

Major Appliance Recycling Roundtable 2016 Annual Report to the Director

Submitted to: Director, Extended Producer Responsibility Programs
PO Box 9341, STN PROV GOVT
Victoria, BC V8W 9M1

Submitted by: Warrington Ellacott, Chair
Major Appliance Recycling Roundtable (MARR)
105 West 3rd Avenue
Vancouver, British Columbia, V5Y 1E6
1-888-252-4621

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Message from MARR's Board of Directors

The past year has been one of transition for MARR as we have prepared for the submission of a new five-year program plan. Major appliances are successfully diverted from landfill by an existing system operated by private sector retailers, collectors, transporters, haulers and processors.

Many components of major appliances have significant value and the challenge in building a system to recover these end-of-life products is to make use of the existing private-sector players, and the value of the resources to ensure the costs to consumers remain low.

MARR is thankful to the players in the existing system – particularly local government entities – who provided valuable information to inform the PricewaterhouseCoopers study regarding the economics of the existing major appliance recovery system in British Columbia. The report has been valuable to the production of a new program plan as we work to fill gaps and evolve the major appliance recovery system.

British Columbia owes the successful record of recovery of end-of-life major appliances to the public and private sector entities that have operated the system in recent decades. The Board of Directors of MARR is determined not to negatively impact those local government and private entities as the current system evolves in keeping with our upcoming program plan(s).

Finally, we thank those producers, obligated under B.C.'s Recycling Regulation, who choose to entrust MARR with the fulfillment of their responsibilities for management of end-of-life products.

Warrington Ellacott,
Board Chair

1. Executive Summary

Products within plan	<p>The MARR program plan includes major household appliances powered either by 120 volt or 240 volt input power that have been designed for use in residential homes, including those that use natural gas or propane for heating purposes. Appliances used in or sold for industrial, commercial and/or institutional (IC&I) applications that have the same essential design characteristics as major household appliances, as defined above, are also included.</p> <p>Major product types include:</p> <ul style="list-style-type: none"> • 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 <p>For a detailed list of included products and relevant definitions, please refer to the MARR website at www.marrbc.ca.</p>
Program website	www.marrbc.ca

Recycling Regulation Reference	Topic	Summary Report
Part 2, section 8(2)(a)	Public Education Materials and Strategies	<ul style="list-style-type: none"> • Meeting of MARR-Local Government Advisory Committee. • Maintained collection site locator on marrbc.ca. • Participated in the Recycling Council of BC Hotline and Recyclepedia website. • Made rack cards available to retailers and collection sites.

Recycling Regulation Reference	Topic	Summary Report
Part 2, section 8(2)(b)	Collection System and Facilities	<ul style="list-style-type: none"> Existing comprehensive collection network available through market-driven system. Completed System Study Update for 2016 in early 2017. 240 drop-off collection sites were found to accept all types of major appliances, above and beyond pick-up services offered by retailers, and some municipalities. Based on the System Study, accessibility for BC residents to a drop off location for major appliances was estimated at 98.5% for all locations, and 93.6% for free drop-off locations. Completed study assessing the economic parameters underlying the collection and processing of end-of-life major appliances in BC.
Part 2, section 8(2)(c)	Product Environmental Impact Reduction, Reusability and Recyclability	<ul style="list-style-type: none"> Development and promotion of the Voluntary Processing Standard to support decommissioning and safe handling of substances of concern.
Part 2, section 8(2)(d)	Pollution Prevention Hierarchy and Product / Component Management	<ul style="list-style-type: none"> Based on the original System Study, 74% of the total weight of end-of-life major appliances are ultimately recycled.
Part 2, section 8(2)(e)	Product Sold and Collected and Recovery Rate	<ul style="list-style-type: none"> 110 producers were registered with the MARR Program and reported sales as of 31 December 2016.
Part 2, section 8(2)(e.1)		<ul style="list-style-type: none"> The System Study Update estimated the quantity of products collected to be 38,394 tonnes, with an estimated capture rate of 98.6%.
Part 2, section 8(2)(f)	Summary of Deposits, Refunds, Revenues and Expenses	<ul style="list-style-type: none"> See Appendix F for independently audited financial statements.

Comparison of Key Performance Targets			
Part 2 section 8(2)(g); See full list of targets in Plan Performance			
Performance Measure	Target	2016 Results	Remediation Strategies
Capture rate	90% target established for years 3-5	Target exceeded: 98.6%	n/a

2. Program Outline

The Major Appliance Recycling Roundtable (MARR) is a not-for-profit stewardship agency created to implement and operate a stewardship plan for end-of-life (EoL) major household appliances in the province of British Columbia (BC) on behalf of the major appliance “producers” who are obligated under the [BC Recycling Regulation](#) (“Regulation”). The [BC Major Appliance Stewardship Plan](#) (“MARR Stewardship Plan”) was developed jointly by the Association of Home Appliance Manufacturers Canada (AHAM Canada) and Retail Council of Canada (RCC) and received the approval of BC’s Ministry of Environment on June 29, 2012.

The MARR Stewardship Plan is fundamentally unique compared to many other BC product stewardship programs as there exists a long-standing and effective market-based system for recycling EoL major appliances. In a broad view, this market-based system exists largely because major household appliances, unlike most other electronic or electrical equipment, have a financial value at end-of-life. As such, the MARR Stewardship Plan is focused on enhancing the performance and transparency of the existing market-based system of collecting and recycling major household appliances in BC, rather than supplanting or replacing this system with a traditional stewardship model.

In particular, the MARR Stewardship Plan includes commitments to:

- Work with collectors and recyclers to research and promote best practices that ensure on-going system performance and improvement;
- Create a branding and communications program to encourage market participation in the MARR processing standard; and
- Conduct studies on the operation and performance of the market-driven recycling system.

The Product Care Association (PCA) was contracted in early 2013 by MARR to provide program management services and to assist in implementing the MARR Stewardship Plan in BC. Some of the highlights of 2016 for MARR included:

- Completing a study on the economics of the market system for major appliances in BC, including specifics on rural and remote areas (“Economic Study”);
- Updating the *Study on the Operations and Effectiveness of the Major Appliance Collection and Recycling System in British Columbia* (“System Study”), initially completed in 2013, to validate the performance of the BC market driven system for major appliances;
- Continuing active recruitment of obligated parties as program participants;
- Participating in the establishment of a First Nations Field Specialist in partnership with other stewardship organizations to enhance access for First Nations communities; and
- Development of a voluntary processing standard and campaign to have private metal collection facilities adopt the standard.

The MARR-Local Government Advisory Council (MARR-LGAC) was created in 2013 to provide a forum for local governments to deliver their unique perspective and advice to MARR, and for MARR to better understand municipal and regional needs, capabilities and capacities. MARR-LGAC met in 2016 to discuss a number of topics, including the Economic Study and the Processing Standard.

3. Public Education Materials and Strategies

MARR continued to engage in a number of initiatives to raise consumer awareness about the Program.

In 2016, informational point of sale rack cards for existing retailers and wholesalers were replenished upon request free of charge. See **Appendix A** for an example.

MARR remained a member of the Recycling Council of BC (RCBC) and continued its participation in a joint service agreement with other stewardship programs through Stewardship Association of BC (SABC) to provide the public with information about MARR through RCBC's Hotline and Recyclepedia. RCBC is a trusted public information resource used by consumers to learn about the recycling options available in their community. In 2016, RCBC Hotline and Recyclepedia received more than 238,000 inquiries about recycling from residents across B.C., including over 36,040 web / app searches and phone calls for MARR Program materials. PCA staff also responded to numerous consumer phone calls and email inquiries on behalf of MARR. All consumer concerns and questions were dealt with in a timely manner.

An estimated 6,325 unique visitors utilized MARR's website during the 2016 calendar year.

In 2016, MARR partnered with a group of other stewardship organizations to establish a First Nations Field Specialist position. The position, coordinated through MMBC, will work to enhance collection access for First Nations communities.

Processing Standard and Certification Program:

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 to (retailers, municipalities etc.) 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. As of December 31, 2016, 27 facilities had adopted the Voluntary Processing Standard. See **Appendix B** for a list of the signatories.

4. Collection System and Facilities

As described in the MARR Program Plan, there is an existing recycling system for major appliances that has been in place in BC for decades, 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 much larger commodities market, these scrap metal companies process the products to recover metal components, which are sold to end markets, such as steel mills, for recycling.

In 2013, waste consultant, Ecoinspire Planning Services, undertook a study of the BC market driven system for major appliance recycling on MARR’s behalf. *The Study on the Operations and Effectiveness of the Major Appliance Collection and Recycling System in British Columbia, May 8, 2014* report (“System Study”)¹ examined the operation and performance of the existing collection and recycling system, including identifying collection site locations. In early 2017, MARR, with the support of waste consultant Tetra Tech, undertook an update of the System Study for 2016 (System Study Update). Collection information reported comes from the System Study Update.

In 2016, MARR also undertook a study to assess the economic parameters underlying the collection and processing of end-of-life major appliances in BC. The final report is available on MARR’s website at <http://www.marrbc.ca/collectors/enhancing>.

Drop-Off Collection Sites

In addition to the numerous pick-up services for major appliances offered by retailers and some municipalities, more than 300 locations were identified across BC that accepted some or all household major appliances for drop off. Of these locations 240 accepted all major appliance products under the MARR program, a net reduction of 4 (1.6%) from 2015. This included the closure of one location, three locations ceasing to collect major appliances, and no new locations starting to collect major appliances in 2016 (see Appendix C, Tables 9 and 10).

Table 1 provides an estimate of the breakdown of the different types of locations that accepted major appliances across the Province.² Appendix C, Table 8 lists all collection sites active in 2016 that accepted all major appliances.³ Appendix D, Table 11 lists the number of collection sites that accepted all major appliances by Regional District.

Table 1: Estimate of Sites that Accepted All MARR Products (2016)

Type of Collection Site	Number of Sites in 2016
Metal Recycling Facility (Private)	61
Local Government Facility	179
Total	240

¹ A copy of the System Study is available at <http://www.marrbc.ca/collectors/studies>

² The list of collectors provided is based on reports of which sites were accepting major appliances and represents the best available information as of March 2017. This list is not exhaustive, nor guaranteed to be current, due to ongoing changes in business operations. The list only includes local government and private/non-profit collector drop off sites, and does not include the numerous collection options that may be offered through retailers, utility bounty programs or other possible pick up options.

³ *Ibid.*

Pick-up Services

Many retailers offer a delivery/take-back option when a consumer buys a new appliance. As part of the 2016 System Study Update, MARR surveyed 11 major appliance retailers regarding their delivery and pick-up services. Of the 9 retailers that responded to the survey, they indicated that 79% of products they sold were delivered to customers. Of those delivered, 36% included the pick-up of an old appliance. After pick-up, the old appliances were generally delivered to a drop-off site, although some retailers reported that appliances might have also gone to a refurbisher.

Bounty Programs

There are two utilities in BC, one servicing the majority of the Province (BC Hydro) and a smaller one (Fortis BC) servicing an area in the Okanagan. The objective of bounty programs is to save energy by reducing the number of secondary refrigerators in households, and to prevent the reuse of less energy-efficient models. Neither BC Hydro nor Fortis operated bounty programs in 2016.

Accessibility

According to a Geographic Information System (GIS) analysis completed in 2014 as a part of the System Study, 98.5% of British Columbians had convenient access to a drop-off location for major appliance products. Accessibility to free drop-off locations for BC residents was estimated at 93.6%.⁴

⁴ The Stewardship Agencies of British Columbia defines accessibility as a 30-minute drive or less for those within urban areas, and a 45-minute drive or less for those in rural areas of the province.

5. Product Environmental Impact Reduction, Reusability and Recyclability

Design for the Environment

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 manufacture of the products,
- Incorporating new low-to-no Global Warming Potential (GWP) refrigerant technology such as hydrofluoroolefins (HFOs)⁵ or hydrocarbon refrigerants like isobutane (r600a) and foam blowing agents,
- Increasing energy and water efficiency, and
- AHAM, in conjunction with the Canadian Standards Association (CSA) and Underwriters Laboratories (UL), has published and continues to work on developing home appliance product sustainability standards.

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 lower greenhouse gas impacts as mandated by new regulations in accordance with the Montreal Protocol along with U.S. and Canadian law. Manufacturers of home appliance refrigeration products have announced a goal to voluntarily phase out the use of hydrofluorocarbon (HFC) refrigerants used in household refrigerators and freezers after 2024. Currently, many refrigeration products have already transitioned to low GWP refrigerants. This effort builds on a history of environmental stewardship that includes significant gains in energy efficiency and the phasing out of ozone-depleting substances without losing efficiency gains.⁶

Likewise, industry is moving towards the use of low GWP foam blowing agents for the insulation of refrigeration products due to the lower greenhouse gas emission potential. In 2015, home appliance manufacturers, working closely with the U.S. Environmental Protection Agency (EPA), set a path to phase out the use of HFC foam blowing agents in refrigeration products by 2020. Environment and Climate Change Canada has proposed to phase out the use of foam blowing agents and refrigerants in home refrigeration products with a GWP greater than 150 by January 2021 and January 2025 respectively.

Manufacturers have been able to reduce water consumption through design changes to dishwashers and innovations such as front-load and high efficiency top-load washers. Water consumption in dishwashers has been reduced by 37% (litres/cycle) between 1990 and 2009. Water usage in washers

⁵ Honeywell Fluorine Products. *Honeywell HFO-1234ze Blowing Agent*. Retrieved from: https://www51.honeywell.com/sm/lgwp-fr/common/documents/FP_LGWP_FR_Honeywell-HFO-1234ze_Literature_document.pdf

⁶ [Home Appliance Industry Sets Goal to Eliminate use of HFC Refrigerants](#) (February 9, 2016), available at www.aham.org.

has also been reduced by 43% between 2005 and 2010. These reductions in water consumption also significantly reduce energy demand as there is less water to heat to perform the same cleaning task.

Significant gains in energy efficiency have also been made over the past 20 years. The average energy consumption of the typical set of major household appliances has declined by 50% since 1990. In December of 2016, Natural Resources Canada published an amendment to the Energy Efficiency Regulations which will establish more stringent energy efficiency standards for all major appliances and will finally align Canada's energy efficiency regulations with the U.S. Department of Energy's more stringent standards. Natural Resources Canada's Office of Energy Efficiency has released its Forward Regulatory Plan 2017-19 which includes updates or new minimum energy performance standards (MEPS) for dehumidifiers, microwave ovens, electric ranges, wine chillers, clothes dryers and portable air conditioners.

Because of these Canadian regulatory changes, annual energy consumption is estimated to be reduced by 4.1 petajoules (PJ) per year by 2020 and further reduced by 10.2 PJ per year by 2030. It is also estimated these amendments will reduce greenhouse gas emissions by 0.8 Mt by 2030. The ENERGY STAR program continues to be an important influence on appliance efficiency with new product specifications for clothes dryers and washers in 2015, and dishwashers in 2016.

In addition to the above DfE activities, AHAM is currently engaged in the development of Sustainability Standards for household appliances. In conjunction with CSA and UL, sustainability standards for household refrigeration, cooking, clothes washers, clothes dryers, and room air conditioners have already been published, with other appliance standards currently under development.

In January of 2015, the AHAM 7001-2014/CSA SPE-7001-14/UL 7001, *Sustainability Standard for Household Refrigeration Appliances*, and in February 2016, the AHAM 7003/CSA R7003-16/UL 7003, *Sustainability Standard for Household Clothes Washers* received national accreditation under the American National Standard Institute (ANSI) and Standards Council of Canada (SCC) as approved National Standards for the U.S. and Canada. The Standard is based on a lifecycle approach for identifying the environmental impacts of refrigeration products in five key areas: energy, materials, end-of-life, performance and manufacturing. These and other standards use a broad multi-attribute approach that draws on life cycle assessment and hot button analysis as well as other key factors that influence product environmental performance. These sustainability standards are published jointly by the CSA, UL and AHAM.

6. Pollution Prevention Hierarchy and Product / Component Management

The following information is based on the understanding of the free market system, as well as findings from the System Study completed by MARR in 2014 reflecting the 2013 fiscal year. The System Study involved surveying industry participants with regard to collection volumes and product management practices. No further due diligence was performed on the information in terms of site visits or other investigations and therefore there is some degree of uncertainty surrounding the end fate of the products.

MARR strives to promote the principles of the pollution prevention hierarchy as much as possible, including design considerations and environmental impact initiatives outlined above in Section 5. According to research conducted for the System Study, 99.9% of major appliances have a lifespan of between 10 and 20 years.⁷ This long life often results in a product having many different owners over its lifetime, usually facilitated by a used appliance retailer 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.

Once an appliance is retired, or reaches end-of-life, it enters the collection system described above in Section 4. 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. Currently there are two mechanical processing facilities that receive end-of-life materials from BC that utilize shredders to break up scrap metal, including major appliances. 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 75% metal. Of this metal, processors report that 98% of ferrous and non-ferrous metal that enters the shredder is recovered and recycled back into the commodities market.⁸

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 that some gaps remained. The vast majority of retailers 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 occurred at the first location to receive the appliance. The refrigerant was removed by a Technician and subsequently sent for recycling or destruction. In 2016, MARR continued conversations with local governments and other industry stakeholders to explore ways to increase the availability and accessibility to qualified technicians for the safe removal of refrigerants, with a focus on rural and remote communities.

⁷ Based on findings from a 2005 report produced by R.W. Beck and Weston for the Association of Home Appliance Manufacturers titled "Recycling, Waste Stream Management and Material Composition of Major Home Appliances" referenced in MARR's "Study on the Operations and Effectiveness of the Major Appliance Collection and Recycling System in British Columbia". The study also included weighted average composition for new and old appliances.

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

Very few appliances reaching end of life contain mercury switches or PCBs though some contain heavy metals (e.g., circuit boards), mercury (i.e., fluorescent lights), compressor oil and polyurethane foam (i.e., insulation).

Table 2 illustrates the downstream management process for each material stream as identified in the System Study.

Table 2: Downstream Management Process of Materials Streams

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

It is estimated that 74% of materials are recycled (mostly ferrous and non-ferrous metal). The remaining 26%, including plastic, glass, rubber and foam, does not undergo further processing, and is currently sent to landfill.⁹ 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.

As major appliance recycling utilizes the existing market-driven system, MARR does not contract directly with collectors or processors, and is therefore not able to obtain information on percentages of materials processed. Volumes and percentages reported are based on estimates derived from survey responses obtained from collectors and processors as part of MARR’s System Study.

⁹ *Ibid*

7. Product Sold, Collected and Recovery Rate

Products Sold

Registered participants of MARR (i.e., producers that have appointed MARR as their “agent” under the Regulation) are required to report their sales and remit Administrative Program Fees (APFs) to MARR. Table 3 displays the number of major appliance units sold in BC by product category between January 1 and December 31, 2016, as reported by MARR participants.

Table 3: Total Sales of Major Appliances in BC (2016)

Product Category	Total Sales in Units
1. Full-Size Refrigerators & Wine Coolers / Beverage Centres	153,282
2. Compact Refrigerators & Wine Coolers / Beverage Centres	74,845
3. Freezers	53,962
4. Room Air Conditioners	28,054
5. Portable Air Conditioners	65,975
6. Dehumidifiers	28,694
7. Clothes Washer	128,165
8. Clothes Dryers	96,538
9. Ranges	102,940
10. Range Hoods & Downdrafts	71,768
11. Built-In Ovens	22,256
12. Built-In & Over the range Microwave Ovens	42,877
13. Surface Cooking Units	22,584
14. Dishwashers	124,069
15. Food Waste Disposers	27,866
16. Trash Compactors	791
17. Electric Water Dispensers	3,042
Total	1,047,708

Products Collected

The results of the System Study Update were used to estimate the volume of end-of-life major appliances collected under the market-driven system. The volume of major appliances available to collect in BC was developed by using a lifespan model to produce theoretical estimates of the quantity entering life annually. The lifespan model combines historical unit sales data for MARR’s 17 product categories with lifespan data and unit weight data by product category to estimate the number of units and the total tonnage of MARR products at end-of-life each year.

The System Study Update estimated that approximately 38,394 tonnes of major appliances were collected in 2016. Table 4 below shows the estimated quantity of large appliances collected by regional district and for the province overall. The quantities listed by regional district reflect the combined tonnes of major appliances collected by local government, non-profit and private sector collectors. Quantities collected by bounty programs, retailers, scavengers and refurbishers are presented separately, with tonnes reported on a provincial basis.

Table 4: Estimated Tonnes of Collected Major Appliances by Region (2016)

Region and Collector Type	Estimated Tonnes Collected ¹⁰
Alberni Clayoquot	90
Bulkley-Nechako	303
Capital	1,712
Cariboo	222
Central Coast	24
Central Kootenay	296
Central Okanagan	1,140
Columbia Shuswap	224
Comox Valley / Strathcona	676
Cowichan Valley	356
East Kootenay	380
Fraser Valley	1,635
Fraser-Fort George	544
Kitimat Stikine	173
Kootenay-Boundary	222
Metro Vancouver	12,132
Mount Waddington	69
Nanaimo	676
North Okanagan	363
Northern Rockies	23
Okanagan Similkameen	378
Peace River	333
Powell River	142
Skeena Queen Charlotte	81

¹⁰ Discrepancies between regional volumes reported and totals are due to rounding of reported values.

Region and Collector Type	Estimated Tonnes Collected ¹⁰
Squamish-Lillooet	397
Sunshine Coast	193
Thompson-Nicola	721
Subtotal	23,506
Other Collectors	Estimated Tonnes Collected ¹⁰
<i>Bounty programs</i>	0
<i>Retailers</i>	12,482
<i>Refurbishers</i>	1,203
<i>Scavengers</i>	1,203
TOTAL	38,394

Collection Rate:

The collection rate of the BC market-driven collection and recycling system can be estimated using a “capture rate” calculation, which compares the estimated weight of products “available to collect” with the estimated weight of products collected in the same year. The System Study Update provided estimates of the weight of products collected (see above). Using the lifespan model described above, it was estimated that 38,925 tonnes reached end-of-life in BC in 2016 and were “available to collect”. Accordingly, the 2016 collection rate was estimated at 98.6% of all discarded appliances, exceeding the program target of 90%. This result is consistent with research completed in other jurisdictions, where it was estimated that the market-driven collection and recycling system for end-of-life appliances achieved a collection rate of over 90%.¹¹ The findings of the 2016 MARR non-financial audit can be found in **Appendix E**.

¹¹ Studies include “*Generation and Diversion of White Goods from Residential Sources in Canada*” (2005) by Canadian Appliance Manufacturers Association, Hansen Research and Communication and Hikene International Policy, “*Recycling, Waste Stream Management and Material Composition of Major Home Appliances*” (2005) by RW Beck and Weston Solutions and “*White Goods Assessment – Ontario*” (2009) by SBR International Inc.

8. Summary of Deposits, Refunds, Revenues and Expenditures

MARR is funded by APFs, which are remitted to MARR by its participants based on the volume of sales of new major appliances sold in BC. The APF fee rates were set by MARR in consultation with industry and retailers. Retailers have the option to recover the fees from consumers as a separate visible environmental handling fee or to include it in the product’s price. Program revenues are applied to the management of the program, including education, outreach and administration. Table 5 sets out the administrative program fee rates for program products effective since August 1, 2013.

A copy of MARR’s audited financial statement can be found in **Appendix F**.

Table 5: Administrative Program Fees for Major Appliances by Product Category

Product Category	APF Per Unit
Refrigerant Appliances	
1. Full-Size Refrigerators & Wine Coolers/Beverage Centres	\$1.25
2. Compact Refrigerators & Wine Coolers/Beverage Centres	\$1.25
3. Freezers	\$1.25
4. Room Air Conditioners	\$1.25
5. Portable Air Conditioners	\$1.25
6. Dehumidifiers	\$1.25
Non-Refrigerant Appliances	
7. Clothes Washer	\$1.10
8. Clothes Dryers	\$1.10
9. Ranges	\$1.10
10. Range Hoods & Downdrafts	\$1.10
11. Built-In Ovens	\$1.10
12. Built-In & Over the range Microwave Ovens	\$1.10
13. Surface Cooking Units	\$1.10
14. Dishwashers	\$1.10
15. Food Waste Disposers	\$1.10
16. Trash Compactors	\$1.10
17. Electric Water Dispensers	\$1.10

9. Plan Performance

Table 6 details the targets and program performance results for the MARR program.

Table 6: Plan Performance Measures and Results

Performance Measure	Target	Results	Remediation Strategies
Capture rate	90%	Target exceeded. 98.6% capture rate	n/a

APPENDIX A: Educational Materials

Major Appliance Recycling Roundtable







Building upon BC's recycling system for major appliances.



Visit marrbc.ca or call 1.800.667.4321 (604.732.9253 in the Lower Mainland) for more information.

The Major Appliance Recycling Roundtable (MARR)

MARR is a not-for-profit industry association developed in response to the requirements of the BC Recycling Regulation. MARR is focused on improving the performance and transparency of the existing collection and recycling system for major appliances in BC.

MARR Funding

The MARR initiatives are funded by Administrative Program Fees (APFs) applied to the sale of new major appliances in BC. APFs may be included in a product's price or displayed as a separate charge.

The APFs cover all costs associated with MARR's initiatives, including public education efforts and the implementation of a processing standard and certification system to ensure end-of-life appliances are responsibly recycled.

Recycling Options

A number of options are typically available to individuals with major appliances to recycle in BC. Many retailers, municipalities and private companies offer collection services, which may include drop-off and/or pick-up options. To find the most convenient recycling option, please call the Recycling Hotline at 1.800.667.4321 (604.732.9253 in the Lower Mainland).

Products and APF Rates

Refrigerant Appliances

APF Rate: \$1.25

- Refrigerators
- Wine Coolers & Beverage Centres
- Freezers & Ice Makers
- Room & Portable Air Conditioners
- Dehumidifiers

Non-Refrigerant Appliances

APF Rate: \$1.10

- Built-in & Over-the-Range Microwave Ovens
- Ranges, Built-in Ovens & Surface Cooking Units
- Range Hoods & Downdrafts
- Dishwashers
- Clothes Washers & Dryers
- Food Waste Disposers
- Electric Water Dispensers
- Trash Compactors

Visit marrbc.ca or call 1.800.667.4321 (604.732.9253 in the Lower Mainland) for more information.

APPENDIX B: Collection Facilities that are Signatories to the MARR Voluntary Processing Standard

Table 7: Collection Facilities that are Signatories to the MARR Voluntary Processing Standard

Collection Facility	City
B-Line Appliance Recycling	Vancouver
Fraser Valley Metal Exchange	Maple Ridge
Regional Recycling – (Old Victoria Road)	Nanaimo
Regional Recycling – (Hayes Road)	Nanaimo
Happy Stan's Recycling Services Ltd.	Port Coquitlam
Everclear Recycling	Mission
Smokey Creek Salvage Ltd.	Nelson
Alberni Clayoquot Regional District (West Coast Landfill)	Ucluelet
Alberni Valley Landfill	Port Alberni
Allied Salvage And Metals Ltd.	Richmond
ASM Squamish Scrap Metal Ltd.	Squamish
Thorsen Creek Waste & Recycling Depot	Bella Coola
Capt'n Crunch Auto Wrecking Ltd.	Abbotsford
ABC Metals Recycling	Campbell River
ABC Metals Recycling	Burnaby
ABC Metals Recycling	Prince George
ABC Metals Recycling	Surrey
ABC Metals Recycling	Kelowna
ABC Metals Recycling	Terrace
ABC Metals Recycling	Fort St. John
ABC Metals Recycling	Nanaimo
Schnitzer Steel	Cassidy
Schnitzer Steel	Campbell River
Schnitzer Steel	Victoria
Schnitzer Steel	Surrey
Schnitzer Steel	Duncan
Williams Scrap Metal Recycling	Victoria

APPENDIX C: Collection Sites that Accept All MARR Program Products

Table 8: Collection Sites that Accept All MARR Program Products by Regional District

Collection Site	City	Regional District	Type
ACRD Recycling Depot	Port Alberni	Alberni-Clayoquot	Municipal
Alberni Foundry Ltd	Port Alberni	Alberni-Clayoquot	Municipal
Alberni Valley Landfill	Port Alberni	Alberni-Clayoquot	Municipal
Sherwood Auto Parts	Port Alberni	Alberni-Clayoquot	Private
West Coast Landfill	Ucluelet	Alberni-Clayoquot	Municipal
Area 'D' Transfer Station	Fraser Lake	Bulkley-Nechako	Municipal
Burns Lake Transfer Station	Burns Lake	Bulkley-Nechako	Municipal
Fort St. James Transfer Station	Fort St James	Bulkley-Nechako	Municipal
Granisle Transfer Station	Granisle	Bulkley-Nechako	Municipal
Knockholt Sub-Regional Landfill	Houston	Bulkley-Nechako	Municipal
Smithers-Telkwa Transfer Station	Smithers	Bulkley-Nechako	Municipal
Southside Transfer Station	Grassy Plains	Bulkley-Nechako	Municipal
Vanderhoof Transfer Station	Vanderhoof	Bulkley-Nechako	Municipal
Brentwood Auto and Metal Recyclers	Saanichton	Capital	Private
Galiano Recycling	Galiano Island	Capital	Municipal
Hartland Landfill	Saanich, BC	Capital	Municipal
Pender Island Recycling	Pender Island	Capital	Municipal
Port Renfrew Recycling Depot	Port Renfrew	Capital	Municipal
Salt Spring Island Recycling Depot	Salt Spring Island	Capital	Municipal
Westshore Auto Recycling /AMP Disposal	Sooke	Capital	Private
Williams Scrap Metal Recycling	Victoria	Capital	Private
100 Mile House Refuse Site	100 Mile House	Cariboo	Municipal
150 Mile House Transfer Station	150 Mile House	Cariboo	Municipal
Alexis Creek Transfer Station	Alexis Creek	Cariboo	Municipal
Baker Creek Transfer Station	Baker Creek	Cariboo	Municipal
Big Lake Refuse Site	Big Lake	Cariboo	Municipal
Cochin Refuse Site	Cochin Lake	Cariboo	Municipal
Forest Grove Transfer Station	Forest Grove	Cariboo	Municipal
Frost Creek	Williams Lake	Cariboo	Municipal
Horsefly Transfer Station	150 Mile House	Cariboo	Municipal
Kleena Kleene Refuse Site	Kleena Kleene	Cariboo	Municipal
Lac La Hache Transfer Station	Lac La Hache	Cariboo	Municipal
Likely Refuse Site	Likely	Cariboo	Municipal
Mcleese Lake Transfer Station	Mcleese Lake	Cariboo	Municipal
Nazko Refuse Site	Nazko	Cariboo	Municipal
Nemaiah Valley Refuse Site	Nemaiah	Cariboo	Municipal

Collection Site	City	Regional District	Type
Puntzi Lake Refuse Site	Puntzi	Cariboo	Municipal
Quesnel Landfill	Quesnel	Cariboo	Municipal
Riske Creek Transfer Station	Riske Creek	Cariboo	Municipal
Sheridan Lake Refuse Site	Canim Lake	Cariboo	Municipal
Tatla Lake Refuse Site	Tatla Lake	Cariboo	Municipal
Watch Lake Refuse Site	Lone Butte	Cariboo	Municipal
Wells Refuse Site	Wells	Cariboo	Municipal
West Chilcotin Refuse Site	West Chilcotin	Cariboo	Municipal
Wildwood Transfer Station	Williams Lake	Cariboo	Municipal
Williams Lake Scrap Metal	Williams Lake	Cariboo	Private
Thorsen Creek Waste and Recycling Center	Bella Coola	Central Coast	Municipal
Balfour Towing and Salvage	Balfour	Central Kootenay	Private
Balfour Transfer Station	Balfour	Central Kootenay	Municipal
Burton Transfer Station	Burton	Central Kootenay	Municipal
Central Landfill	Salmo	Central Kootenay	Municipal
Crawford Bay Transfer Station	Crawford Bay	Central Kootenay	Municipal
Creston Landfill	Creston	Central Kootenay	Municipal
Earls Towing	Creston	Central Kootenay	Private
Edgewood Landfill	Edgewood	Central Kootenay	Municipal
Grohman Narrows Transfer Station	Nelson	Central Kootenay	Municipal
Kaslo Transfer Station	Kaslo	Central Kootenay	Municipal
Marblehead Transfer Station	Meadow Creek	Central Kootenay	Municipal
Nakusp Landfill	Nakusp	Central Kootenay	Municipal
Ootischenia Landfill	Castlegar	Central Kootenay	Municipal
Rosebery Transfer Station	New Denver	Central Kootenay	Municipal
Scrap King Auto Wrecking & Towing Ltd	Salmo	Central Kootenay	Private
Slocan Transfer Station	Slocan	Central Kootenay	Municipal
Smokey Creek Salvage Ltd.	Nelson	Central Kootenay	Private
ABC Metals Recycling	Kelowna	Central Okanagan	Private
Glenmore Landfill	Kelowna	Central Okanagan	Municipal
Knox Mountain Metals	Kelowna	Central Okanagan	Private
Planet Earth Recycling	West Kelowna	Central Okanagan	Private
Westside Residential Disposal & Recycling Centre	West Kelowna	Central Okanagan	Private
Falkland Transfer Station	Falkland	Columbia-Shuswap	Municipal
Glenemma Transfer Station	Salmon Arm	Columbia-Shuswap	Municipal
Golden Landfill	Golden	Columbia-Shuswap	Municipal
Malakwa Transfer Station	Malakwa	Columbia-Shuswap	Municipal
MC Metal Recycling	Revelstoke	Columbia-Shuswap	Private
Parson Transfer Station	Skookumchuck	Columbia-Shuswap	Municipal
Revelstoke Landfill	Revelstoke	Columbia-Shuswap	Municipal

Collection Site	City	Regional District	Type
Salmon Arm Landfill	Salmon Arm	Columbia-Shuswap	Municipal
Scotch Creek Transfer Station	Scotch Creek	Columbia-Shuswap	Municipal
Seymour Arm Transfer Station	Seymour Arm	Columbia-Shuswap	Municipal
Sicamous Landfill	Sicamous	Columbia-Shuswap	Municipal
Skimikin Transfer Station	Chase	Columbia-Shuswap	Municipal
Starlite Auto	Sorrento	Columbia-Shuswap	Private
Trout Lake Transfer Station	Trout Lake	Columbia-Shuswap	Municipal
Comox Valley Waste Management Centre	Cumberland	Comox Valley	Municipal
Hornby Island Recycling Depot	Hornby Island	Comox Valley	Municipal
Bings Creek SWM Complex	Duncan	Cowichan Valley	Private
Meade Creek Recycling Dropoff Depot	Lake Cowichan	Cowichan Valley	Municipal
Peerless Road Recycling Dropoff Depot	Ladysmith	Cowichan Valley	Municipal
Schnitzer Steel Pacific Recycling	Duncan	Cowichan Valley	Private
Canal Flats	Canal Flats	East Kootenay	Municipal
Columbia Recycle Ltd	Kimberly	East Kootenay	Private
Columbia Valley Landfill	Windermere	East Kootenay	Municipal
Cranbrook Transfer station	Cranbrook	East Kootenay	Municipal
Elkford Transfer Station	Elkford	East Kootenay	Municipal
Fernie Transfer Station	Fernie	East Kootenay	Municipal
Kimberley Transfer station	Kimberley	East Kootenay	Municipal
Kool Country Auto Parts	Invermere	East Kootenay	Private
Sparwood Transfer Station	Sparwood	East Kootenay	Municipal
Tie Lake Transfer Station	Jaffray	East Kootenay	Municipal
Wasa Transfer Station	Wasa	East Kootenay	Municipal
Bailey Landfill	Chilliwack	Fraser Valley	Municipal
Capt'n Crunch Auto Wrecking Ltd.	Abbotsford	Fraser Valley	Private
CCON Steel Inc.	Abbotsford	Fraser Valley	Private
Chaumox Landfill	Boston Bar	Fraser Valley	Municipal
Everclear Recycling	Mission	Fraser Valley	Municipal
Goodies Trading Ltd	Chilliwack	Fraser Valley	Private
Hope Landfill/Transfer Station	Hope	Fraser Valley	Municipal
Matsqui Transfer Station	Abbotsford	Fraser Valley	Municipal
McNeils DBA Ideal U Pick	Chilliwack	Fraser Valley	Private
Minnie's Pit/Mission Landfill	Mission	Fraser Valley	Municipal
Regional Recycling Abbotsford	Abbotsford	Fraser Valley	Private
Sunshine Valley Transfer Station	Cawston	Fraser Valley	Municipal
ABC Metals Recycling	Prince George	Fraser-Fort George	Private
A-Star Automotive Recyclers Ltd.	Prince George	Fraser-Fort George	Private
Foothills Boulevard Regional Landfill	Prince George	Fraser-Fort George	Municipal
Mackenzie Landfill	Mackenzie	Fraser-Fort George	Municipal

Collection Site	City	Regional District	Type
ABC Metals Recycling	Terrace	Kitimat-Stikine	Private
Hazelton Landfill	Hazelton	Kitimat-Stikine	Municipal
Kitimat Landfill	Kitimat	Kitimat-Stikine	Municipal
Stewart Landfill	Stewart	Kitimat-Stikine	Municipal
Terrace Landfill	Terrace	Kitimat-Stikine	Municipal
Beaverdell Transfer Station	Beaverdell	Kootenay Boundary	Municipal
Big Y Auto	Grand Forks	Kootenay Boundary	Private
Christina Lake Transfer Station	Christina Lake	Kootenay Boundary	Municipal
Columbia Recycle	Trail	Kootenay Boundary	Private
Grand Forks and Electoral Area B Landfill	Grand Forks	Kootenay Boundary	Municipal
Rock Creek Transfer Station	Rock Creek	Kootenay Boundary	Municipal
West Boundary Landfill	Greenwood	Kootenay Boundary	Municipal
AABC Recycler's Group	Richmond	Metro Vancouver	Private
ABC Metals Recycling	Surrey	Metro Vancouver	Private
ABC Metals Recycling	Burnaby	Metro Vancouver	Private
Burnaby Recycling Depot	Burnaby	Metro Vancouver	Municipal
Capital Salvage Co	Vancouver	Metro Vancouver	Private
Coquitlam Transfer Station	Coquitlam	Metro Vancouver	Municipal
Davis Trading	Vancouver	Metro Vancouver	Private
Ecowaste	Richmond	Metro Vancouver	Private
Fraser Valley Metal Exchange	Maple Ridge	Metro Vancouver	Private
Happy Stan's Recycling Services Ltd.	Port Coquitlam	Metro Vancouver	Private
Mac's Traders Inc.	Langley	Metro Vancouver	Private
New West Recycling Depot	New Westminster	Metro Vancouver	Municipal
North Shore Transfer Station	North Vancouver	Metro Vancouver	Municipal
Regional Recycling	Surrey	Metro Vancouver	Private
Regional Recycling Burnaby	Burnaby	Metro Vancouver	Private
Regional Recycling Richmond	Richmond	Metro Vancouver	Private
Regional Recycling Vancouver	Vancouver	Metro Vancouver	Private
Richmond Recycling Depot	Richmond	Metro Vancouver	Municipal
Ridge Meadows Recycling	Maple Ridge	Metro Vancouver	Municipal
Schnitzer Steel Pacific Recycling	Surrey	Metro Vancouver	Private
Surrey Transfer Station	Surrey	Metro Vancouver	Municipal
Township of Langley	Aldergrove	Metro Vancouver	Municipal
Vancouver Landfill	Delta	Metro Vancouver	Municipal
Vancouver South Transfer Station	Vancouver	Metro Vancouver	Municipal
Westcoast Metal Recycling	Langley	Metro Vancouver	Private
7 Mile Landfill	Black Creek	Mount Waddington	Municipal
Alert Bay Recycling Depot	Alert Bay	Mount Waddington	Municipal
Fox Disposal Services Ltd	Port Hardy	Mount Waddington	Private

Collection Site	City	Regional District	Type
Malcolm Island Transfer Station	Sointula	Mount Waddington	Municipal
Village of Port Alice	Port Alice	Mount Waddington	Municipal
Woss Transfer Station	Woss	Mount Waddington	Municipal
Carl's Metal Salvage	Nanaimo	Nanaimo	Private
Church Road Transfer Station	Parksville	Nanaimo	Municipal
Gabriola Island Recycling Organization	Gabriola	Nanaimo	Municipal
Nanaimo Recycling Exchange Society	Nanaimo	Nanaimo	Municipal
Parksville Bottle & Recycling Depot	Parksville	Nanaimo	Private
Regional Landfill	Nanaimo	Nanaimo	Municipal
Regional Recycling Nanaimo	Nanaimo	Nanaimo	Private
Regional Recycling Nanaimo Bottle Depot - Fremont	Nanaimo	Nanaimo	Private
Armstrong-Spallumcheen Regional Disposal Facility	Armstrong	North Okanagan	Municipal
Cherryville & Area E Regional Disposal Facility	Cherryville	North Okanagan	Municipal
Dead Or Alive Auto & Metals Recycling	Vernon	North Okanagan	Private
Greater Vernon Recycling and Disposal Facility	Vernon	North Okanagan	Municipal
Kingfisher Transfer Station	Kingfisher-Enderby	North Okanagan	Municipal
Lumby and Area D Regional Disposal Facility	Lumby	North Okanagan	Municipal
NRRM Landfill	Fort Nelson	Northern Rockies	Municipal
Action Steel Sales	Penticton	Okanagan-Similkameen	Private
Campbell Mountain Landfill	Penticton	Okanagan-Similkameen	Municipal
Keremeos Transfer Station	Keremos	Okanagan-Similkameen	Municipal
Okanagan Falls Landfill	Okanagan Falls	Okanagan-Similkameen	Municipal
Oliver Landfill	Oliver	Okanagan-Similkameen	Municipal
Osoyoos & District Sanitary Landfill	Osoyoos	Okanagan-Similkameen	Private
Princeton landfill	Princeton	Okanagan-Similkameen	Municipal
Puds Auto Wrecking Ltd	Osoyoos	Okanagan-Similkameen	Private
Summerland Landfill	Summerland	Okanagan-Similkameen	Municipal
ABC Metals Recycling	Fort St John	Peace River	Private
Bessborough Landfill	Dawson Creek	Peace River	Municipal
Cecil Lake	Fort St John	Peace River	Municipal
Chetwynd Landfill	Chetwynd	Peace River	Municipal
Dawson Creek Transfer Station	Dawson Creek	Peace River	Municipal
Hudson's Hope Transfer Station	Hudson's Hope	Peace River	Municipal
Kelly Lake Transfer Station	Tomslake	Peace River	Municipal
North Peace Regional Landfill	Charlie Lake	Peace River	Municipal
Prespatou Transfer Station	Prespatou	Peace River	Municipal
Rose Prairie Transfer Station	Rose Prairie	Peace River	Municipal
Tomslake Transfer Station	Tomslake	Peace River	Municipal
Tumbler Ridge Transfer Station	Groundbirch	Peace River	Municipal
Wonowon Transfer Station	Wonowon	Peace River	Municipal

Collection Site	City	Regional District	Type
Augusta Recyclers Inc.	Powell River	Powell River	Private
Blackpoint Auto Recyclers	Powell River	Powell River	Private
Texada TS	Texada Island	Powell River	Municipal
Islands Landfill	Port Clements	Skeena-Queen Charlotte	Municipal
Masset TS	Masset	Skeena-Queen Charlotte	Municipal
Sandspit TS	Sandspit	Skeena-Queen Charlotte	Municipal
Skeena-Queen Charlotte Regional Recycling Depot	Prince Rupert	Skeena-Queen Charlotte	Municipal
Skidegate TS	Skidegate	Skeena-Queen Charlotte	Municipal
ASM Squamish Scrap Metal Ltd.	Squamish	Squamish-Lillooet	Private
Gold Bridge Transfer Station	Gold Bridge	Squamish-Lillooet	Municipal
Lillooet Landfill	Lillooet	Squamish-Lillooet	Municipal
Pemberton Transfer Station	Pemberton	Squamish-Lillooet	Municipal
Regional Recycling Whistler	Whistler	Squamish-Lillooet	Private
Squamish Landfill	Squamish	Squamish-Lillooet	Municipal
Whistler Transfer Station	Whistler	Squamish-Lillooet	Municipal
ABC Metals Recycling	Campbell River	Strathcona	Private
Campbell River Waste Management Centre	Campbell River	Strathcona	Municipal
Gold River Waste Management Centre	Gold River	Strathcona	Municipal
Schnitzer Steel	Campbell River	Strathcona	Private
Village of Tahsis Landfill	Tahsis	Strathcona	Municipal
Village of Zeballos Landfill	Zeballos	Strathcona	Municipal
Zeballos Public Works Yard (Metal Pile)	Zeballos	Strathcona	Municipal
Gibsons Disposal	Gibsons	Sunshine Coast	Municipal
Pender Harbour Landfill	Garden Bay	Sunshine Coast	Municipal
Sechelt Landfill	Sechelt	Sunshine Coast	Municipal
70 Mile house	70 Mile House	Thompson-Nicola	Municipal
Barnhartvale Landfill	Kamloops	Thompson-Nicola	Municipal
Blue River	Blue River	Thompson-Nicola	Municipal
Clearwater Eco depot	Clearwater	Thompson-Nicola	Municipal
Clinton	Clinton	Thompson-Nicola	Municipal
Heffley Creek Eco depot	Heffley Creek	Thompson-Nicola	Municipal
Kamloops Scrap Iron Ltd	Kamloops	Thompson-Nicola	Private
Knutsford	Knutsford	Thompson-Nicola	Municipal
Logan Lake	Logan Lake	Thompson-Nicola	Municipal
Loon Lake	Clinton	Thompson-Nicola	Municipal
Louis Creek Eco depot	Barriere	Thompson-Nicola	Municipal
Lower Nicola Eco Depot	Merritt	Thompson-Nicola	Municipal
Lytton	Lytton	Thompson-Nicola	Municipal
Mission Flats Landfill	Kamloops	Thompson-Nicola	Municipal
Paul Lake	Kamloops	Thompson-Nicola	Municipal

Collection Site	City	Regional District	Type
Savona	Savona	Thompson-Nicola	Municipal
South Thompson Eco Depot	Chase	Thompson-Nicola	Municipal
Spences Bridges Transfer Station	Spences Bridges	Thompson-Nicola	Municipal
Westwold	Westwold	Thompson-Nicola	Municipal

Table 9: Collection Sites that Accept All MARR Program Product Added in 2016

Collection Facility	City	Regional District	Type
None for 2016			

Table 10: Collection Sites No Longer Accepting Some or All MARR Program Product

Collection Site	City	Regional District	Type
J. D. Towing	Grand Forks	Kootenay Boundary	Private
Ellice Recycle Ltd	Victoria	Capital	Private
Thornhill Landfill	Thornhill	Kitimat-Stikine	Municipal
Boswell Transfer Station	Boswell	Central Kootenay	Municipal

APPENDIX D: Number of Collection Sites that Accept All Major Appliances by Regional District

Table 11: Number of Collection Sites that Accept All MARR Appliances by Regional District

Regional District	Number of Sites
Alberni-Clayoquot	5
Bulkley-Nechako	8
Capital	8
Cariboo	25
Central Coast	1
Central Kootenay	17
Central Okanagan	5
Columbia-Shuswap	14
Comox	2
Cowichan Valley	4
East Kootenay	11
Fraser-Fort George	4
Fraser Valley	12
GVRD (Metro Vancouver)	25
Kitimat-Stikine	5
Kootenay Boundary	7
Mt. Waddington	6
Nanaimo	8
North Okanagan	6
Northern Rockies	1
Okanagan-Similkameen	9
Peace River	13
Powell River	3
Skeena-Queen Charlotte	5
Squamish-Lillooet	7
Strathcona	7
Sunshine Coast	3
Thompson-Nicola	19
TOTAL	240

APPENDIX E: 2016 MARR Non-Financial Audit

MAJOR APPLIANCE RECYCLING ROUNDTABLE

**INDEPENDENT REASONABLE ASSURANCE
REPORT**

31 DECEMBER 2016





1500 – 1090 West Georgia Street
Vancouver, B.C. V6E 3V7
Tel: 604-684-1101 Fax: 604-684-7937
E-mail: admin@rolfebenson.com

INDEPENDENT REASONABLE ASSURANCE REPORT

To the Directors of
Major Appliance Recycling Roundtable,

We have been engaged by Major Appliance Recycling Roundtable (“MARR”) to perform a reasonable assurance engagement in respect of the following information (the “Selected Information”), detailed in Appendix 1, and also included within MARR’s Annual Report to the Ministry of Environment for the year ended 31 December 2016:

- Section 4 Collection System and Facilities and Appendix C - the location of collection facilities, and any changes in the number and location of collection facilities from the previous report in accordance with Section 8(2)(b) of BC Regulation 449/2004 (the “Recycling Regulation”);
- Section 6 Pollution Prevention Hierarchy and Product/Component Management - the description of how the recovered product was managed in accordance with the pollution prevention hierarchy under Section 8(2)(d) of the Recycling Regulation;
- Section 7 Products Collected - the description of how total amounts of the producer’s product collected has been calculated in accordance with Section 8(2)(e) of the Recycling Regulation; and
- Section 9 Plan Performance - the description of performance for the year in relation to targets in the approved stewardship plan under Section 8(2)(b), (d) and (e) of the Recycling Regulation.

Our reasonable assurance engagement does not constitute a legal determination on MARR’s compliance with Sections 8(2)(b), (d) and (e) of the Recycling Regulation.



Responsibilities

Preparation and fair presentation of the Selected Information in accordance with the evaluation criteria as listed in Appendix 1 is the responsibility of MARR's management. Management is also responsible for such internal control as management determines is necessary to enable the preparation of the Selected Information such that it is free from material misstatement. Furthermore management is responsible for preparation of suitable evaluation criteria in accordance with the Guide to Third Party Assurance Requirements for Non-Financial Information in Annual Reports – 2016 Reporting Year dated March 2017 as specified by the Director under section 8(2)(h) of the Recycling Regulation of the Province of British Columbia. The Ministry of Environment has granted MARR certain exemptions from these guidelines.

Our responsibility is to express an opinion on the Selected Information based on the procedures we have performed and the evidence we have obtained.

Evaluation Criteria

The evaluation criteria presented in Appendix 1 are an integral part of the Selected Information and address the relevance, completeness, reliability, neutrality and understandability of the Selected Information.

Scope of the Assurance Procedures

We carried out our reasonable assurance engagement in accordance with the International Standard on Assurance Engagements 3000 (ISAE 3000) published by the International Federation of Accountants. This Standard requires that we comply with independence requirements and plan and perform the engagement to obtain reasonable assurance about whether the Selected Information is free of material misstatement.

A reasonable assurance engagement includes examining, on a test basis, evidence supporting the amounts and disclosures within the Selected Information. The procedures selected depend on our judgement, including the assessment of the risks of material misstatement in the Selected Information due to omissions, misrepresentations and errors. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the Selected Information in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing a conclusion on the effectiveness of the entity's internal control. A reasonable assurance engagement also includes assessing the evaluation criteria used and significant estimates made by management, as well as evaluating the overall presentation of the Selected Information. The main elements of our work were:

- Gain an understanding of the data collection, monitoring and reporting processes through inquiries of management;
- Evaluating the qualifications and independence of contractors used to help prepare the 2016 System Study Update to the Study on the Operations and Effectiveness of the Major Appliance Collection and Recycling System in British Columbia (the "System Study Update");
- Testing the processes, documents and records on a sample basis;
- Re-calculating quantitative data on a sample basis as it pertains to the Selected Information;
- Ensuring the Selected Information is presented consistently in the Annual Report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

**Inherent Limitations**

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the Selected Information and the methods used for determining and calculating such information. Qualitative interpretations of relevance, materiality and the accuracy of data are subject to individual assumptions and judgments. Furthermore, the nature and methods used to determine such information, as well the evaluation criteria and the precision thereof, may change over time. It is important to read our report in the context of evaluation criteria.

Conclusion

In our opinion, the Selected Information within MARR's Annual Report for the year ended 31 December 2016 presents fairly, in all material respects, in accordance with the evaluation criteria listed in Appendix 1:

- the location of collection facilities, and any changes in the number and location of collection facilities from the previous report in accordance with Section 8(2)(b) of the Recycling Regulation;
- the description of how the recovered product was managed in accordance with the pollution prevention hierarchy under Section 8(2)(d) of the Recycling Regulation;
- the description of how total amounts of the producer's product collected has been calculated in accordance with Section 8(2)(e) of the Recycling Program; and
- the description of performance for the year in relation to targets in the approved stewardship plan under Section 8(2)(b), (d) and (e) of the Recycling Regulation.

Emphasis of Matter

Without qualifying our opinion, the following should be noted regarding the information contained in the Annual Report:

1. The Selected Information included in Section 4 - Collection System and Facilities, and Section 7 - specifically relating to Products Collected and Section 9 - Plan Performance is based on information included in the System Study Update as described in Appendix 1. Additionally, the information included in Section 6 - Pollution Prevention Hierarchy and Product / Component Management is based on information in the 2013 System Study and was not included in the System Study Update. As such, there is uncertainty surrounding the information presented.
2. MARR does not present a recovery rate in the Annual Report. As such, the total amount of producer's products sold as presented on Table 3 - Total Sales of Major Appliances in BC (2016) on page 14 of the Annual Report has not been included in the Selected Information in accordance with the Guide to Third Party Assurance Requirements for Non-Financial Information in Annual Reports – 2016 Reporting Year dated March 2017 as specified by the Director under section 8(2)(h) of the Recycling Regulation of the Province of British Columbia.
3. Section 9 Plan Performance of the Annual Report contains a performance target for capture rate which is not included in the scope of our reasonable assurance engagement for Section 8(2)(e) of the Recycling Regulation, and as such, this is not included in the Selected Information. Section 7.1 of MARR's approved stewardship plan as issued on 29 June 2012 incorrectly makes reference to a recovery rate target whereas the actual target presented in the stewardship plan is for capture rate.



4. As noted in the Responsibilities section of the audit report, MARR is required to prepare suitable evaluation criteria in accordance with the Guide to Third Party Assurance Requirements for Non-Financial Information in Annual Reports – 2016 Reporting Year dated March 2017. For the 2016 reporting year, The Ministry of Environment has granted MARR an exemption from adopting the definition of reuse, recycling, material and energy recovery, landfill, final disposition and primary service provider as defined in SPE-890-15 - A Guideline for Accountable Management of End-of-life Materials.

Other Matter

Our report has been prepared solely for the purposes of management's stewardship under the Recycling Regulation and is not intended to be and should not be used for any other purpose. Our duties in relation to this report are owed solely to MARR, and accordingly, we do not accept any responsibility for loss occasioned to any other party acting or refraining from acting based on this report.

Rolfe, Benson LLP

CHARTERED PROFESSIONAL ACCOUNTANTS

23 June 2017
Vancouver, Canada

Appendix 1

Evaluation Criteria

Collection facilities

Specific disclosures in the annual stewardship report for which evaluation criteria were developed	
Disclosure per Annual Report	Reference
Total number of collection sites – 240	Section 4 Collection System and Facilities - Table 1 – Estimate of Sites that Accepted All MARR Products (2016) on page 8; Appendix C - Table 8 – Collection Sites that Accept All MARR Program Products by Regional District on page 21-27
“The list of collectors provided is based on reports of which sites were accepting major appliances and represents the best available information as of March 2017. This list is not exhaustive, nor guaranteed to be current, due to ongoing changes in business operations. The list only includes local government and private/non-profit collector drop off sites, and does not include the numerous collection options that may be offered through retailers, utility bounty programs or other possible pick up options.”	Section 4 Collection System and Facilities – Footnote 2 on page 8
Decrease in the number of collection facilities in 2016 – 1.6% (4 collection facilities)	Section 4 Collection System and Facilities on page 8

The following evaluation criteria were applied to the assessment of the location of collection facilities, and any changes in the number and location of collection facilities from the previous report in accordance with Section 8(2)(b) of the Recycling Regulation:

- The number and location of collection facilities have been determined using the information included in *The Study on the Operations and Effectiveness of the Major Appliance Collection and Recycling System in British Columbia*, dated May 8, 2014 (“2013 System Study”) which was originally prepared for the 2013 fiscal year and has been updated to reflect 2016 fiscal year data (“System Study Update”).
- The content of the System Study Update appears to be sufficient to meet the reporting requirements by MARR to the British Columbia Ministry of Environment with respect to the number and location of collection facilities.
- The System Study Update was performed by a third party consultant who also provided a letter of assurance thereon.
- The third party consultant involved in the System Study Update is independent from MARR and has no business relationship outside of the System Study Update. Their qualifications appear sufficient to be able to prepare the report.

- The number and location of collection facilities as disclosed in the Annual Report agrees with the information included in the System Study Update.
- The change in the number of collection facilities is determined by comparing the estimated number of collection facilities between the 2015 Annual Report and the System Study Update.
- The listing of collection facilities only includes locations that accept all major appliances under the MARR program.

Pollution prevention hierarchy

Specific disclosures in the annual stewardship report for which evaluation criteria were developed	
Disclosure per Annual Report	Reference
<p>“The following information is based on the understanding of the free market system, as well as findings from the System Study completed by MARR in 2014 reflecting the 2013 fiscal year. The System Study involved surveying industry participants with regard to collection volumes and product management practices. No further due diligence was performed on the information in terms of site visits or other investigations and therefore there is some degree of uncertainty surrounding the end fate of the products.”</p>	<p>Section 6 Pollution Prevention Hierarchy and Product/Component Management on page 12</p>
<p>“As major appliance recycling utilizes the existing market-driven system, MARR does not contract directly with collectors or processors, and is therefore not able to obtain information on percentages of materials processed. Volumes and percentages reported are based on estimates derived from survey responses obtained from collectors and processors as part of MARR’s System Study.”</p>	<p>Section 6 Pollution Prevention Hierarchy and Product/Component Management on page 13</p>
<p>“The material composition of major appliances is reported to be approximately 75% metal. Of this metal, processors report that 98% of ferrous and non-ferrous metal that enters the shredder is recovered and recycled back into the commodities market.”</p> <p>“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 that some gaps remained. The vast majority of retailers 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</p>	<p>Section 6 Pollution Prevention Hierarchy and Product/Component Management on page 12 and 13</p>

<p>refrigerants as part of the scrap metal removal contract. Refrigerant removal generally occurred at the first location to receive the appliance. The refrigerant was removed by a Technician and subsequently sent for recycling or destruction. In 2016, MARR continued conversations with local governments and other industry stakeholders to explore ways to increase the availability and accessibility to qualified technicians for the safe removal of refrigerants, with a focus on rural and remote communities.”</p> <p>“Very few appliances reaching end of life contain mercury switches or PCBs though some contain heavy metals (e.g., circuit boards), mercury (i.e., fluorescent lights), compressor oil and polyurethane foam (i.e., insulation).”</p> <p>“It is estimated that 74% of materials are recycled (mostly ferrous and non-ferrous metal). The remaining 26%, including plastic, glass, rubber and foam, does not undergo further processing, and is currently sent to landfill.”</p>	
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The following evaluation criteria were applied to the assessment of how the recovered product is managed in accordance with the pollution prevention hierarchy in accordance with Section 8(2)(d) of the Recycling Regulation:

- The information on product management has been determined based on a general understanding of the free market collection system and by using the information included in *The Study on the Operations and Effectiveness of the Major Appliance Collection and Recycling System in British Columbia*, dated May 8, 2014 (“2013 System Study”) which was originally prepared for the 2013 fiscal year. The Systems Study Update for the 2016 fiscal year did not include an extrapolation of the product management data to the 2016 fiscal year.
- The content of the 2013 System Study appears to be sufficient to meet the reporting requirements by MARR to the British Columbia Ministry of Environment with respect to the product management.
- The third party consultant involved in the 2013 System Study is independent from MARR and has no business relationship outside of the System Study. Their qualifications appear sufficient to be able to prepare the report.

Product collected

Specific disclosures in the annual stewardship report for which evaluation criteria were developed	
Disclosure per Annual Report	Reference
<p>Product collected Estimated tonnes of product collected – 38,394</p>	<p>Section 7 Product Sold and Collected and Recovery Rate - Table 4: Estimated Tonnes of Collected Major Appliances by Region (2016) on pages 15 and 16</p>

The following evaluation criteria were applied to the assessment of the description of how total amounts of the producer's product collected has been calculated in accordance with Section 8(2)(e) of the Recycling Regulation:

Product Collected:

- The Estimated Tonnes of Collected Major Appliances have been determined using the information included in *The Study on the Operations and Effectiveness of the Major Appliance Collection and Recycling System in British Columbia*, dated May 8, 2014 ("2013 System Study") which was originally prepared for the 2013 fiscal year and has been updated to reflect 2016 fiscal year data ("System Study Update").
- The content of the System Study Update appears to be sufficient to meet the reporting requirements by MARR to the British Columbia Ministry of Environment with respect to the product collected.
- The System Study Update was performed by MARR with the support of a third party consultant who reviewed the procedures, methods and calculations used in the System Study Update and provided a letter of assurance thereon.
- The third party consultant involved in the System Study Update is independent from MARR and has no business relationship outside of the System Study Update. Their qualifications appear sufficient to be able to prepare the report.
- The volumes of product collected as disclosed in the Annual Report agree with the estimated collection volumes as reported in the System Study Update.

APPENDIX F: 2016 MARR Financial Statements

MAJOR APPLIANCE RECYCLING ROUNDTABLE

FINANCIAL STATEMENTS

31 DECEMBER 2016

MAJOR APPLIANCE RECYCLING ROUNDTABLE

Financial Statements

For the year ended 31 December 2016

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ROLFE, BENSON LLP

CHARTERED PROFESSIONAL ACCOUNTANTS

1500 – 1090 West Georgia Street
Vancouver, B.C. V6E 3V7
Tel: 604-684-1101 Fax: 604-684-7937
E-mail: admin@rolfebenson.com

INDEPENDENT AUDITORS' REPORT

To the Members,
Major Appliance Recycling Roundtable

Report on the Financial Statements

We have audited the accompanying financial statements of Major Appliance Recycling Roundtable, which comprise the statement of financial position as at 31 December 2016, and the statements of changes in net assets, operations and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the organization's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the organization's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.



INDEPENDENT AUDITORS' REPORT - Continued

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Major Appliance Recycling Roundtable as at 31 December 2016, and the results of its operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.

Rolfe, Benson LLP

CHARTERED PROFESSIONAL ACCOUNTANTS

Vancouver, Canada
1 June 2017

MAJOR APPLIANCE RECYCLING ROUNDTABLE
Statement of Financial Position
31 December 2016

	2016	2015
Assets		
Current		
Cash and cash equivalents	\$ 1,010,810	\$ 574,629
Accounts receivable	327,329	232,590
Prepaid expenses	5,634	2,706
GST receivable	7,922	-
	1,351,695	809,925
Reserve Fund (Note 4)	300,813	300,210
Equipment (Note 5)	1,097	-
	\$ 1,653,605	\$ 1,110,135

Liabilities

Current		
Accounts payable and accrued liabilities	\$ 81,667	\$ 59,249
GST payable	-	2,755
	81,667	62,004

Net Assets

Unrestricted	1,271,125	747,921
Internally Restricted Reserve (Note 4)	300,813	300,210
	1,571,938	1,048,131
	\$ 1,653,605	\$ 1,110,135

APPROVED BY THE DIRECTORS:

_____ Director

_____ Director

The accompanying notes are an integral part of these financial statements.

MAJOR APPLIANCE RECYCLING ROUNDTABLE
Statement of Changes in Net Assets
For the year ended 31 December 2016

	Unrestricted	Internally Restricted Reserve	Total 2016	Total 2015
Balance - beginning of year	\$ 747,921	\$ 300,210	\$ 1,048,131	\$ 420,669
Excess of revenues over expenses for the year	523,807	-	523,807	627,462
Transfer to reserve (Note 4)	(603)	603	-	-
Balance - end of year	\$ 1,271,125	\$ 300,813	\$ 1,571,938	\$ 1,048,131

The accompanying notes are an integral part of these financial statements.

MAJOR APPLIANCE RECYCLING ROUNDTABLE
Statement of Operations
For the year ended 31 December 2016

	2016	2015
Revenues	\$ 1,232,250	\$ 1,095,045
Expenses		
Program administration	470,893	422,306
Research and studies	211,458	17,891
Communications	26,092	27,386
	<u>708,443</u>	<u>467,583</u>
Excess of revenues over expenses for the year	\$ 523,807	\$ 627,462

The accompanying notes are an integral part of these financial statements.

MAJOR APPLIANCE RECYCLING ROUNDTABLE
Statement of Cash Flows
For the year ended 31 December 2016

	2016	2015
Cash provided by (used in):		
Operating activities		
Excess of revenues over expenses for the year	\$ 523,807	\$ 627,462
Item not involving cash		
Amortization	<u>1,096</u>	<u>-</u>
	524,903	627,462
Changes in non-cash working capital balances		
Accounts receivable	(94,739)	51,485
Prepaid expenses	(2,928)	(475)
GST	(10,677)	(25,080)
Accounts payable and accrued liabilities	<u>22,418</u>	<u>18,526</u>
	438,977	671,918
Investing activities		
Transfer to reserve fund	(603)	(300,210)
Purchase of equipment	<u>(2,193)</u>	<u>-</u>
	(2,796)	(300,210)
Net increase in cash	436,181	371,708
Cash and cash equivalents - beginning of year	<u>574,629</u>	<u>202,921</u>
Cash and cash equivalents - end of year	\$ 1,010,810	\$ 574,629
Cash and cash equivalents consists of:		
Cash	\$ 1,003,310	\$ 574,629
Term deposit	<u>7,500</u>	<u>-</u>
	\$ 1,010,810	\$ 574,629

The accompanying notes are an integral part of these financial statements.

MAJOR APPLIANCE RECYCLING ROUNDTABLE
Notes to the Financial Statements
For the year ended 31 December 2016

1. Incorporation

Major Appliance Recycling Roundtable ("MARR") was incorporated under the Canada Not-for-Profit Corporations Act on 17 July 2012 and commenced operations on 1 August 2013. MARR is a not-for-profit organization and it is not subject to income taxes. MARR currently operates a stewardship program in the Province of British Columbia to assist the major appliance producers in discharging their obligation to establish end of life product collection and recycling programs under the British Columbia Recycling Regulations.

2. Summary of significant accounting policies

These financial statements are prepared in accordance with Canadian accounting standards for not-for-profit organizations. The significant policies are detailed as follows:

(a) Revenue recognition

Revenue from administrative program fees ("APF") is recognized at the time an APF applicable product is sold by a member of MARR, and the APF becomes due and payable. APF's are received from registered members which participate in MARR's programs. MARR recognizes these fees as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured. APF revenues are recognized as individual members report and remit them as required by applicable provincial environmental legislation.

(b) Cash and cash equivalents

MARR's policy is to disclose bank balances under cash and cash equivalents, including bank overdrafts with balances that fluctuate frequently from being positive to overdrawn and term deposits with a maturity period of three months or less from the date of acquisition.

(c) Financial instruments

(i) Measurement of financial instruments

MARR initially measures its financial assets and liabilities at fair value and subsequently measures all of its financial assets and financial liabilities at amortized cost.

Financial assets measured at amortized cost include cash and cash equivalents, accounts receivable and the reserve fund.

Financial liabilities measured at amortized cost include accounts payable and accrued liabilities.

MAJOR APPLIANCE RECYCLING ROUNDTABLE
Notes to the Financial Statements
For the year ended 31 December 2016

2. Summary of significant accounting policies - Continued

(c) Financial instruments - Continued

(ii) Impairment

Financial assets measured at cost are tested for impairment when there are indicators of impairment. The amount of the write-down is recognized in the statement of operations. The previously recognized impairment loss may be reversed to the extent of the improvement, directly or by adjusting the allowance account, provided it is no greater than the amount that would have been reported at the date of the reversal had the impairment not been recognized previously. The amount of the reversal is recognized in the statement of operations.

(iii) Transaction costs

MARR recognizes its transaction costs in the statement of operations in the period incurred. However, financial instruments that will not be subsequently measured at fair value are adjusted by the transaction costs that are directly attributable to their origination, issuance or assumption.

(d) Use of estimates

The preparation of financial statements in accordance with Canadian accounting standards for not-for-profit organizations requires management to make estimates and assumptions that affect the reported amount of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amount of revenues and expenses during the reported period. Accounts subject to significant estimates include accrued liabilities and revenue recognized for APF's receivable. Actual results could differ from these estimates.

3. Financial instruments risks

MARR is exposed to various risks through its financial instruments. The following analysis provides a measure of MARR's risk exposure and concentrations at the statement of financial position date, 31 December 2016.

(a) Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. MARR's main credit risks relate to its cash and cash equivalents and accounts receivable. Cash and cash equivalents is in place with major financial institutions. Concentrations of credit risk with respect to accounts receivable are limited due to the large number of members. MARR has evaluation and monitoring processes in place and writes off accounts when they are determined to be uncollectible.

MAJOR APPLIANCE RECYCLING ROUNDTABLE
Notes to the Financial Statements
For the year ended 31 December 2016

3. Financial instruments risks - Continued

(b) Liquidity risk

Liquidity risk is the risk that an entity will encounter difficulty in meeting obligations associated with financial liabilities. MARR is exposed to this risk mainly in respect of its accounts payable and accrued liabilities. MARR maintains adequate cash to meet obligations as they become due.

4. Reserve Fund

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

- To assist in stabilizing eco fees by being available to manage year to year volume fluctuations.
- To cover the costs of winding up the Program by the decision of the members or as a consequence 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 cost of unanticipated or extraordinary items.
- To make available interim funding for program expansion.
- To fund other special projects (such as the acquisition or construction of a building).
- To fund the purchase of capital equipment.
- To act as a sinking fund to cover the cost of managing products with long life spans, for which collection may occur well in the future.

Transfers to the Reserve Fund are made upon resolutions passed by the Board of Directors. Total contributions to the Reserve Fund are not to exceed one year's operating expenses.

The Reserve Fund consists of an investment in a commercial savings account and is managed in accordance with MARR's investment policy. All income earned on the investment is initially reported in the unrestricted fund and then transferred to the Reserve Fund. During the year, \$603 (2015 - \$300,210) was transferred from unrestricted net assets to the Reserve Fund.

MAJOR APPLIANCE RECYCLING ROUNDTABLE
Notes to the Financial Statements
For the year ended 31 December 2016

5. Equipment

	<u>Cost</u>	<u>Accumulated Amortization</u>	<u>2016 Net</u>	<u>2015 Net</u>
Computer equipment	\$ 2,193	\$ 1,096	\$ 1,097	\$ -