



MANITOBA STEWARDSHIP PLAN FOR MERCURY-CONTAINING THERMOSTATS

Final

Submitted by:

Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI)
with the support of the Canadian Institute of Plumbing and Heating (CIPH)

Prepared by:

Summerhill Impact

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1. INTRODUCTION

1.1 Overview

In accordance with the Manitoba Regulation 16/2010 (February 3, 2010) and the final version of the draft Guideline for Household or Prescribed Household Material Stewardship program, the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI), with the support of the Canadian Institute of Plumbing and Heating (CIPH), is submitting this Stewardship Plan on behalf of manufacturers and distributors responsible for selling mercury-containing thermostats into Manitoba.

The ultimate goal in preparing this Plan is to develop and deliver a harmonized program across Canada for the collection and recycling of mercury-containing thermostats. The intention of this Plan is to create a program that satisfies the obligations of the thermostat manufacturers under the Manitoba Hazardous or Prescribed Household Material Stewardship program, while working to expand the program to make it national in scope.

The Plan will build on the program infrastructure of the existing Switch the 'Stat program managed by Summerhill Impact (SI), which has focused on thermostat collection from heating, ventilation and air conditioning (HVAC) contractors and wholesalers in Ontario and British Columbia.

This Plan covers a five-year period from April 1, 2011 to March 31, 2016, and as such, sets five-year targets for accessibility and collection. Details are provided in the document below. The Plan will be reviewed after five years of operation, and any needed amendments will be made at that time.

1.2 Program Participants

HRAI, with the support of CIPH, has taken the lead in developing this Plan on behalf of manufacturers and distributors responsible for selling mercury-containing thermostats into Manitoba. Appendix A includes a list of the manufacturers and distributors that sell mercury-containing thermostats into Manitoba. Appendix B lists the thermostat manufacturers and distributors that have already signed onto this Plan.

HRAI and CIPH will be contacting the manufacturers and distributors listed in Appendix A to notify them about this Plan and, as a result, the list in Appendix B will continue to evolve. The list of participating manufacturers and distributors will also be posted on the program website (www.switchthestat.ca), and will be updated regularly as new participants register for the program.

As the agency appointed by the manufacturers and distributors listed in Appendix B to fulfill their legal obligation to develop and deliver a collection and recycling program for mercury-containing thermostats in Manitoba, HRAI has contracted SI to provide overall program management and delivery.

1.3 Program Products

This plan covers mercury-containing thermostats defined as a product that uses a mercury switch to sense and control room temperature through communication with heating, ventilation and air conditioning equipment.

Mercury-containing thermostats contain internal mercury switches (mercury in a sealed glass bulb) that control the flow of electrical current. The weight of the mercury dropping moves the bimetal spring, creating an on/off switching action. Each switch in a thermostat contains approximately 2.5 grams of mercury, and a thermostat can contain between one and four switches, with the average being 1.4 switches per thermostat (based on collection results from SI's Switch the 'Stat program results from April 2006 to May 2009).

While mercury-containing thermostats have been in use for more than 50 years, they are no longer manufactured by the major manufacturers. Honeywell stopped selling mercury-containing thermostats in Canada in 2006, Emerson/White Rodgers stopped in December 2008 and Johnson Controls stopped in 2004. As well, the government of Canada is working on a risk management strategy that will ban the sale, manufacture and import of all mercury-containing products (excluding lamps and dental amalgam) into Canada by 2012. This ban will guarantee that mercury-containing thermostats are an obsolete material.

Mercury-containing thermostats are commonly replaced by mercury-free alternatives, such as electronic models or non-electronic models that contain snap switches instead of mercury switches.

The designed lifespan of a mercury-containing thermostat is 20–30 years. However, in reality, the majority of thermostats are replaced more frequently than that — on average every 7–10 years — as a result of renovations and/or replacing furnaces and other HVAC equipment.

2. PRODUCT STEWARDSHIP PLAN

2.1 Plan Development

In 2006, SI developed and began operating a pilot program to collect mercury-containing thermostats. This program — Switch the ‘Stat — became a permanent, ongoing initiative of SI in 2007. In delivering Switch the ‘Stat to more than 1,300 contractors and wholesalers in Ontario, SI provides education and outreach for both the participating home and/or business owners and contractors/wholesalers, as well as free collection containers and shipping for all thermostats collected.

In 2009, SI, HRAI, CIPH and a number of thermostat manufacturers and distributors discussed the opportunities and value in using the existing Switch the ‘Stat program model and infrastructure as the basis for the Stewardship Plan for thermostats to meet the obligations of provincial stewardship regulations, including the Manitoba Hazardous or Prescribed Household Material Stewardship program.

2.2 Collection Infrastructure

The Plan will use the following two channels to collect end-of-life thermostats in Manitoba:

1. Contractors/wholesalers — removal and collection by contractors/wholesalers, as well as act as drop-off locations for general public
2. Send-back pilot for remote regions of the province

1. Contractor/Wholesaler Channel

- This channel will be used as the primary collection channel for the Plan because it is estimated that 85 to 90 per cent of thermostats sold into Manitoba are sold via the contractor/wholesaler channel and, as such, we expect to see a similar proportion of thermostats collected and returned through this channel.
- SI and HRAI will identify and engage HVAC contractors and wholesalers via letters, advertising in industry publications, and participation in industry meetings (via presentations and tradeshow).
- Contractors and wholesalers can register for Switch the ‘Stat either via the program website (www.switchthestat.ca) or by call SI directly.
- SI sends participating contractors and wholesalers the following material — a collection container (United Nations approved for shipping), an introductory letter, program instructions, information brochures to leave behind with their customers and a pre-paid courier waybill.
- Contractors remove old thermostats from homes or businesses and replace them with new thermostats.
- Contractors place old thermostats intact in the provided collection containers.
- Contractors continue to collect thermostats until their containers are full, or until they are requested to return their container during a collection “sweep”.
- The full containers are shipped using the provided pre-paid courier waybill.
- The courier picks the containers up from the contractor or wholesaler and ships them directly to the recycling facility.

- The Plan will ensure that the courier and recycling companies used in the program have the appropriate certificates of approval to transport and receive mercury-containing thermostats.
- Once at the recycler, the thermostats will be counted, documented, dismantled and recycled, the mercury will be removed and stored, the metal and plastic components of the thermostats will be recycled, and the number of thermostats collected by each contractor will be reported back to SI on a monthly basis.

For do-it-yourselfers, the Plan will promote the contractors and wholesalers that participate in the program as year-round drop-off locations. The Switch the 'Stat website will have a map or search by postal code function that will allow the general public to locate a participating contractor/wholesaler in their area.

The Plan will also engage retail locations that sell new thermostats to voluntarily display permanent signage with program information and website to be displayed at the point-of-sale (with new thermostats).

2. Send-back Channel

- This channel will be used as a secondary collection channel for the Plan, and will operate as a pilot project in Year 1 to determine the effective as a permanent on-going collection channel.
- This channel will be provided as an option for Manitoba residents living in remote areas.
- The Switch the 'Stat website will list a toll-free phone number and an on-line request option where the public can request a shipping container with a pre-paid courier waybill to ship their individual old thermostat directly to the recycler.
- The Plan will document and track the number of thermostats that come back through this channel to judge effectiveness.

One hundred per cent of the thermostats collected through the Plan will be recycled and diverted from landfill.

2.3 Available for Collection

Mercury-containing thermostats are an obsolete material and, over time, the amount available for collection will naturally decrease to the point where there will be none left in Manitoba homes and businesses. Preliminary estimates vary significantly in quantifying the number of households that may contain thermostats with mercury. For example, Environment Canada data suggest that the 2003 national annual demand for mercury-containing thermostats was 195,000 units. In a 2007 HRAI survey of members, contractors estimated that 57 per cent of the thermostat replacements they made in Ontario involved mercury-containing thermostats. Meanwhile, data from Statistics Canada show that, in 2006, 94 per cent of Manitoba homes had thermostats and that 38 per cent of these had programmable thermostats.

Given the range in the estimates above, as well as the uncertainty regarding the lifespan of these products in the field, this Plan will undertake a research and development project in Year 1, in the form of a survey, to determine the percentage of Manitoba homes that still have mercury-containing thermostats and the average rate of removal. These numbers will be used

to develop a more accurate estimate of the number of thermostats available for collection each year. The survey will be administered through participating contractors/wholesalers.

In addition to determining a more accurate metric for the number of thermostats available for collection each year, the data from the above-mentioned survey will be used to determine the total number of thermostats available for collection in Manitoba and therefore speculate as to the length of time this collection program will need to remain operational. Mercury thermostats are already considered obsolete in Canada (no new ones being sold into market), but the national Risk Management Strategy will prohibit the sale, import and manufacturer of mercury-containing thermostats by 2012.

Similar collection programs in the United States have included a trigger point to review the need for ongoing collection (e.g., a certain number of years after the last mercury-containing thermostats were sold into a jurisdiction), or when the collection rate is less than a certain percentage (e.g., five per cent or less).

In addition to the survey, this ISP also proposes to collect ALL extracted thermostats throughout Years 1–3, which will allow the program administrators to gather hard data on the actual percentage of thermostats removed from Manitoba homes and businesses that contain mercury. To the extent that the program succeeds in covering the Manitoba marketplace, the numbers revealed via this collection process will generate a more accurate assessment of the remaining stock than any survey could provide. Furthermore, three years of collection data will also begin to show us what the trend will be, allowing some ability to predict the required duration of the program.

2.4 Pollution Prevention Hierarchy

Reduce/Redesign — The main environmental concern with thermostats is the mercury contained in many of the older models. While mercury-containing thermostats have been in use for more than 50 years, they are no longer manufactured by the major manufacturers.

Reuse — The Plan will not encourage the reuse of old thermostats collected through this program for a number of reasons. First, many of the old thermostats contain mercury and this Plan will ensure that the mercury is properly managed and recycled once in our collection channels. Second, for the non-mercury-containing thermostats, the risk in reusing them is that they will not meet the technical/safety specifications of new HVAC systems.

Recycle — The following steps will be taken to manage the materials recovered through the Plan:

- Once at the recycler, the thermostats will be counted, documented, dismantled and recycled.
- The glass vial that contains the mercury will be removed from the thermostat. The glass vial will be crushed and the glass and mercury separated. The mercury will be quadruple distilled and then sent for re-sale/re-use in products and processes. The glass will be crushed, distilled and sent for recycling in fiberglass applications.
- The metal and plastic components from the thermostats will be separated and sent for recycling. The plastics recovered from thermostats are mixed types, and therefore are best if bailed together then shredded into flakes which can be sold to manufacturers to

be used in new products in a 30/70 mix of recycled to new plastics. The metals found in thermostats are a mix of iron, copper, nickel and aluminum, which all have high re-use/recycling value.

3. PROGRAM PERFORMANCE

3.1 Program Accessibility

CONTRACTOR/WHOLESALE CHANNEL — The Plan will use the existing HRAI and CIPH contractor/wholesaler memberships to engage these companies to participate in the program. As well, the Plan will identify and engage additional contractors and wholesalers who are not HRAI or CIPH members to participate in the program via letters, advertising in industry publications, and participation in industry meetings (via presentations and tradeshow). These contractors and wholesalers will provide on-site collection for thermostats that they remove from homes and businesses, as well as act as year-round drop-off locations for general public who want to dispose of a thermostat. SI will contact contractors and wholesalers in all regional districts, with the intention of having participants in each regional district of the province.

The Plan will aim to have a minimum of 50 contractors/wholesalers registered for the program in Year 1 and then increase registration by at least 20 per cent each year. While the exact number of contractors/wholesalers operating in Manitoba is not known, it is estimated that there are approximately 150 businesses that could eventually act as collection points for thermostats.

The Plan will also work to engage wholesaler branches as drop-off points for thermostats because all small contractor businesses will visit at least one wholesaler branch on a regular basis to pick-up supplies. Rather than every one-person business having an individual pail, we will use the wholesaler branches as a point of promotion for the program and will encourage the contractors to use these branches for collection. Having said that, if a one-person business wants to have an individual collection container, the Plan will supply it, along with free shipping.

The table below shows the five-year targets for the number of collection points for the contractor/wholesaler channel.

Year	Number of Participating Contractors, Contractor Branches and Wholesaler Branches
Year 1	50
Year 2	60
Year 3	75
Year 4	90
Year 5	105

SEND-BACK COLLECTION — This Plan will run a send-back pilot project for remote areas of the province. We will look to the program model used and lessons learned from a similar program that ran in the state of Maine, which saw a collection rate of approximately seven per cent through their mail-back pilot.

3.2 Consumer Awareness

The Plan will expand on existing Switch the 'Stat program resources, such as the website, and the communications pieces for the contractors/wholesalers (program instructions) and the general public (information brochure), as well as develop new resources, as needed. Appendix C provides physical examples of the existing Switch the 'Stat program resources. The types of information that will be communicated to participants and the public are why old thermostats need to be recycled (in particular because of the risks associated with the mercury found in many older thermostats), who funds the program, disposal options (contractor and send-back channels), and program contact information for more information.

The types of resources and distribution channels that will be used to increase consumer awareness are:

- Program website — will present a comprehensive overview of the program, with periodic updates and an up-to-date list of disposal locations (i.e., participating contractors and wholesalers, and send back options);
- Printed brochures — to be distributed by contractors/wholesalers, at retail locations that sell new thermostats, and at public events (i.e., festivals, community events, etc.);
- Printed posters — to be displayed at retail locations that sell new thermostats;
- Industry communications via newsletters and industry publications to inform the contractors/wholesalers about the program and how to register and participate;
- Advertising for the general public via the Green Manitoba's website and Eco-Calendar, as well as in municipal waste reduction/community calendars;
- Wholesalers, distributors and manufacturers will promote the program to contractors and the general public via their websites, newsletters, signage, etc.; and,
- HRAI has a feature on the consumer section of its website that provides listings for all member contractors with a "finder" feature — this Plan will add the Switch the 'Stat logo to the listings of program participants.

The types of resources and distribution channels that will be used to increase industry awareness are:

- Wholesalers and distributors will provide on-site promotion and education for the small, one-person contractors via signage and printed information, as well as allowing the contractors to use their collection containers if they want to (instead of acquiring their own collection pail);
- HRAI's existing communications channels for contractors/wholesalers — website, newsletters, meetings, email updates, etc.; and,
- This Plan will link to other initiatives and programs that HRAI is part of, such as the Refrigerant Management Canada (RMC) program and outreach to the Building Owners and Managers Association (BOMA) and Green Building Council to target the IC&I sector.

In addition, manufacturers currently provide information on the packaging of new thermostats sold into North America to inform the customer that their old thermostat may contain mercury, along with a website (www.thermostat-recycle.org) and a toll-free phone number so that customers can find out where and how to properly dispose of it in the United States. This Plan will utilize this existing US infrastructure by adding a link to the Switch the 'Stat program onto the US website and a recording from the US toll-free number directing customers to the Switch the 'Stat phone number. These links from the US program will be operational by April 1, 2011.

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

- Program website — the portion of the website that is specific to Manitoba will be operational by April 1, 2011, and updates (including the list of participating contractors/wholesalers) will be made on a monthly basis.
- Printed brochures — a minimum of 500 brochures will be printed and distributed in Manitoba on an annual basis.

In addition to the metrics listed above, the Plan intends to monitor awareness rates among Manitoba citizens and is committed to having a consumer awareness plan, with targets and methods, developed by the end of Year 1.

3.3 Collection Targets

Throughout 2009, HRAI, CIPH and SI all participated in a working group convened by Stewardship Ontario to gather data for the development of the “Final Consolidated MHSW Program Plan V. II — July 30, 2009” for the Ontario Municipal Hazardous or Special Waste (MHSW) program. Using the data gathered through this process for the number of thermostats available for collection in Ontario (the relevant section of the MHSW program plan is provided in Appendix D), and adjusting on a per capita basis for Manitoba, it is estimated that there are approximately 1,650 mercury-containing thermostats available for collection in Manitoba on an annual basis.

The table below provides the five-year collection targets for mercury-containing thermostats in Manitoba on a per cent capture basis.

Annual Collection Targets for Mercury-containing Thermostats in Manitoba, Per Cent Capture

Year	Estimated Number of Mercury-containing Thermostats Available for Collection	Number of Mercury-containing Thermostats to be Collected	Per Cent Capture
Year 1 (April 1, 2011 – March 31, 2012)	1,650	415	25%
Year 2 (April 1, 2012 – March 31, 2013)	1,650	660	40%
Year 3 (April 1, 2013 – March 31, 2014)	1,650	910	55%
Year 4 (April 1, 2014 – March 31, 2015)	1,650	1,075	65%
Year 5 (April 1, 2015 – March 31, 2016)	1,650	1,240	75%

It is anticipated that the majority of thermostats collected each year will come from the contractor/wholesaler channel. In order to achieve the increase in collection year after year, the Plan will focus on the contractor/wholesaler channel through the following actions:

- Increasing the number of contractors/wholesalers registered for the program;
- Increasing the communications and outreach to the registered contractors/wholesalers;
- Enforcing active participation among HRAI and CIPH member contractors/wholesalers;
- Increasing communications to do-it-yourselfers to use the contractors/wholesalers as drop-off points for thermostats.

In addition, the Plan will review the collection results achieved through the send-back channel in Year 1, and will increase collection and outreach efforts if the proportion of thermostats collected through this channel if targets are not being met.

Monitoring — The quantities collected and diverted as a result of the Plan will be monitored via monthly reporting from the recycler to SI and will include the number of thermostats collected from specific contractors and wholesalers, as well as collection numbers from the individual send-back returns.

Remedial Actions — If the collection targets are not met, the Plan will increase communication and enforcement through the contractor/wholesaler collection channel, as well as examine the results achieved through the send-back channel. Other methods of collection (such as return-to-retail) will also be explored if needed and considered to ensure annual collection targets are met.

4. PROGRAM ADMINISTRATION

4.1 Program Financing

The Plan will be managed and funded by the manufacturers and distributors that sell and/or import thermostats into Manitoba. The manufacturers and distributors will pay a flat fee toward the administrative costs associated with the program and then will pay per unit fees based on return share of the thermostats collected.

4.2 Steward Compliance

SI and HRAI will actively identify and recruit manufacturers and distributors that sold and/or imported mercury-containing thermostats into Manitoba who are not participating in the Plan. Techniques to identify these companies will include audits of collected materials and information received from the industry associations and member companies.

Once a company is identified, SI and HRAI will issue communications (letter, email or phone call) to advise the steward of their regulatory obligation to participate in a stewardship program. If the company does not comply, SI and HRAI will issue a letter to Manitoba Conservation advising of the circumstances and requesting investigation and appropriate enforcement.

4.3 Dispute Resolution

In delivering this Plan, SI will contract with all suppliers and service providers by the use of formal contracts and agreements. Any disputes arising will be resolved using appropriate legal procedures.

4.4 Cooperation with Other Thermostat Collection Programs

HRAI is committed to working with any other agencies that operate approved stewardship programs for thermostat collection in Manitoba to ensure the programs operate cooperatively and as effectively as possible.

5. ANNUAL REPORT

An annual report will be submitted to Manitoba Conservation as stated in the regulation. The annual report will also be available on the program website as a PDF file. The report will include, but not be limited to, the following information:

- Plan performance measures, including the number of mercury-containing thermostats collected, documented product recovery rate information, including the aggregated data of the total amount of thermostats collected, along with the estimated thermostat recovery rate;
- A comparison of the approved plan performance for the year with the performance requirements and targets in the regulation and the approved plan;
- The number of thermostats collected in each regional district;
- The number and location of collection facilities;
- A summary of the educational materials and educational strategies used for the Switch the 'Stat program in Manitoba;
- The steps taken to manage the materials recovered through the Plan, including a description of how recovered thermostats were managed in accordance with the pollution prevention hierarchy, and information on the final destination of recyclable materials recovered through the Plan; and,
- A summary of the research and development efforts conducted throughout the year and results that they have yielded.

6. STAKEHOLDER CONSULTATION

On June 11th, 2010, SI posted the final draft version of the “Manitoba Stewardship Plan for Mercury-containing Thermostats” on the public Switch the ‘Stat program website at <http://switchthestat.ca/eng/stewardship-plans.php>.

Between June 1st and 14th, 2010, a notice of an upcoming stakeholder consultation for HHW programs in Manitoba was sent to a number of stakeholder groups, including local governments, municipal corporations, Community Councils, First Nations, thermostat and controls manufacturers and distributors, retailers, recyclers/material processors and environmental non-governmental organizations.

Stakeholders were also informed that if they were unable to participate in the consultation at the specified date/time/location, they were invited to contact SI to make alternative arrangements to share their feedback, or they could submit written comments to the Plan until July 9th, 2010.

The in-person consultation meeting, with simultaneous webinar, was held on Monday, June 21, 2010 at the Inn at the Forks in Winnipeg, Manitoba (75 Forks Market Road, Winnipeg, MB, R3C 0A2). The consultation and webinar included a PowerPoint presentation to provide an overview of the Plan, as well as opportunities to ask questions and provide feedback to the Plan either in-person at the meeting, via the associated conference call or chat function during the webinar. The PowerPoint presentation used for the consultations/webinars, along with a summary of questions, comments and feedback, and associated responses are included in Appendix E.

Appendix A — List of Manufacturers and Distributors Responsible for Selling Mercury-containing Thermostats into Manitoba

Bard Manufacturing Corporation
Burhham Holdings, Inc.
Carrier Corporation
Chromalox
Climate Master, Inc.
Crane Company
Emerson Electric Corporation/White-Rodgers
Empire Comfort Systems
General Electric Corporation
Honeywell Corporation
ITT Corporation
York/Johnson Controls
Lear Siegler (Original Charter Corporation)
Lennox International Inc.
Lux Products
McQuay International
Nordyne Corporation
PSG Controls, Inc.
Rheem Manufacturing Company
Sears Holdings
Taco, Inc.
Thomas & Betts Corporation
TPI Corporation
Trane Residential Systems
Vaillant Corporation
W. W. Grainger
Waterfurnace
Uponor, Inc.

Appendix B — List of Thermostats Manufacturers and Distributors Signed-on to Participate in the Stewardship Plan

Emerson Electric Corporation/White-Rodgers
Honeywell Corporation
Johnson Controls-UPS Division (York)
Thomas & Betts
Waterfurnace

Appendix C — Existing Switch the 'Stat Program Resources

PROGRAM WEBSITE HOMEPAGE — www.switchthestat.ca

The screenshot shows a web browser window displaying the homepage of the Switch the 'Stat program. The browser's address bar shows the URL www.switchthestat.ca. The website features a blue and green color scheme. At the top left is the 'Switch the 'Stat' logo, and at the top right is the Summerhill Group of Companies logo. A navigation menu on the left lists: Home, About the Program, Stewardship Plans & Approvals, Facts & Info, News, Program Results, Partners & Funders, Links & Resources, and Participate. The main content area has a large image of a thermostat dial with the heading 'Switch the 'Stat' and the sub-heading 'Canada's only residential and commercial thermostat exchange program.' Below this is a detailed paragraph about the program's goals and benefits, followed by a link to 'Make the Right Switch!'. A footer section includes a 'Privacy Policy' link and a copyright notice for Summerhill 2010.

Summerhill | Switch the 'Stat | Contact Us | SUMMERHILL GROUP OF COMPANIES

Another program of Summerhill IMPACT

Switch the 'Stat

Canada's only residential and commercial thermostat exchange program.

Switch the 'Stat is a residential and commercial thermostat recycling program currently running in Ontario and British Columbia. Operating the program on behalf of the Heating, Refrigeration and Air Conditioning Institute of Canada, Summerhill Impact works with heating and cooling contractors and wholesalers to encourage the installation of energy-efficient programmable thermostats, while simultaneously diverting the older mercury-containing and electronic thermostats from landfill. Switching to newer and more energy-efficient programmable thermostats and responsibly disposing of older mercury-containing thermostats reduces energy consumption, greenhouse gas emissions, and prevents mercury from contaminating our air, soil, and water.

Learn how to [Make the Right Switch!](#)

Switch the 'Stat is brought to you by Summerhill Impact, part of the Summerhill group of companies. [Privacy Policy](#)

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PROGRAM INSTRUCTIONS FOR PARTICIPATING CONTRACTORS AND WHOLESALERS



Thank You for Participating in Switch the 'Stat!

By collecting old mercury thermostats and returning them to us, you are helping to make a real difference in the health of our environment. To date, *Switch the 'Stat* contractors and wholesalers have collected over 46,000 mercury-containing thermostat switches, meaning that more than 116 kilograms of mercury have been prevented from polluting our air, soil and water.

In 2009, our goal is to collect 15,000 mercury switches!

Participation Instructions

1. Summerhill Impact has sent you a collection container with a pre-paid return Purolator waybill. **Do not lose this waybill!** Keep it in a safe place until you are ready to send in the container.
2. Bring the collection container with you on jobs.
3. When you are asked to replace old thermostats with new programmable thermostats, place the old thermostat in the collection container.
4. **Do not dismantle the mercury switch** from the thermostat.
5. Continue to collect thermostats in the containers. If your container gets full and you need a new one, contact Jenna Bentley at 416-922-9038 x358.
6. When the container is full, or when you are requested to send it in, please call Purolator and ship the container using the pre-paid waybill. The container will be sent to a collection and storage facility, to ensure that the mercury is safely and responsibly recovered from the old thermostats.

Congratulations! You can rest easy, knowing that you have helped keep mercury out of the environment and at no cost to you! You will be featured by Summerhill Impact as a responsible leader in your industry.

Mercury Background Information

As you know, in spite of the energy-saving benefits of programmable thermostats, many homes still have old mercury thermostats. These contain between one and four switches which contain approximately 2.5 grams of mercury each. The mercury is contained in a glass bulb, which tilts back and forth as the temperature changes and activates an on-off switch.

Mercury is a potent neurotoxin and is extremely harmful to the health of humans and wildlife. Mercury is especially toxic to young children and women of child-bearing age because it can inhibit the development of the brain and nervous system. **Mercury-containing thermostats pose a threat to human health and the environment when they are improperly disposed of.**

Because mercury is dangerous to human and environmental health, it must be disposed of safely and responsibly. By participating in this program, you help ensure that mercury-containing thermostats are prevented from entering landfill, and that the mercury is safely and responsibly recovered and stored.

Switch the 'Stat combines the benefits of improved residential energy efficiency through the installation and use of programmable thermostats with a collection program for old mercury-containing thermostats.

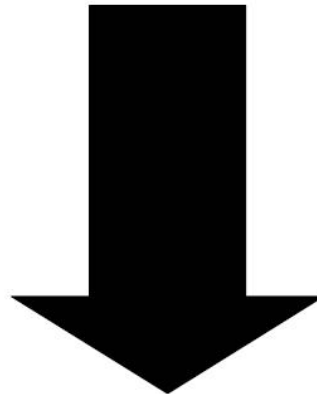
Contact Us!

Jenna Bentley
Summerhill Impact
Phone: 416-922-9038 x358
Fax: 416-922-1028
E-mail: jbentley@summerhillgroup.ca
Website: www.switchthestat.ca

Attention Heating and Cooling Contractors!

Did you know that disposing of older mercury-containing thermostats with regular waste can result in toxic mercury being released into the environment?

Do the right thing! Please dispose of **fully intact** mercury-containing thermostats in this collection bin and prevent mercury from contaminating the air, soil and water!



Contact:
Erica Pinto, Clean Air Foundation
E-mail: epinto@cleanairfoundation.org
Phone: (416) 922-9038 x286

Participating in Switch the 'Stat is mandatory for Cool Savings Rebate participants.



PRINTED BROCHURE FOR HOMEOWNERS AND BUSINESS OWNERS (English version)

Make the right switch!



This is a mercury switch – something that still exists in millions of older mechanical thermostats. Mercury is highly toxic and dangerous to the health of people and wildlife.

Switching to newer and more energy-efficient programmable thermostats and responsibly disposing of older mercury-containing thermostats reduces energy consumption and prevents mercury from contaminating our air, soil and water.


cleanair
FOUNDATION

Another successful Clean Air Foundation program with over 10,600 mercury-containing thermostat switches collected to date.


(front)

Now the choice is yours!

If you dispose of your old thermostat with your household waste, you are sending mercury to landfill.




Old mechanical thermostats have one to four switches, each containing approximately 2.5 grams of mercury.




Mercury is a potent neurotoxin and it only takes one gram to contaminate an eight-hectare lake to the point where the fish are not edible for a full year.

If you participate in **Switch the 'Stat**, you will conserve energy, save money, and prevent mercury releases to the environment.




Step 1: With the help of your participating **Switch the 'Stat** contractor, switch to a newer, more energy-efficient programmable thermostat.



Step 2: Responsibly dispose of your old mercury-containing thermostat through your local **Switch the 'Stat** contractor. A recycling facility will dismantle the thermostat, recycle the parts, and prevent the mercury from contaminating air, soil and water.

For more information, go to www.switchthestat.ca or call 416-922-9038 x286.

Switch the 'Stat program partners:



™ Official mark of the Ontario Power Authority
THIS FLYER WAS PRINTED USING A WATERLESS PROCESS ON 100% RECYCLED, ENVIRONMENTAL CHOICE CERTIFIED, PROCESSED CHLORINE FREE, FSC-APPROVED PAPER.

(back)

PRINTED BROCHURE FOR HOMEOWNERS AND BUSINESS OWNERS (French version)

Faites le bon choix!




Voici un interrupteur au mercure – un dispositif qui existe encore dans des millions d'anciens modèles de thermostats mécaniques. Le mercure est hautement toxique et dangereux pour la santé des humains et de la faune.

En passant à des thermostats programmables plus modernes et plus écoénergétiques et en éliminant de manière responsable les vieux thermostats contenant du mercure, on réduit la consommation d'énergie et on prévient la contamination au mercure de l'air, de sol et de l'eau.

FONDATION airpur

Un autre programme réussi de la Fondation Air pur qui a permis de récupérer jusqu'à présent plus de 10 600 interrupteurs au mercure.

(front)

À vous de faire votre choix!

Si vous jetez aux ordures votre vieux thermostat, vous envoyez du mercure aux décharges.

En participant à Troque ton Stat, vous économisez de l'énergie, de l'argent et évitez le rejet de mercure dans l'environnement.



Les vieux thermostats mécaniques comportent de un à quatre interrupteurs, contenant chacun environ 2,5 g de mercure.



Étape 1 : grâce à l'aide de votre entrepreneur participant à Troque ton Stat, optez pour un thermostat programmable plus moderne et plus écoénergétique.



Étape 2 : éliminez de manière responsable votre thermostat contenant du mercure en faisant appel à l'entrepreneur participant à Troque ton Stat de votre région.

Le thermostat sera démonté dans une installation de recyclage, les pièces seront recyclées et le mercure sera récupéré soigneusement afin qu'il ne contamine l'air, le sol et l'eau.

Pour de plus amples renseignements, allez à www.troquetonstat.ca ou appelez 416-922-9038, poste 286.

Partenaires du programme Troque ton Stat :



™ Marque officielle de l'Office de l'électricité de l'Ontario
CETTE BROCHURE A ÉTÉ IMPRIMÉE À SEC ET SANS CHLORE SUR DU PAPIER
RECYCLÉ À 100%, CERTIFIÉ PAR LE PROGRAMME CHOIX ENVIRONNEMENTAL ET LE PSC.

(back)

PROGRAM COLLECTION CONTAINER (5.5 gallon with UN-approved sealed lid for safe storage and shipping)



Appendix D — Section on Mercury-containing Thermostats in the “Final Consolidated MHSW Program Plan V. II — July 30, 2009” from the Ontario Municipal Hazardous or Special Waste Program

Available at http://stewardshipontario.ca/mhsw/pdf/plan/mhsw_plan_jul30_09_vol2.pdf

22.0 Mercury Devices — Thermostats

22.1 Definition

Mercury Thermostats means a product that uses a mercury switch to sense and control room temperature through communication with heating, ventilation and air conditioning equipment

22.2 Market and Product Information

Mercury is widely used in a variety of products utilized in residential, commercial and industrial environments. Mercury is a heavy liquid at room temperature and tends to be popular on account of its ability to conduct electricity and its standard responsiveness to changes in temperature and level. Typically, measuring devices contain the largest amount of mercury on a unit basis.

Mercury containing switches and relays, however, account for a far greater share of the total mercury in the marketplace, due to the very high number of products that contain switches and relays.

Figure 22.1 below provides a breakdown of mercury use by product category in the United States for 2004. According to this, thermostats represented 13% of the total use of mercury in products in the United States that year. It is reasonable to assume that the situation in Canada is comparable.

In late 2006, Environment Canada published a Risk Management Strategy for Mercury-containing products. The strategy outlines options available to Environment Canada to prohibit or limit the use of mercury in products. This prohibition is expected to include all products containing mercury, with the exception of fluorescent lights and dental amalgams, and is expected to come into force in 2012. Notwithstanding this, due to legislation restricting the use of mercury passed in the United States, and overall health concerns associated with this substance, the vast majority of manufacturers have discontinued the use of mercury in their products. For this reason, all the products designated under this category are obsolete in nature, that is to say, the material no longer supplied or sold for consumer use in Ontario.

22.3 Small Quantity IC&I Generators

The Minister’s Program Request Letter designates waste thermostat that contain mercury from residential and IC&I small quantity generators. In the case of mercury, the quantities permitted from IC&I businesses is defined by the small quantity exclusion or Regulation 347 and is set at 5 kg of mercury containing waste per month.

22.4 Quantities Available for Collection

According to a report by Environment Canada, Honeywell, General Electric and White Rodgers are the main suppliers of thermostats into the Ontario market. Honeywell discontinued the sale of mercury thermostats in 2006. White Rodgers ceased importation of mercury thermostats into Canada as of December 31, 2008.

There is no source of information available to estimate the quantities of mercury thermostats sold into Ontario up until 2008. An Environment Canada report estimates that the national domestic demand for mercury-containing thermostats in 2003 was approximately 195,000 units. In 2002, Union Gas and Enbridge estimated there were approximately 1.25 million mercury thermostats in use by natural gas consumers in the province of Ontario that year.

In addition to the lack of thermostat sales information, the challenge in attempting to determine the quantity of thermostats that become available for collection each year is that while the design lifespan of a mercury thermostat is considered to be 20–30 years, in practical use it is replaced more frequently, generally in 7–10 years. This is related to homeowner's upgrading their thermostat for energy efficiency, remodelling their home, and replacing or repairing HVAC systems. It also coincides with the average re-sale period of a home — a likely time for homeowner's to renovate and upgrade their systems.

Notwithstanding these limitations, an attempt has been made to estimate the quantity of thermostats available for collection for the baseline year of the Consolidated MHSW Program Plan, using information on the number of Central Air Conditioning (CAC) and Furnace Shipments into Ontario for 2008. Using data on the number of new home constructs for that time period, the number of CAC and furnace replacements attributable to the retro fit market has been estimated, as presented in Table 22.1

Table 22.1: Number of Central Air Conditioning (CAC) and Furnace Shipments into Ontario for 2008

Description	2008
Ontario CAC Shipment	124,683
New home construct	76,025
New homes with AC (65%)	49,416
Retro Fit Market	75,267
Ontario Furnace Shipments	161,203
Fixed	102,712
ECM	58,491
New Homes	76,025
Retro Fit Market	85,178

Source: New Home Construction Data from CMHC
Shipment data from HRAI

According to industry sources, a reasonable assumption regarding the incidence of thermostat replacement is that half of the replacements occur when both the CAC and furnace are replaced, and the other half occurs when only one of the two (either the CAC or the furnace) are replaced. Using this assumption and using CAC shipment numbers as the most conservative of the two types of replacements, an estimated 117,500 thermostats were replaced in 2008.

The next step is to estimate the fraction of these that would be likely to contain mercury. A survey conducted by the Heating, Refrigeration, and Air Conditioning Institute (HRAI) asked contractors what percentage of the programmable thermostats they installed were replacing mercury thermostats. Respondents were asked to specify a percentage range (i.e. less than 10%; 10-25%; 25-50%, etc). The average value for the 145 respondents who answered this question was 57%. An alternate and perhaps more statistically significant source of information is Statistics Canada's Households and the Environment Survey (2007)⁵⁴, which reported that 53% of households in Ontario had a programmable thermostat as their main thermostat — meaning that 47% had a non programmable thermostat as their main thermostat.

The non-programmable thermostat segment is made up of electronic and mechanical categories. While mercury thermostats are part of the mechanical category, not all mechanical thermostats do contain mercury. Because of this, it is difficult to estimate the fraction of non-programmable thermostats that are likely to contain mercury. This is compounded by the fact that manufacturers' transition to all non-mercury thermostats took place over a long period of time, and mercury thermostat sales decreased significantly as more accurate, more efficient all-electronic models became available.

Notwithstanding these challenges, and recognizing that the numbers presented here are meant to be used for baseline establishment purposes only, one option is to use Frost and Sullivan data on the split of mechanical vs. electronic thermostat sales in 2003. Table 22.2 provides the number of mechanical and electronic thermostats sold in North America for residential markets.


Table 22.2: North American sales of thermostats to the residential market (2003)

Type of Thermostat	Units Sold	Percent of Total Sales
Mechanical	5,180,000	36%
Electronic	9,100,000	74%
Total	14,280,000	

Source: Information provided by Product Stewardship Institute, using Frost & Sullivan 2003 data.

Assuming that 36% of the 47% of non-programmable thermostats replaced in 2008 contained mercury, an estimated 19,881 mercury thermostats were available for collection that year.

Appendix E — PowerPoint Presentation from the Public Consultation/Webinar and Summary of Feedback with Associated Responses



**MANITOBA STEWARDSHIP PLAN
FOR MERCURY-CONTAINING
THERMOSTATS**

Winnipeg, Manitoba
June 21, 2010

Agenda

- Background
- Program Overview — Program Participants, Program Products
- Product Stewardship Plan — Collection Infrastructure, Available for Collection, Pollution Prevention Hierarchy
- Program Performance — Program Accessibility, Consumer Awareness, Collection Targets
- Program Administration — Program Financing, Steward Compliance, Annual Reporting
- Q&A

Background

Manitoba Regulation 16/2010 and Guidelines for Household or Prescribed Household Material Stewardship Program includes mercury-containing thermostats

Producers (i.e., manufacturers, brand owners or first importers) are obligated to develop and deliver a plan to manage the end-of-life products they produce

This is referred to as Extended Producer Responsibility (EPR)

Program Overview

- This plan builds on existing Switch the 'Stat program currently operated by Summerhill Impact
- Switch the 'Stat encourages the installation of energy-efficient programmable thermostats, while simultaneously diverting the older mercury-containing thermostats from landfill to a secure storage facility
- Operational in Ontario since 2006 with collection by participating HVAC contractors and wholesalers
- Ongoing year-round program linked to existing provincial and regional utility incentives
- Switch the 'Stat will be used as base for Ontario and BC EPR program as well

Program Overview

- The ultimate goal of this plan is to develop and deliver a program in Manitoba to satisfy the obligations of the thermostat manufacturers under the Manitoba Regulation
- Secondary goal is to create a program that can be expanded nationally
- Plan will build on the existing Switch the 'Stat contractor channel to include additional collection channels, such as a send-back option

Current Program Results

- Since April 2006, Switch the 'Stat in Ontario has collected more than 48,000 mercury-containing switches from thermostats
- This is equivalent to the recovery of more than 120 kilograms of mercury, given that each thermostat switch contains approximately 2.5 grams of mercury
- To date, there are more than 1,350 heating and cooling contractors and wholesalers registered for Switch the 'Stat in Ontario and BC

Program Partners

HRAI – Heating, Refrigeration and Air Conditioning Institute of Canada



CIPH – Canadian Institute of Plumbing and Heating




Manufacturers signed on:
Emerson Electric Corporation/White-Rodgers
Honeywell Corporation
York/Johnson Controls



Program Partners


In addition to HRAI, CIPH and thermostat manufacturers, the following participants will be involved in program delivery:

- Summerhill Impact for overall program management and delivery
- HRAI contractors and wholesalers and CIPH wholesalers for primary collection
- Other non-member contractors/wholesalers for primary collection



Product Stewardship Plan: Program Products

- This Plan covers “mercury thermostats” defined as products that use mercury switches to sense and control room temperature through communication with HVAC equipment
- Each switch in a thermostat contains 2.5 grams of mercury, and a thermostat can contain 1-4 switches (the average is 1.4 switches per thermostat)
- Mercury thermostats are no longer manufactured by the major manufacturers
- The federal government is working on a risk management strategy that will ban the sale, import and manufacture of all mercury-containing products in to Canada



Product Stewardship Plan: Program Products

- Thermostats are designed to last 20-30 years, however, the majority are replaced more frequently (i.e., every 7-10 years) as a result of renovations, HVAC equipment upgrades, etc.





Product Stewardship Plan: Collection Infrastructure

The Plan will use the following two channels to collect end-of-life thermostats in Manitoba:

1. Contractors/wholesalers
2. Send-back pilot


Overall goal is to provide convenient, accessible disposal options at no cost to consumers



Product Stewardship Plan: Collection Infrastructure

1. Contractors/wholesalers:

- Contractors and wholesalers can register for Switch the 'Stat either via the program website (www.switchthestat.ca) or by calling SI directly.
- SI sends registered contractors and wholesalers the following material — a collection container (United Nations approved for shipping), an introductory letter, program instructions, information brochures to leave behind with their customers and a pre-paid courier waybill.
- Contractors remove old thermostats from homes or businesses and replace them with new thermostats.



Product Stewardship Plan: Collection Infrastructure



1. Contractors/wholesalers:

- Contractors place old thermostats intact in the provided collection containers.
- Contractors continue to collect thermostats until their containers are full, or until they are requested to return their container during a collection "sweep".
- The full containers are shipped using the provided pre-paid courier waybill.
- The courier picks the containers up from the contractor or wholesaler and ships them directly to the recycling facility.



Product Stewardship Plan: Collection Infrastructure



1. Contractors/wholesalers:

- The Plan will use the existing industry contractor/wholesaler memberships (HRAI, CIPH, TECA, etc.) to engage members to participate in the program
- We will also identify and engage additional contractors and wholesalers who are not association members to participate through advertising in industry publications, and participation in industry meetings (via presentations and tradeshow)
- Our aim is to have 30 contractors/wholesalers registered for the program in Year 1 and then increase registration by at least 20 per cent each year



Product Stewardship Plan: Collection Infrastructure



1. Contractors/wholesalers:

- There are many small one-person contractor businesses, so this Plan will work to engage wholesaler branches as drop-off and promotion points for thermostats, as all small businesses will visit at least one wholesaler on a regular basis to get supplies
- We will still send individual collection containers and free shipping to business that request to have their own collection pail
- Finally, participating contractors/wholesalers will be asked to act as drop-off points for the general public



Product Stewardship Plan: Collection Infrastructure



2. Send-back pilot:

- A send-back pilot project for remote areas of the province will be initiated in Year 1 of the program
- Program will have a toll-free number to request shipping, and will send shipping supplies with pre-paid shipping direct to the recycler
- We will look at the results from Year 1 in Manitoba (as well as lessons learned from a similar program that ran in the state of Maine, which saw a collection rate of approximately seven per cent) to determine the amount of promotion for this channel in Years 2-3



Product Stewardship Plan: Available for Collection



- Mercury thermostats are an obsolete material
- Over time, the amount available for collection will decrease to the point where there will be none left in Manitoba homes and businesses
- There is variation in the estimates of the number of thermostats with mercury that are available for collection on an annual basis
- The Final Consolidated MHSW Program Plan developed in Ontario estimated that there were 19,881 mercury-containing thermostats available for collection in 2008



Product Stewardship Plan: Available for Collection



- Given the range of estimates around what is available for collection, as well as the uncertainty in the product lifespan, this ISP will undertake an R&D project in Year 1 in the form of a contractor survey to determine the percentage of Manitoba homes that still contain mercury thermostats and the average rate of removal
- This data will also be used estimate the length of time this collection program will need to run in order to collect all mercury thermostats in Manitoba
- In addition, this ISP will collect ALL types of thermostats removed in Years 1-3 to allow us to gather hard data on the actual percentage of thermostats removed that contain mercury



Product Stewardship Plan: Pollution Prevention Hierarchy

- Reduce/Redesign – already see reduced mercury use in thermostats
- Reuse — this program will not encourage the reuse of old thermostats collected because (1) with mercury-containing thermostats we want to ensure that the mercury is properly managed and retired, and (2) with non-mercury thermostats there is a risk that they will not meet the technical/safety specifications of new HVAC systems
- Recycle — all materials (i.e., plastics, metals, glass, mercury) recovered through this program will be recycled responsibly
- Plan will implement vendor standards that meet provincial/federal regulations for all transportation, storage and processing facilities



Program Performance: Accessibility Targets

The table below provides estimates for the number of collection points in Manitoba over the five year period this plan covers:

Year	Contractor/wholesaler collection points	Send-back
Year 1 (April 2011-March 2012)	50	Number TBD by uptake
Year 2 (April 2012-March 2013)	60	Number TBD by uptake
Year 3 (April 2013-March 2014)	75	Number TBD by uptake
Year 4 (April 2014-March 2015)	90	Number TBD by uptake
Year 5 (April 2015-March 2016)	105	Number TBD by uptake



Program Performance: Consumer Awareness

- The Plan will expand on existing Switch the 'Stat program resources, such as the website, and the communications pieces for the contractors (program instructions) and the general public (information brochure), as well as develop new resources as necessary
- The main messages – why old thermostats need to be recycled, who funds the program, disposal options and program contact information

Overall goal is to make all consumers and contractors/wholesalers aware of the program and the need to properly dispose of thermostats



cleanair



Program Performance: Consumer Awareness

The types of program resources for the general public/consumers:

- Program website will provide a comprehensive overview of program, with periodic updates and an up-to-date list of disposal locations (with search function by postal code/municipality)
- Printed brochures to be distributed by contractors/wholesalers, at retail locations that sell thermostats and at public events
- Printed posters be displayed at retail locations and public events
- Advertising for the general public via Green Manitoba website and Eco-Calendar and municipal calendars
- Information linked to website/phone number provided on packaging of new thermostats (link from US program to Manitoba program)
- Program launch – media/PR strategy



Program Performance: Consumer Awareness

The types of program resources for and via the industry participants:

- Wholesalers, distributors and manufacturers will promote the program to contractors and the general public via their websites, newsletters, signage, etc.
- Wholesalers to provide on-site promotion and education for the small, one-person contractors via signage and printed information, and allow contractors to use their collection containers
- HRAI/CIPH's existing communications channels — website, newsletters, meetings, email updates, etc.
- General outreach to industry via newsletters, industry publications, trade shows, etc.



Program Performance: Collection Targets

The table below provides estimates for the number of thermostats available for collection in Manitoba over the five year period this plan covers:

Year	Mercury-containing Thermostats Available for Collection	Thermostats to be Collected through all Channels	Percent Capture
Year 1 (April 2011-March 2012)	1,650	415	25%
Year 2 (April 2012-March 2013)	1,650	660	40%
Year 3 (April 2013-March 2014)	1,650	910	55%
Year 4 (April 2014-March 2015)	1,650	1,075	65%
Year 5 (April 2015-March 2016)	1,650	1,240	75%



Program Administration: Program Financing

The Plan will be managed and funded by the manufacturers and distributors that sell and/or import mercury-containing thermostats into Manitoba.

Manufacturers and distributors will pay a flat fee toward the administrative costs associated with the program and then will pay per unit fees based on return share of the thermostats collected through the program.



Program Administration: Steward Compliance

SI, HRAI and CIPH will actively identify and recruit manufacturers and distributors that sell and/or import mercury-containing thermostats into Manitoba who are not participating in the program.

Once a company is identified, SI/HRAI will issue communications to advise the steward of their regulatory obligation to participate in a stewardship program.

If the company does not comply, SI/HRAI will issue a letter to Manitoba Conservation advising of the circumstances and requesting investigation and appropriate enforcement.



Program Administration: Annual Reporting

SI will prepare annual reports based on the program results and will make them publicly available via the program website.

Information to be included:

- Plan performance measures – number of thermostats collected, number of collection locations
- Comparison of plan performance against approved targets
- Number of thermostats collected in each regional district
- Geographic distribution of collection locations
- Summary of educational materials and strategies
- Summary of after-market material management
- Summary of R&D activities and outcomes



Timelines

June 21, 2010 – public consultation and webinar

July 9, 2010 – deadline for stakeholders to submit written comments to stewardship plan (jbentley@summerhillgroup.ca)

August 3, 2010 – deadline for SI to submit stewardship plan to Manitoba Conservation/Green Manitoba

April 1, 2011 – official start date for Manitoba thermostat collection program



Krista Prizon
Program Director
Summerhill Impact
1118 Yonge Street
Toronto, ON M4T 1W1
416-922-2445 x246
kprizon@summerhillgroup.ca
www.switchthestat.ca



Participant Question, Comment or Feedback	Program Plan Response or Action
What does “retire” mercury mean? Do you destroy the mercury by incineration?	The Manitoba Stewardship Plan for Mercury-containing Thermostats will ensure that the mercury that is collected from end-of-life thermostats is recycled. The mercury will be quadruple distilled and then sold for re-use in other mercury-containing products, such as fluorescent lighting.
Have you considered expanding your program to include other mercury-containing products?	Because the Manitoba Stewardship Plan for Mercury-containing Thermostats is funded entirely by thermostat manufacturers, we are not looking to include other product categories at this time.
What is the interest of retailers to take back mercury-containing thermostats if they no longer sell them?	At this point, we are not proposing to include a return-to-retail component in Manitoba in Year 1 of the program, so there is no obligation for retailers to operate take-back programs. In the future, we may look for opportunities to run timed, staffed take-back campaigns at retail locations. In that case, retailers will be invited to respond to a request for expression of interest if they are interested in participating in such a campaign.

In addition to the questions above which were asked during the in-person consultation, the letter and information on the following pages was submitted to all HHW steward agencies from Resource Conservation Manitoba (RCM) after the June 21, 2010 public consultation.

A Non-Profit Centre for Applied Sustainability

To: Representatives of Household Hazardous Waste Stewardship organizations
From: Peter Miller, Policy Committee Chair of Resource Conservation Manitoba (RCM)
Re: Comments on HHW Draft Stewardship Plans
Date: July 9, 2010

Resource Conservation Manitoba (RCM) is a non-government environmental organization whose mandate is to promote applied sustainability through education, policy analysis and advocacy. The range of our activities is indicated on our web site at www.resourceconservation.mb.ca. Among other concerns, we have promoted the 4 Rs and intervened on waste reduction and diversion issues for 25 years. We recently successfully persuaded the City of Winnipeg to undertake a complete review of its waste management and minimization efforts in order to move from the current 17% diversion from landfill to 50% or better in line with a number of leading cities.

Thank you for the informative consultation session held at the Forks on June 21, 2010. It was encouraging to see that a number of organizations have well-established stewardship programs, which are undergoing enhancement as EPR regulation is rolled out in Manitoba. We are not able to comment on the programs individually, but we have prepared a brief statement of principles and elements that we think are important for EPR programs and which we urge you to consider in finalizing your plans and the province to consider in reviewing the plans. These are found in the attached document: *RCM Views on Extended Producer Responsibility*. We here supplement those views by focusing on the special considerations that apply to the collection and diversion of hazardous waste.

Reduction in toxicity and wastage

Although the focus of the stewardship programs is on collection and diversion of wastes, we note first that there should be continuous pressure for and progress in reducing the toxicity of products, substituting less toxic products, and avoiding wastage and inefficient use of toxic products. Product design and consumer education will be key components in comprehensive toxic waste reduction programs.

Performance measures and target

Most waste diversion programs have as a major objective the conservation and recovery of resources directly and indirectly through conservation of energy and water consumed in extracting and processing raw materials. Hazardous waste programs, on the other hand, have harm prevention as an overriding goal, often in combination with resource recovery. The hazardous substances you deal with are banned

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from landfills and sewers because of their potential harm to people and the environment. This means that 100% of these waste materials should be diverted from landfill and recovered for 4R treatment or, secondarily, for special safe disposal. There is no other legal alternative for waste hazardous materials.

The implication of these observations is that program targets and performance measures should ideally approach a 100% recovery rate (from materials available for recovery) as closely and rapidly as possible.

We recognize that there are challenges in achieving such a target. One of these challenges is to establish proper performance metrics with which to define the target and measure its achievement. Some of the draft plan discussions point to multiple paths by which the target materials enter and leave the consumer's possession, the variable lag times between purchase and disposal, hoarding, and determination of residual quantities of hazardous products left for disposal after use. Whatever metrics are used in practice, one test of their reliability might be their correlation with success in keeping prohibited hazardous products out of landfills and sewers. Periodic detailed waste audits and regular municipal wastewater testing should indicate whether the prohibitions, and thus the diversion programs, are succeeding. These end-point audits can then be supplemented by other investigations, including surveys of consumer behaviour, to determine just what happens to the listed materials and what are the behaviours associated with their fate. This information in turn can guide development of more effective collection, education and marketing, incentive and enforcement programs.

RCM believes that the regulator and the stewards, involving other stakeholders as appropriate, should engage in systematic auditing and research to answer the questions (1) how closely are we approaching 100% recovery, (2) what is the fate of unrecovered materials, (3) what are the barriers to improving recovery, and (4) what modifications in collection systems, education and social marketing, incentives and enforcement can bring us closer to our goal. We believe that provision for such auditing and research should be built into the stewardship plans approved by Manitoba Conservation. Much of this research can be done most cost-effectively on a cooperative basis.

Targets should reflect the 100% recovery ideal. RCM believes, for example, that the 25% battery recovery relative to sales by 2015 by Call2Recycle is unlikely to reflect anything close to a 100% recovery of what is available to recycle. We need an account, established through consumer research and waste audits, of what has happened to the other 75% and what can be done about it. Analogous remarks may apply to the other hazardous waste stewardship programs.

Involvement of Retailer

The best management for most toxic products is to use them up, where this is applicable. However, there are some forms of waste like batteries, fluorescent light tubes, broken mercury thermometers, etc, where this does not apply. The general rule should be that it should be as easy to get rid of the product safely as it was to purchase it in the first place. In general this means a significant involvement of the retailer. The

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current province-run system is both car-dependent and inconvenient. It must be changed. Likely in the future there will be more people living without cars.

For large bulky items like TVs, which were probably delivered to the home in the first place, there should be a pick-up of the product. One suggestion is that where there is a delivery fee that it be extended to the cost of picking up the product when it is no longer of use. There could be a sticker attached to this effect. Backhauls by delivery vehicles and arrangement with existing recycling services, such as Canadian Diabetes pickups, provide cost-effective means for collecting bulky items for a fee.

Solvents

Solvents are another product that get used but not really used up. Mostly they end up being poured down the drain after they have been used to clean paint brushes, for example. One solution is to provide free of charge (like paint stir sticks) a container, preferably wide mouthed, into which the used product could be poured and sealed in for safe delivery to a depot or to the retailer.

Education

Education of the consumer is crucial, but it is not enough if there is no convenient and safe way for all people to take care of their HHW.

Thank you for the opportunity to comment on your stewardship plans.

Peter Miller, Policy Committee Chair p.miller@uwinnipeg.ca
Resource Conservation Manitoba

Sent to:

Call2Recycle - csmith@call2recycle.org, tbilian@call2recycle.ca

ProductCare - mark@productcare.org, belinda@productcare.org

CleanFARMS - friesenb@clean_farms.ca

Switchthe'Stat - kfriesen@summerhillgroup.ca

PCPSA - Ginette.vanasse@medicationsreturn.ca

MARCC - marrc@mts.net

Manitoba Conservation (Pollution Prevention) - Laurie.Streich@gov.mb.ca, Rod.Mcormick@gov.mb.ca

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RCM Views on Extended Producer Responsibility

Manitoba, like many other jurisdictions, is implementing a shift in waste reduction responsibilities from taxpayers to producers. The new regulated, industry-led programs are examples of Extended Producer Responsibility or EPR. Resource Conservation Manitoba (RCM) supports this shift and makes the following recommendations regarding best practices.

Clear Objectives

In our view, the primary ideal goals of a waste minimization and management program should be “Zero Waste, Zero Harm.”¹ Zero waste means both conservation of resources and minimization or elimination of residual waste requiring disposal. Zero harm means minimization or elimination of products and wastes toxic to workers, users, waste handlers, the public, and the environment and the minimization or elimination of harmful emissions, effluents, and residual wastes. Life-cycle and footprint analyses and effects monitoring of products and processes are important tools for assessing levels of waste and harm.

Of course other dimensions of sustainability and a variety of other social principles also apply, such as justice, fairness, optimizing social wellbeing, cost-effectiveness, innovation and economic development. RCM believes that such goals and principles should guide program construction and evaluation, assist in the choice between alternate models and guide research into the identification of best practices.

Although industry may be required to assume responsibility for operating programs to fulfill these requirements, government is ultimately responsible for seeing that the job gets done one way or another and assessing whether that is happening.

Cost Internalization

Extended producer responsibility means that responsibility, including cost responsibility, shifts from the taxpayer to the producers, as they become stewards of the waste their products generate. Managing packaging and end-of-life disposal becomes a cost of doing business in addition to the

¹ We recognize that zero waste and zero harm may not be feasible in the short term for economic or technical reasons, but unless ideal goals like these are set, the drive to address and resolve cost and technical barriers will be lost and a lacklustre continuation of the status quo will persist.

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costs of resources, labour, advertising, transportation, etc. The totality of producer and distributor costs plus mark-ups are rolled into a single cost or price to the consumer.

One of the intentions of Extended Producer Responsibility regulation is to encourage producers to reduce the impact their products have at the end-of-life by making their products more readily reusable, repairable or recyclable. By requiring producers to incorporate end-of-life management into the cost of their products, producers will develop ways to improve the product design and production processes in order to reduce these costs. However, when such costs are not incorporated into the cost of the product and producers are permitted to charge a levy directly to consumers, there is no incentive for producers to improve product design and manufacturing decisions. Furthermore, levies charged at the till may be misunderstood by consumers to be a government tax rather than a responsibility shirked by producers and may cause frustration if consumers are unable to easily anticipate the final cost of their purchases because a variety of the products they have selected have such levies.

Consumer Education & Awareness

RCM recognizes that responsibility for waste and harm reduction and prevention is not solely that of producers. While producers have the greatest control over the types of products available on the market, consumers also play an essential role through their choice, use and disposal of products. Hence it is important that consumers are well-informed of the rationale, responsibilities and opportunities of stewardship and the role they play. They also need specific and comparative product information regarding personal and environmental hazards, efficient use, and safe and efficient disposal. Product-specific information should be available at point of sale through sales representatives, videos, posters, labels, brochures, etc.

Consumer Incentives

Consumers do not always have stewardship considerations top-of-mind even when they are informed and they are subject to competing motives, including personal convenience and personal costs and rewards. Successful stewardship programs cannot rely merely on conscientious behaviour by industry and consumers. Regulation, enforcement, collection systems and incentives that make it easier and more rewarding to do the right thing and harder and less rewarding to do the wrong are also important as a complement to informed conscience and principle. The optimal application of education, social marketing, enforcement and incentives is a matter for behavioural research and experimentation. We can learn from other jurisdictions in this regard, but there is no reason why we should not be experimental leaders as well.

RCM supports consumer incentives where they can be proven successful in moving society closer to the ideal goals of zero waste and zero harm. The successful examples have visible costs that are avoidable, or rewards that are obtainable, by adopting the preferred course of consumer behaviour. We have previously noted, for example, the Irish success in reducing disposable plastic bag use by 90% through a modest levy and we look with envy at Alberta's recovery rates for drink containers from their deposit/return system (<http://www.bottlebill.org/legislation/canada/alberta.htm>). Discounted coffee to customers who bring their own mug illustrates

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rewarded behaviour. Levies on tobacco products are an example of “sin taxes” aimed at reducing harmful behaviour, which might provide a model for taxing products whose waste is hazardous to the environment and human health.

Targets and Tracking

It is vital that stewards establish targets to guide the development and measurement of their programs. We strongly recommend requiring stewards to work with stakeholders to develop reasonable, yet challenging targets and suitable means to track and measure performance.

In addition, we believe that targets and performances should be appraised with the overall stewardship objectives in mind. This means, for example, that the greatest social and environmental value lies in the highest recovery rates for the most toxic and harmful materials, the most valuable resources, and those whose diversion has the greatest favourable impact on energy and water conservation and GHG reduction.

Meaningful Public Consultation

Successful waste reduction and recycling programs require public cooperation and acceptance. A variety of consultation methods should be employed to reach a variety of constituencies. Informed public dialogue can help to shape a program responsive to public concerns and ideals. A waste reduction advisory committee of informed, concerned citizens can provide regular feedback and new ideas. EPR steward programs should ensure that they have an effective consultation program in place.