.</p>

No.	Organization	Intake Method	Question/Comment	MARR Response
			<p>and fulfilling the mandate for redesign, reuse and repair.</p> <p>Given the decrease in fees [in 2021 relative to 2020] and the fact that the fees relative to the prices of new products is exceptionally low, there is a lot of room to increase the fees to greatly improve program performance and ensure that all service providers are adequately compensated. Differential fees should be set up to reward those with more sustainable products while asking those with less sustainable products to pay more.</p>	
59.	PureSphera	Written submission	<p>The plan could refer to the existence of such legislation and the potential of several proven technologies that can maximize the capture of halocarbons; the recycling of the oil; of the insulation foam (polyurethane); of the plastics; of the compressors and ferrous and non-ferrous metals. Appendix C refers to different existing environmental regulations and the Quebec example of such. MARR could increase the public awareness of such options and encourage the regulators to consider such.</p>	<p>There are various regulations and methods for recycling appliances in Canada as well as other parts of the world. This is part of the research MARR intends to undertake to come up with options.</p> <p>Once our research is completed and a decision is made, we will work towards putting that plan in action.</p>
Management of Environmental Impacts				
60.	District of Squamish	Written submission	<p>In our opinion, this Section should be the most robust and innovative. It is time to move past business as usual and move the dial on the reduction, repair and reuse. With the current state of the climate and our limited resources, it is up to the Province, through the Recycling Regulation to push EPR programs to ensure that their programs are focusing on the top of the pollution prevention hierarchy, and not relying on recycling or disposal. EPR programs such as MARR are in a unique position to drive such programs, as they have robust</p>	<p>MARR is a Extended Producer Responsibility agency that deals with end-of-life major appliances.</p> <p>For safety reasons, we only promote the refurbishment and repair of appliances by qualified technicians.</p> <p>We also provide regular feedback to our producers on public sentiment/concerns as it relates to repair and reuse.</p>

No.	Organization	Intake Method	Question/Comment	MARR Response
			collection networks, are audited by 3rd parties and are regulated by the Province.	
61.	Nanaimo Recycling Exchange Society	Written submission	<p>Recycling Regulation (3) states that</p> <p>For the purpose of subsection (1) (c) (viii), the pollution prevention hierarchy is as follows in descending order of preference, such that pollution prevention is not undertaken at one level unless or until all feasible opportunities for pollution prevention at a higher level have been taken:</p> <ul style="list-style-type: none"> (a) reduce the environmental impact of producing the product by eliminating toxic components and increasing energy and resource efficiency; (b) redesign the product to improve usability or recyclability; (c) eliminate or reduce the generation of unused portions of a product that is consumable; (d) reuse the product; (e) recycle the product; (f) recover material or energy from the product; (g) otherwise dispose of the waste from the product in compliance with the Act. <p>“MARR strives to promote the principles of the pollution prevention hierarchy where technically feasible and economically viable, to divert as much material as possible from the waste stream.”</p> <p>There is no contingent of “technically feasible” or “economically viable” in the regulation. Products are to be managed according to the pollution prevention hierarchy, and annual reports must demonstrate compliance.</p> <p>The MARR plan continues to ride</p>	<p>The appliances have to be certified by a qualified technician once repaired or refurbished to ensure they are safe to use. From that perspective, it must be technically feasible for the appliance to be reused.</p> <p>The cost of repair and refurbishment must also be considered in evaluating feasible options.</p> <p>In this Extended Producer Responsibility plan, MARR intends to study the possibilities and available options in order to develop a plan on how to maximize our performance when it comes to managing the end fate of materials.</p>

No.	Organization	Intake Method	Question/Comment	MARR Response
			<p>the coat tails of the metal recycling industry, and thereby accepts the constraints of processing the non-metal components. It is time MARR took responsibility for the actual products in the program, especially when there are existing programs for recycling such products as plastic.</p> <p>Given there are existing programs for recycling non-metal components, it is not true that</p> <ul style="list-style-type: none"> • “The imposition of a traditional stewardship model on the pre-existing market-based system has the potential to cause significant economic dislocation for businesses operating in that system, confusion for consumers and ultimately reduced environmental performance.” <p>Consider an adjustment to the supply chain model: shred or dismantle appliances prior to the hand-off to the metal recycling industry. This would eliminate transport cost complexities. Revenue is collected at point of purchase for this purpose.</p> <p>Consider providing data driven information to the industry about the state of global recycling and the advantages of using 100% recyclable materials. EPR should be concerned with End of Life environmental impact, and not distribution supply chain costs reduced by lightweighting.</p> <p>Discontinue light-weighting of products with materials that result in pollution. Perhaps light-weighting is not the direction to go with appliances: consider promoting design with durable materials consistent with rigors of disassembly and repair.</p>	
62.	Zero Waste BC	Written submission	The actions taken by MARR to responsibly manage ODS are	Statistically, we are seeing there are some outlier sites

No.	Organization	Intake Method	Question/Comment	MARR Response
			<p>suitable. The 20% figure for appliances without ODS remaining seems high and perhaps MARR could also take actions to reduce this percent across all collectors by addressing the factors that lead to this. This could include encouraging better design of products to reduce wear, tear and damage; instructions for better handling and care of appliances to avoid accidental release; and incentives for collection of intact appliances to avoid inappropriate release.</p>	<p>that are higher than 20% and our goal is to research and determine what the cause is at these facilities first. This will give us insight into what is causing the ODS to be removed prior to arriving at the MARR site that may have implications/learnings for other sites.</p> <p>Some initial investigations have shown that the appliances arriving at the MARR collection sites with the ODS removed were done by a qualified technician prior to shipping to the collection site and not necessarily resulting with the gases being released into the environment.</p>
63.	Resort Municipality of Whistler	Written submission	<p>The actions taken by MARR to responsibly manage ODS are suitable. The 20% figure for appliances without ODS remaining seems high and perhaps MARR could take steps to reduce this percent across all collectors by addressing the factors that lead to this.</p>	<p>See response to Reference No. 49.</p>
64.	Regional District of Fraser-Fort George	Written submission	<p><i>“Based on historic collection reports MARR estimates that 20% of refrigerated appliances that reach end-of-life have no refrigerant and lack the ability to cool. This can be from natural wear and tear, damage from relocation or other causes. MARR will investigate collectors that exceed this threshold of ODS empty and attempt to determine the root cause of the empty units if possible.”</i></p> <p>Where are these historic collection reports that MARR is basing the 20% rule off? Were the reasons for the 20% historic estimate investigated? Why did MARR</p>	<p>The ODS technicians that service the appliances at MARR collection sites must record whether the appliance had the gas removed prior to him/her servicing it. As mentioned in the response to Reference No. 49, we are beginning to investigate the sites with the highest percentages first to determine root causes.</p>

No.	Organization	Intake Method	Question/Comment	MARR Response
			choose such a high threshold when the known negative environmental impacts of improper drainage of ODS materials is well documented?	
65.	Regional District of Fraser-Fort George	Written submission	<p>Since signing up with MARR in 2019, the RDFFG has had 2 instances of collecting MARR ODS appliances without ODS.</p> <p>Setting a 20% threshold does not adequately manage the environmental impacts these appliances have when they are not properly managed. The 20% rule should be lowered to 5% minimum with descending targets. When it is set lower, it will allow MARR to determine why appliances are coming to their collection sites with the ODS removed, and from there MARR can better determine best practices to mitigate these reasons.</p>	Some initial investigations have shown that the appliances arriving at the MARR collection sites with the ODS removed were done by a qualified technician prior to shipping to the collection site and not necessarily resulting with the gases being released into the environment. However, this is continuing to be explored by MARR, regardless of the threshold chosen.
Reuse and Recycle				
66.	City of Quesnel	November 17 th Consultation, Chat Function	Any liability concerns with allowing customers to scavenge doors, trays, tubs, or other parts from appliances on site? We allow it as it supports the three Rs.	With regards to scavenging inner parts, MARR does not have any concerns with that. It may be of greater concern to those managing the collection site(s). Where we do need to be careful is when it comes to repairing the electrical components of appliances. In these cases, we promote the use of a licensed technician.
67.	City of Kamloops	October 20 th Consultation, In-Person	Are there any sort of provisions or support to help repair more appliances when they break-down?	MARR supports the repair of appliances as do our producers, but we do not want to encourage consumers to take their appliances apart and attempt to repair it themselves. Our advice is that if there is a problem with an appliance, to call a licensed repair technician.
68.	City of	October 20 th Consultation,	Is there access to repair manuals and resources for these	Yes, producers have resources for the repair

No.	Organization	Intake Method	Question/Comment	MARR Response
	Kamloops	In-Person	technicians?	technicians who service appliances.
69.	District of Squamish	Written submission	In some Communities, like Squamish, community events, without the support of MARR, have been established to enable the repair of appliances, but without the support of the producers creating repair guides, making products easily repairable, making replacement parts available, and providing training on repair, these efforts will always be limited. MARR should take a leadership role in making product repair more accessible.	Major appliances are high voltage and improper repair by unqualified personnel is a safety hazard. MARR recommends that all repairs be carried out by a licensed and qualified technician.
70.	City of Nanaimo	October 20 th Consultation, In-Person	When we talk about achieving one hundred percent, at one point, it depends on the operations, ninety-five, ninety-eight. Activities that you undertake produce waste, create pollutions, you offset the reductions that you are trying to achieve. Will you consider that when you are expanding your services?	We do consider this, although there are some practical constraints. For example, we have and will continue where appropriate to expand our facilities from an accessibility sense, yet when someone comes to the site to drop off an appliance, we are not in a position to question, "Is it still running, why are you bringing it here?" What we have pursued is broader education. The whole goal that we in this industry are trying to achieve is to get people away from a take, make, break, waste philosophy. To put it plainly, use your appliances until they reach end of life, and then allow for its recycling or find another alternative use for it. At the same time, there are residual consumer habits which will be hard to shift, in that some people just want a new fridge or appliance, such as when renovating their home.

No.	Organization	Intake Method	Question/Comment	MARR Response
71.	Nanaimo Recycling Exchange Society	Written submission	<p>It's difficult to see design impacts MARR is having on industry.</p> <ul style="list-style-type: none"> The home appliance industry has a history of implementing design changes and transitioning to the use of materials that lessen the environmental footprint of home appliances both in their use and management at the end of life. <p>Wouldn't reuse and repair be a better return for the fees collected?</p>	<p>Reuse and repair in most cases is cheaper than purchasing a new appliance. This should be considered by the consumer prior to purchasing a new one.</p>
72.	District of Squamish	Written submission	<p>A key gap of this program remains the lack of focus on product redesign for longevity, design for repairability, availability and standardization of parts, prevention of early obsolescence, and reuse. This is happening at a time where the Right to Repair movement is growing and major appliances are one of the key product classes garnering a lot of attention. We encourage MARR to look at ways to move up the waste hierarchy from Recycle to Reduce and Repair by encouraging producers to develop longer lasting appliances, at minimum to the 10 – 20 years stated in the plan, and by creating a robust repair network across the province, including options in remote communities.</p> <p>We encourage MARR to further engage with repair companies and organizations in all parts of the province to expand accessibility and to encourage consumers to repair over recycle.</p>	<p>Appliances are still designed for longevity. Manufacturers stock parts that are accessible to repair technicians and the public.</p> <p>Major appliances are also high voltage and improper repair by unqualified personnel is a safety hazard. MARR recommends that all repairs be carried out by a licensed and qualified technician.</p>
73.	Zero Waste BC	Written submission	<p>A key gap of this program remains the lack of focus on product redesign for longevity, design for repairability, availability and standardization of parts, prevention of early obsolescence, and reuse. This is happening at a time where the Right to Repair movement is growing and major appliances are one of the key product classes</p>	<p>Please see response to Reference No. 59.</p> <p>Qualified technicians must be compensated appropriately for the education and amount of time required to be certified. This is captured in the cost of repair.</p>

No.	Organization	Intake Method	Question/Comment	MARR Response
			<p>garnering a lot of attention. A recent report for the federal government noted “lack of access to spare parts, high costs of repairs compared to purchasing a new unit and the low profit associated with refurbished products” as key barriers.¹¹ The report advocates for fostering refurbishment, harmonizing EPR schemes, standards for refurbishment and labelling, promoting communal facilities, looking at leasing services, and analysing life cycle impacts with an eye to promoting longer life span products and Right to Repair. It also notes the need for better data on the plastic components of home appliances. This report also noted (section 8.2) that value retention processes (such as repair and refurbishment) for home appliances were estimated at revenue of \$922 million. These activities generated \$192 million in direct labour income across 3,300 direct jobs. Direct taxes on production were estimated at approximately \$4.6 million. Environmental benefits were GHGs avoided, materials saved, and plastics reused (page 80). This highlights the need to go beyond mere recycling.</p>	
74.	Zero Waste BC	Written submission	<p>Recent news reports have also highlighted the shortening of product lifespans and this trend needs to be reversed.¹² The plan states lifespans of 10-20 years but many appliances are not even lasting that long. The draft program plan notes lightweighting as a step that the manufacturers are taking to reduce environmental impact, but this benefit may be moot if the</p>	<p>Manufacturers are taking steps to reduce environmental impact. There is no correlation between lightweighting and the longevity of the product.</p>

¹¹ Environment and Climate Change Canada (2021). Socio-economic and environmental study of the Canadian remanufacturing sector and other value-retention processes in the circular economy. Accessed at https://publications.gc.ca/collections/collection_2021/eccc/En4-438-2021-eng.pdf

¹² CBC, Feb 29, 2020. Canadians name Kenmore, GE, Whirlpool as top appliance brands to break down in CBC poll. <https://www.cbc.ca/news/canada/marketplace-appliances-right-to-repair-1.5475649>.

No.	Organization	Intake Method	Question/Comment	MARR Response
			appliances do not last as long.	
75.	Resort Municipality of Whistler	Written submission	<p>The program plan notes the role of refurbishers but the program itself should develop a system where each item returned gets assessed for its potential for reuse, refurbishment or use for parts. MARR should remove all barriers to reuse in the depot contracts. Finally, the challenges in dismantling appliances should be communicated back to the producers to make design changes.</p>	<p>Our contracts do not prevent collectors from reusing or reselling the appliances dropped off at MARR collection sites. Where there is an existing market/demand for refurbished appliances, we encourage it.</p>
76.	Zero Waste BC	Written submission	<p>The program plan notes the role of refurbishers but the program itself should develop a system where each item returned gets assessed for its potential for reuse, refurbishment or use for parts. The items could go back to the original manufacturer or be part of a program-funded system to resell, repair and refurbish the products, as well as create a bank of spare parts. This could involve partnerships with existing reuse organizations but needs to ensure all returned items that could be handled at a higher rung of the hierarchy are. Any barriers to reuse in the depot contracts should be removed. The availability of parts is also a key issue. Recent personal experience in trying to source parts for otherwise functioning appliances has resulted in the need to buy new items due to lack of parts and concerns raised by appliance repair people that newer appliances were not likely to last as long as the older versions.</p> <p>Should the program not take the lead in redesigning its products, the provincial government may wish to explore regulations being pursued in other jurisdictions that require products to last a certain length of time, come with mandatory warranties of longer terms, have</p>	<p>MARR is a Extended Producer Responsibility agency that deals with end-of-life major appliances. We promote the refurbishment and repair of appliances by qualified technicians and provide regular feedback to our producers on public sentiment/concerns as it relates to repair and reuse.</p>

No.	Organization	Intake Method	Question/Comment	MARR Response
			availability of parts, are designed for repair, and have access to repair or servicing.	
Pollution Prevention				
77.	Cariboo Regional District	November 17 th Consultation, Chat Function	Do you know what % of new fridges and freezers have ODS in the insulating foam? Is there any work being done to capture ODS from the insulating foam found in newer fridges/freezers?	Since January 1, 2020 producers are no longer using ozone depleting substances in the blowing agent of the foam, so it should be zero percent. It is also planned as part of our study to look at options for foam including recovery.
78.	Zero Waste BC	Written submission	The goal should be to be transparent on what happens to the ODS once it is removed, and if it is a type that is still in use, seek to reuse it in existing products before destroying it. Ongoing work to develop systems to use no ODS or at least better forms of ODS is underway and producers are encouraged to take the lead on this and not wait for regulated deadlines or changes.	The ODS once collected is returned to a refrigerant distributor. They determine whether the gases can be reused, recycled, or reclaimed, or if they need to be destroyed. This is covered by a Extended Producer Responsibility program called Refrigerant Management Canada (RMC). It is also important to note that ODS gases are no longer used in modern appliances. MARR will consider sharing more of this information as part of our consumer awareness strategies.
79.	Zero Waste BC	Written submission	Using lower Global Warming Potential chemicals for refrigeration and foam blowing agents is good but the program needs to develop systems to capture and handle the foam that already exists in products in an environmentally friendly manner ¹³ as well as to research the best methods to treat these new chemicals at end of life.	This will be part of the study that will be carried out to research and investigate options for processing and recycling residual materials, as one of the factors to investigate. It is also important to note that manufacturers no longer use ODS gases as blowing agents for the

¹³ Wall, B. Appliance Recycling Centers of America (1994). CFCs in Foam Insulation: The Recovery Experience. https://www.aceee.org/files/proceedings/1994/data/papers/SS94_Panel4_Paper28.pdf

No.	Organization	Intake Method	Question/Comment	MARR Response
				foam in refrigerated appliances.
80.	Resort Municipality of Whistler	Written submission	The program needs to develop systems to capture and handle the foam that already exists in products in an environmentally friendly manner and to research the best methods to treat these new chemicals at the end of life.	See response to Reference No. 66.
81.	Cariboo Regional District	November 17 th Consultation, Asked Verbally	With new coolant being used, what is the new life expectancy of fridges and freezers?	<p>This question would best be addressed by an expert on such technical matters. However, as noted in the Extended Producer Responsibility plan, our reports indicate that the lifespan of appliances is 10-20 years.</p> <p>We also understand that carbon-based gases are harder to cool with, yet the technology around the whole refrigeration system along with energy usage is continually improving. As noted earlier, a related consideration is that manufacturers must meet strict CSA requirements.</p>
Material End Fates and Product and/or Material Processing Pathways				
82.	City of Kamloops	October 20th Consultation, In-Person	I'm curious about how much plastic there is versus metal recycled?	This depends on the appliance. A gas range is likely 80 to 85 percent metal. A fridge is closer to 50 to 60 percent metal along with other materials, including the insulated foam, glass, etc. It depends on the product with how much plastic or non-recyclable material there is. The last study MARR had done in 2013 identified a metal content of around 70 percent.
83.	Regional District of	Written submission	<i>"In 2017, MARR met with other stewardship organizations and metal recyclers to discuss this issue</i>	Meetings with other Extended Producer Responsibility

No.	Organization	Intake Method	Question/Comment	MARR Response
	Fraser-Fort George		<p><i>and will continue to consider options for achieving higher end uses of residual materials.”</i></p> <p>As of Q4 of 2021 there have been no results of this meeting published. Has there been any progress since then?</p>	<p>organizations have not identified options to manage the residual materials. To date, no organization in BC has been able to manage/recover the residuals from end-of-life appliances. This is what we intend to study.</p>
84.	Regional District of Fraser-Fort George	Written submission	<p>From the letter dated April 30, 2021, attached to the previous plan, reference number 376513:</p> <p>“I understand the complexities involved in the evolution of managing plastics from major appliances collected by the program, but MARR’s downstream management practice of landfilling plastics is an area of concern. I expect MARR’s upcoming plan will demonstrate producers and the program are working on solutions to solve this issue. Clarification, improved transparency, plan commitments and corresponding reporting requirements regarding the recycling feasibility and the downstream management of plastics to final disposition will be expected to address the management of plastics in accordance with the pollution prevention hierarchy and the environmental impacts.”</p> <p>The plan doesn’t currently have timelines for the studies MARR will undertake.</p>	<p>Because our initial meetings have shown no viable way to recover post shredder waste, we did not indicate timelines. Until we know what the options are, we cannot assign a timeframe.</p>
85.	Zero Waste BC	Written submission	<p>The program plan outlines that the products are an average of 74% metal by weight but also contain glass, rubber, foam, plastic, paper, oils, electronics, refrigerants and other substances.</p> <p>The current recycling system recycles the metals but send the rest of the materials to waste. It is good that a system is in place to capture the refrigerants and the</p>	<p>The current process for recycling scrap metal has inherent drawbacks. It may not be a perfect system, but it is the system that currently exists.</p> <p>That is what we plan to study: other ultimate end fates for the residual materials.</p>

No.	Organization	Intake Method	Question/Comment	MARR Response
			<p>mercury. The next step for the program is to develop systems to recycle the other materials (such as glass, plastics, electronics, paper and oils) which may be lower by weight but are more significant by volume.</p> <p>This may mean that shredding the appliances is not the most suitable way to handle them and instead a system of dismantling may be required. Perhaps some minor preprocessing could be done by the collectors. The costs of recycling plastic are not the most relevant aspect as the program could clearly charge more to fund this requirement. The challenges in dismantling appliances should be communicated back to the producers in order to have design changes made.</p>	
86.	Regional District of Greater Fort George	October 20 th Consultation, Chat Function	What are the timelines to determine the options for the plastics that are currently landfilled?	In this five-year plan we are committing to undertaking studies that will look at options, costs and other feasibility factors. The first step is to see what options exist. In this plan we are committed to the related research. If a better option to process plastics arises, we will certainly bring it forward with the supplier. Currently there is no easy solution, so it is difficult to assign a timeline to this.
87.	Metro Vancouver	Written submission	(Page 17) "MARR continues to examine the management of shredder residue and identify opportunities for achieving higher end uses of residual materials." Please consider adding further details on options that MARR is considering for residue and residual materials, in particular for the processing and management of plastic dishwashers.	MARR continues to examine the management of shredder residue and to identify opportunities for achieving higher end uses of residual materials. Plastic waste reduction, tracking and recycling is an area of focus. MARR will undertake studies to determine current available options for

No.	Organization	Intake Method	Question/Comment	MARR Response
				improving processing and the cost of recycling plastics through time and movement studies.
88.	City of Nanaimo	October 20 th Consultation, In-Person	MARR has very good influence, how will you utilize that opportunity to somewhat encourage producers to produce more affordable, repairable [appliances], but also using the material that creates less pollution?	To sell and make major appliances in Canada, one must meet strict CSA requirements. This has implications for manufacturing companies when it comes to more recycled content, as they may not be allowed. Put another way, there are certain requirements that manufacturers have to meet, for example, from a flame retardant, as well as an energy target perspective. At the same time, manufacturers are actively designing for the environment: increasing energy efficiency, taking out materials like mercury switches and finding other ways to reduce their environmental footprint.
89.	Cariboo Regional District	November 17 th Consultation, Asked Verbally	Do you know if the resin type in fridges and freezers is the same across the board or does it differ by producer or component?	Through the MARR program, we are collecting appliances that were made twenty or thirty years ago and are dealing with legacy products, so they may not have the same resin type as newer makes and models or across different components. The newer products are better designed for the environment and have to meet strict CSA guidelines. At the same time, BC is a very small part of the North American market and producers build for the whole North American market, so it would be difficult to require only one

No.	Organization	Intake Method	Question/Comment	MARR Response
				resin type.
90.	PureSphera	November 17 th Consultation, Asked Verbally	Knowing that these technologies are already in use around the world, there's a great potential of recycling the plastic from white goods. What would be the action, aside from studies, to quickly prevent the plastic from being landfilled?	MARR is committed to carrying out those studies in this plan. We are aware that some jurisdictions have mechanical systems to separate the plastic from the metal so that the plastic can be recycled. In British Columbia, potential regulatory changes and current technology options are such that a solution will not be identified by June of next year, so MARR is committing to advancing the research on these systems and carrying out the studies in this plan.
91.	PureSphera	November 17 th Consultation, Asked Verbally	Could the plan estimate the potential of [plastic] reduction through optimal major appliance recycling to show the potential benefits of a perfect operation to strive towards?	That would be part of the plastics study that we are committing to, although it is not something that could be included in this plan. MARR will determine current available options to improve processing and decreasing the cost of recycling plastics by conducting time and movement studies.
92.	PureSphera	Written submission	MARR could prioritize specific measures to increase GHG reduction of its program by the management of refrigerated appliances such as the use of specific equipment to increase its performance regarding the extraction of the refrigerants; extracting refrigerants contained in the oils within the compressors; extracting the blowing agents from the insulation foam of the appliances and by recycling the plastics.	These options will be considered as part of the study that will be carried out to achieve higher end uses of residual materials.
Performance Monitoring and Reporting				
93.	City of Kamloops	October 20 th Consultation,	I'm curious if you measure or report anything on your capture	Our annual report includes the number of appliances

No.	Organization	Intake Method	Question/Comment	MARR Response
		In-Person	rates on how many appliances are collected?	that our members sold in the year, as well as the number of units collected, which is going up drastically from year to year. We do not report a capture rate as it is unknown what is actually available to be recycled each year. For example, and in BC, it is estimated that 30 to 35 percent of all new fridge sales are going to new construction, so they are not replacement fridges with old versions available for recovery/collection.
94.	Nanaimo Recycling Exchange Society	Written submission	<p>The MARR 2020 Annual Report states,</p> <ul style="list-style-type: none"> • “At this time, MARR is unable to obtain information from third party vendors regarding the exact volume of material components of major appliances and the degree of certainty over the processing pathways. Therefore, end fate data is based on estimates from two BC-based metal processors surveyed in the System Study. These processors estimate the material composition of major appliances to be approximately 75% metal. <p>Of this metal, processors estimate that 98% of ferrous and non-ferrous metal is recovered and recycled back into the commodities market. It is unknown at this time which geography the metals are processed and re-entered into the commodities market. The remaining 26%, other than substances of concern, do not undergo further processing, and is currently sent to landfill.</p> <p>Recycling Regulation 8 (2) states that Annual Reports must include</p>	Under the current Extended Producer Responsibility plan, MARR is required to report on units collected and units collected with ODS removed. The annual report is signed off by a third-party audit team and is in accordance with the guidance issued by the BC Ministry of Environment and Climate Change Strategy.

No.	Organization	Intake Method	Question/Comment	MARR Response
			<p>(d) a description of how the collected product was managed in accordance with the pollution prevention hierarchy;</p> <p>Without processing data, MARR is not in compliance with the Regulation. This lack of processing data doesn't ensure compliance with Recycling Regulation 5(1) c i,vii, or viii.</p> <p>As long as MARR continues to superimpose EPR requirements on metal recycling industry processing, there will unmet outcomes of the EPR program, and likely no year over year improvement reported in collected product management.</p>	
95.	Nanaimo Recycling Exchange Society	Written submission	<p>Annual Reports must also contain:</p> <p>(c)efforts taken by or on behalf of the producer to reduce environmental impacts throughout the product life cycle and to increase reusability or recyclability at the end of the life cycle;</p> <p>What is planned to encourage reuse or repair?</p>	MARR promotes the refurbishment and repair of appliances by qualified technicians and provides regular feedback to our producers on public sentiment/concerns as it relates to repair and reuse.
96.	Nanaimo Recycling Exchange Society	Written submission	<p>Recycling Regulation 8 (2) states that Annual Reports must include</p> <p>(g)a comparison of the approved plan's performance for the year with the performance measures, performance requirements and targets referred to in section 5 (1)</p> <p>(a) [approval of extended producer responsibility plan];</p> <ul style="list-style-type: none"> • “MARR continues to examine the management of shredder residue and identify opportunities for achieving higher end uses of residual materials.” <p>Management of non-metal components of large appliances does not seem to improve.</p>	MARR continues to examine the management of shredder residue and to identify opportunities for achieving higher end uses of residual materials. Plastic waste reduction, tracking and recycling is an area of focus. MARR will undertake studies to determine current available options for improving processing and the cost of recycling plastics through time and movement studies.
97.	District of	Written	MARR should report on the	We report on consumer

No.	Organization	Intake Method	Question/Comment	MARR Response
	Squamish	submission	<p>consumer and industry awareness of their program, as well as the capture rate of their product. To do this, MARR should track, both in weight and units, the amount collected, ending up in landfills, and the amount illegally dumped. This information should be presented by geography and can be compared to depot access to determine where inadequate access to the program is and where better access to the program needs to be developed.</p> <p>Annual surveys are encouraged to track progress on increasing awareness, and waste audits are encouraged to track capture rates.</p>	<p>awareness, units sold and collected, and on the units collected by region. We do not report a capture rate as it is unknown what is actually available to be recycled each year.</p> <p>The MARR program offers free drop off of major appliances accessible to 95% of the BC population in order to discourage anyone from illegal dumping.</p> <p>MARR also participates in waste audits through SABC and carries out annual consumer awareness surveys to track progress.</p>
98.	Nanaimo Recycling Exchange Society	Written submission	<p>MARR should be commended for tightening reporting from the certified collection sites. One reporting suggestion might be to add percentage calculation of Units with ODS emptied under MARR program vs those emptied some other way. As data is presented now, the reader must search the units with ODS collected in one section and search for number managed under MARR in another section and do the calculation.</p>	<p>The information to calculate this percentage is found on page 1 of the 2020 annual report.</p>
99.	Nanaimo Recycling Exchange Society	Written submission	<p>Note of concern: How is it that a rise in contracted collection sites results in a lower percentage of ODS units where MARR managed the safe removal of ODS Gas or other halocarbons?</p> <ul style="list-style-type: none"> • MARR 2020 Annual Report says 112,190 units containing ODS were collected, and MARR managed the safe removal of ODS gas or other halocarbons for 83,922 of those units. That is 75%. • MARR 2019 Annual Report says 78,336 units containing 	<p>When appliances are collected with the ODS already removed, it does not mean more gas is being let out in the environment. Some distributors and haulers are likely managing the ODS prior to bringing it to a MARR facility.</p> <p>For example, at the Sunshine Coast and District of Nanaimo, all units were being handled by a MARR technician but were not part of the program this</p>

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			<p>ODS were collected, and MARR managed the safe removal of ODS gas or other halocarbons for 63,818 of those units. That is 81%.</p>	<p>year. That data is reported on in the regional report.</p>
100.	Zero Waste BC	Written submission	<p>It is good news that the program will gather data on tonnage and units by product category as well as ODS collected and destroyed.</p> <p>MARR should report the product sold and collected as both weight and units. It should also show the amount disposed in landfills and illegal dumping annually. Connections to the Conservation Officer Service and other agencies could assist in counting the illegal dumping incidences.</p>	<p>Tonnage is not a metric we use for reporting as it can be inaccurate or misleading.</p> <p>Through our Local Government Advisory Council and relationships with other municipalities, illegal dumping has not been brought to our awareness as an ongoing issue. The MARR program offers free drop off of major appliances accessible to 95% of the BC population in order to discourage anyone from illegal dumping.</p>
101.	Zero Waste BC	Written submission	<p>In addition to ODS, MARR should also report on the mercury switches collected and handled as well as each other component of the appliances (glass, plastic, etc.).</p> <p>Any material that is burned or destroyed (not returned to the materials economy) should be tracked and not count as diversion. This includes anything sent to cement kilns as RDF and anything sent to a smelter that was not recovered through the process to be sold as a material.</p> <p>Targets should be set to eliminate these activities as quickly as possible.</p>	<p>We will be reporting on mercury switches collected. It is not a requirement for our plan, so it will be above and beyond the reporting requirements.</p>
102.	PureSphera	November 17 th Consultation, Chat Function	<p>Would it be more of interest to report the greater family of low carbons, not just ODS gasses, and describe more the global warming potential of such gasses?</p>	<p>We could provide links or reference in our plan if people want to find out the global warming potential of certain gases and when they were used, but we do not intend to publish this information as we are not</p>

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				conducting the related studies.
103.	Zero Waste BC	Written submission	The number and location of contracted sites by RD should be provided as well as a list of any municipalities that do not have a permanent depot. The population with access to collection should have a target of 100%, with all municipalities served as well as any First Nations locations as determined in conjunction with the First Nations. Ship-back options should be available for those not living in the aforementioned locations.	The site list is published on the website and in the annual report. You can search by regional district to find data on specific communities. MARR's program plan is based on the drop off of registered producers to a MARR collection facility. Any third-party transportation and pick up services are out of the scope of the MARR program.
104.	District of Squamish	Written submission	MARR's target for coverage should be that 100% of the population has access to either a collection depot or a mail-back system (free of charge to the end user). Product disposal should be available in every community, and if no suitable depot is found the program should set up a depot.	MARR has an extensive collection network which allows 95% of the population to drop off an appliance within 20 km of their home. We work with remote communities individually to collect end of life appliances.
105.	Zero Waste BC	Written submission	Another measure that may be useful is the convenience of accessing depots. The 2018 BC survey noted that 33% of residents found recycling large appliances very convenient and another 38% found it somewhat convenient, the lowest of all existing stewarded products surveyed. ¹⁴ A target to raise this number as well as an annual survey to measure it would be useful. The survey also noted that up to 9% of respondents had thrown large appliances in the garbage in the last few years. When asked why these items may have been thrown in the garbage, 24% did not know the item was	Figures from 2018 are out of date as the MARR program has evolved over time. MARR conducts our own consumer awareness surveys on an annual basis and has seen an improvement in results.

¹⁴ BC Ministry of Environment and Parks(2018). Consumer Awareness Survey of Extended Producer Responsibility Programs in BC. Accessed at https://www2.gov.bc.ca/assets/gov/environment/waste-management/recycling/recycle/rel-res/consumer_awareness_survey_of_epr_2017.pdf.

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			recyclable, 30% did not know where to take it and a significant 34% said there was nowhere to take it or no way to get it there. This shows some key areas that this program plan should address.	
106.	Zero Waste BC	Written submission	The consumer awareness target should be 95% of the population aware by 2024 (and later 100%). There should also be surveys on awareness of reuse and repair options.	It is not fiscally responsible to attain 100% consumer awareness levels. Most consumers will conduct an internet search when they need to recycle a major appliance. Our goal is to make the information readily available at the time when they are searching for it.
107.	Regional District of Fraser-Fort George	October 20 th Consultation, Chat Function	What are the corrective actions along with timelines for implementation of those actions that MARR will take if consumer awareness falls below the set target?	MARR monitors our consumer awareness on a regional basis. If consumer awareness falls below the set target, we will determine which areas are trending down, and carry out targeted advertising towards specific communities or specific demographics. If our consumer awareness rating is on a path that will not meet the target, we will take prompt action in response.
108.	Regional District of Fraser-Fort George	Written submission	From the letter dated April 30, 2021, attached to the previous plan, reference number 376513: <i>“MARR conducts a consumer awareness survey annually to analyze consumer habits and perceptions of recycling major appliances in B.C. While I recognize MARR has set a consumer awareness target of 75% of surveyed adults who are aware they can recycle major appliances and has committed to developing a consumer awareness plan should levels fall below the set target, I expect MARR’s next plan to</i>	Although not in our plan, we would monitor our consumer awareness on a regional basis, to determine which areas are trending down, and carry out targeted advertising towards specific communities or specific demographics. If our consumer awareness rating is on a path that will not meet the target, we will take prompt action in response.

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			<p><i>elaborate on the types of corrective actions included in a consumer awareness plan, along with timelines for implementation.”</i></p> <p>The corrective actions along with timelines for implementation of those actions that MARR will take if consumer awareness falls below the set target are not currently in the draft plan.</p>	
109.	Zero Waste BC	Written submission	<p>Aside from consumer awareness surveys, we recommend local government satisfaction surveys on the different aspects noted in the plan to ensure quality services are being delivered across BC. The same could be offered to First Nations communities if IZWTAG suggests that this would be valued.</p>	<p>Thank you for the suggestion, we will take it under advisement.</p> <p>We are in constant communication with our local government and First Nations partners. We work very closely with IZWTAG on a regular basis and have field service agents that are constantly receiving feedback from our collectors.</p>
110.	Zero Waste BC	Written submission	<p>Program costs should also be reported based on the amount of product introduced into the market annually. Efforts should be made to quantify the costs that remain externalized to others (such as depot operators, local governments, illegal dumping clean-up efforts, and the environment) and attempts made to rectify this.</p>	<p>The process of negotiating each contract with collectors ensures that the costs to depot operators, local governments, and other MARR collection sites is covered to their satisfaction.</p>
111.	Zero Waste BC	Written submission	<p>MARR should report on its annual engagement activities with producers taken to provide feedback from the program that can help to drive design change.</p> <p>As noted, efforts to reduce environmental impacts should be significantly strengthened and then targets set for reuse, repair, refurbishment and use of parts.</p>	<p>Thank you for your feedback but this is not considered to be within the scope of the consultation.</p>
112.	Nanaimo Recycling Exchange	Written submission	<p>Instead of reporting the sunshine and roses, I continue to look for sections in any EPR reports that</p>	<p>Our annual reporting is audited by third parties and complies with the</p>

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	Society		<p>identify true state of play. What are the systemic challenges? What are the real limitations or infrastructure deficiencies that limit PRO ability to reduce environmental impact? Highgrading has somehow become the acceptable standard for management of products and for reporting “recycling.” There is valuable data being lost.</p>	<p>requirements set by the Ministry of Environment and Climate Change Strategy. We recycle what can be recycled and are very transparent about what cannot be recycled. We are looking for solutions to manage/recover the residuals from end-of-life appliances as part of the studies set out in this plan.</p>
113.	PureSphera	Written Submission	<p>The plan submitted by MARR doesn’t mention the importance and environmental impact of the halocarbons used as blowing agents in the insulation of fridges and freezers. The plan should state the typical characterization of the materials of refrigerated appliances.</p>	<p>MARR does not have enough information on this yet. This is part of the research MARR intends to undertake.</p>
114.	PureSphera	Written Submission	<p>The plan could include the positive impact it currently has on the reduction of GHG and capitalize on the potential of carbon offsets as an additional potential revenue to increase its capacities to do more.</p>	<p>Please see response to Reference No. 100.</p>
115.	PureSphera	Written submission	<p>The plan could immediately include practices to quantity of refrigerants collected (type and quantity); require proper tracking regarding its recycling or destruction and ensure that the oil contained in the compressors is collected, decontaminated and recycled. The annual report or the plan should provide data regarding this.</p> <p>The origin of the units processed by the program could be detailed.</p> <p>The plan could indicate in the geographic location of the sales generated (section 6.3) which would help evaluate the performance achieved per region (section 6.2).</p> <p>The section 6.2 could have a breakdown per category of the</p>	<p>We collect ODS gases and record the weight. We also ensure proper certificates of destruction are provided, as it is part of the audit process.</p> <p>We ensure all ODS collected is returned to a refrigerant distributor. They determine whether the gases can be reused, recycled, or reclaimed, or if they need to be destroyed. This is covered by a Extended Producer Responsibility program called Refrigerant Management Canada (RMC).</p> <p>Anything outside of</p>

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			<p>units collected in order to compare with the categories listed in section 6.3.</p> <p>The annual report and the plan could indicate how many refrigerated appliances are not captured by the program.</p> <p>A particular focus on refrigerated appliances could be emphasized considering the impact of such on-climate change. Proper manifest could be generated to measure and track halocarbon recovery and destruction. A better estimation and analysis of the capture rate of refrigerated appliances versus appliances should be established. The current rate of 24.9% recovery is far from the 90% target and this gap could be greatly reduced with proper efforts.</p> <p>It seems that additional efforts can be invested in order to better track its activities and increase its environmental performance. A slight increase of the current fee would finance and generate substantial benefits with existing and proven technologies for halocarbon capture and plastic recycling.</p>	<p>ferrous, nonferrous, plastic and refrigerant is landfilled or safely destroyed.</p>