

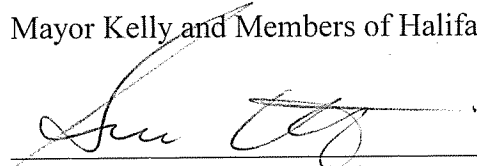


PO Box 1749
Halifax, Nova Scotia
B3J 3A5, Canada

Item No. 11.3.1
Halifax Regional Council
May 4, 2010

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:


Councillor Sue Uteck, Chair,
Energy and Underground Services Committee

DATE: April 19, 2010

SUBJECT: Energy Efficiency Initiative: Vending Machines

ORIGIN

- Motion, April 16, 2010, the Committee passed a motion recommending an overall kWh Percentage Improvement Approach whereby Refreshments Canada will enter into an Memorandum of Understanding with the HRM to voluntarily improve the energy efficiency of its entire fleet by 25% over the next 3 years.
- April 16, 2010, Item 4.1, Energy Efficiency Revision to ByLaw A-200 Automatic Machines
- February 19, 2010, Item 4.1, Energy Efficiency Revision to ByLaw A-200, Respecting Automatic Machines
- January 22, 2010, Item 5.1.1, Energy Efficiency Revision to ByLaw A-200, Respecting Automatic Machines
- November 20, 2009, Item 5.1.1, Energy Efficiency Revision to ByLaw A-200, Respecting Automatic Machines

RECOMMENDATION

The Energy and Underground Services Committee (EUGS) recommends Halifax Regional Council direct staff to develop a Memorandum of Understanding with Refreshments Canada whereby the vending industry shall voluntarily improve energy efficiency of its entire fleet by 25% over the next 3 years.

BACKGROUND

As per the November 22, 2009 Information Report (Attachment One) from staff to the Energy and Underground Services Committee, and contained within the December 8, 2009 Energy Efficiency Initiatives Presentation to Regional Council, staff had identified a very viable energy efficiency initiative related to refrigerated vending machines. This initiative upon review would have a very large impact on reducing community greenhouse gas (GHG) emissions and reducing community energy consumption and costs (scoped with an order of magnitude of approximately \$500,000 per year and 5,000 tonnes of GHG's).

In 2002 the Community Greenhouse Gas Inventory for Halifax Regional Municipality was calculated to be 6.7 million tonnes of GHG's. Staff will be calculating a 2008 inventory in later 2010. In order to meet Kyoto, EGSPA, Federal emissions reduction goals, or similar emissions reductions targets, the municipality will need to reduce emissions in the neighborhood of 5,000,000 tonnes by 2050. Many of these reductions will come in the way of conversions to wind power and other renewable energy sources, also from utilizing more energy efficient products, and changing behaviours. The Federation of Canadian Municipalities recently released a paper which demonstrated that municipalities across Canada are responsible for approximately 44% of emissions.

In order to progress emission reductions, Halifax Regional Municipality takes actions such as:

- Execution of energy efficiency projects, such as Alderney 5, Canada Games Center Solar Installation, and other energy efficiency projects;
- Incubation and advocacy of energy efficiency ideas, such as District Energy and Wind Power, and participation in the Renewable Energy Policy consultations;
- Education programs, such as the Anti Idling program;
- Development of policy, such as the Municipal Policy to build all new buildings to LEED silver minimum standards and inclusion of Sustainable Procurement into the Procurement Policy;
- Planning activities such as Regional Plan, HRM by Design, and Active Transportation Planning;

The municipality also wields great power with legislative authority in which it can enact and enforce a set of ByLaws.

Halifax Regional Municipality has not yet made a Community Emissions Reduction Commitment. However, upon review of municipal legislation, staff became aware of ByLaw A-200, Respecting Vending Machines as an opportunity to adopt technological change to help progress our community energy consumption and emissions reductions.

DISCUSSION

Following initial presentation of the concept to the Energy and Underground Services Committee in November, staff were directed to commence primary stakeholder engagement. Staff met with representatives from Coca Cola and Pepsi, facility owners/ operators, and a number of community stakeholders.

Following these consultations, a presentation by Refreshments Canada to the EUGS Committee, and follow up conversation with industry, an alternative to the legislative approach was put forth.

As per the March 31st letter from Refreshments Canada to Councillor Uteck (Chair of the EUGS Committee), industry has proposed a Voluntary Agreement to increase efficiency by 25%. The EUGS Committee advised staff to hold Refreshments Canada to a 3 year timeline.

This is a win-win-win situation. The community will reduce their energy costs and GHG emissions, HRM has helped facilitate that improvement, and Refreshments Canada members are able to incorporate energy efficiency initiatives currently adopted in achieving this commitment. The primary members of Refreshments Canada are Coca Cola and Pepsi. Both organizations have laudable Corporate Social Responsibility programs, and this initiative is reflective of their commitment to the environment.

Staff look forward to ongoing consultation with the beverage industry. The EUGS Committee looks forward to follow-up communication on adoption and success of this agreement.

BUDGET IMPLICATIONS

This initiative has no budget implication to Halifax Regional Municipality Operating or Capital Budgets. Costs and Savings are to Industry and the Community at large.

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

1. Regional Council could direct staff to proceed with the process to revise ByLaw A-200 and take a legislative approach to energy efficiency;
2. Regional Council could direct staff to not proceed with any Vending Machine Energy Efficiency Initiative;

ATTACHMENTS

Attachment 'A': Supplementary Staff Report: April 5, 2010
Attachment 'B': Staff Report: December 30, 2009
Attachment 'C': Staff Report: November 5, 2009

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: Richard MacLellan, Manager, Sustainable Environment Management Office, 490-6056



PO Box 1749
Halifax, Nova Scotia
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Energy and Underground Services Committee
April 16, 2010

TO: Chair and Members of Energy and Underground Services Committee

SUBMITTED BY:

A handwritten signature in dark ink, appearing to read "Phillip Townsend", written over a horizontal line.

Phillip Townsend, Director, Infrastructure and Asset Management

DATE: April 5, 2010

SUBJECT: Energy Efficiency Initiative: Vending Machines

SUPPLEMENTARY INFORMATION REPORT

ORIGIN

This report originates from:

- February 19, 2010, Item 4.1, Energy Efficiency Revision to ByLaw A-200, Respecting Automatic Machines
- January 22, 2010, Item 5.1.1, Energy Efficiency Revision to ByLaw A-200, Respecting Automatic Machines
- November 20, 2009, Item 5.1.1, Energy Efficiency Revision to ByLaw A-200, Respecting Automatic Machines

BACKGROUND

Following Industry Presentation on February 19, 2010 the committee instructed staff to further consult with industry and obtain industry fleet information. This report provides that information and the outcome of the further consultation.

In addition, during the presentation to Council, Refreshments Canada provided the committee with an overview of their concerns regarding the staff report. Staff will also respond to those concerns.

DISCUSSION

Vending Machine Fleet Information, Halifax Regional Municipality

Attachment One overviews the Vending Machine Fleet in HRM (Source: Refreshments Canada). These figures are generally what staff have surveyed and found.

Alternative to Recommendation: Refreshments Canada

Attachment Two overviews an Alternative to the January 22, 2010 Staff Recommendation. Summarily, the industry alternative is that of a voluntary program instead of a regulatory program. The voluntary program offers substantial energy and economic savings: roughly saving slightly over 3,000 tonnes of GHGs per year after adoption and \$300,000.

Following receipt of the information from industry and under the premise that should the committee be unsatisfied with the voluntary progress following a review in one years time, reversion to the ByLaw approach could be enacted, staff would support the Industry Alternative.

Staff would recommend in this situation that Option 1: Overall KwH % Improvement Approach be adopted at 25% within next 3 years. (Note the 3 years is a slight stretch of the industry benchmark in their communication).

Staff response to Summary of Industry Concerns with the HRM Vending Machine Bylaw

Attachment Three summarizes the staff response to the Industry Concerns/ Statements.

BUDGET IMPLICATIONS

None.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ATTACHMENTS

- One: Fleet Information
- Two: Industry Alternative
- Three: Staff Response to Industry Concerns Document

**Energy Efficiency Initiative:
Vending Machines
Community Council Report**

- 3 -

April 16, 2010

A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/cc.html> then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by : Richard MacLellan, Manager, Sustainable Environment Management Office, 490-6056

Inventory

- Over 40 types of equipment in place at HRM
 - All of different ages, specification etc.
- As of March 1, 2010 - total Refreshments Canada member machines were 1346
 - 64% newer than 2002 or already upgraded.
 - 50% in ENERGY STAR I performance level or better.
 - Newest equipment functioning in the 5-6 KWH range.
- Less than 36% of equipment would be a suitable candidate for an energy saving device
 - That percentage is declining rapidly and should be zero in less than two years

30/03/2010

Refreshments Canada Members Vending Machine Fleet in the HRM

As of March 1/2010 - total number of machines owned, operated or loaned out by Refreshments Canada members in HRM - 1346

Year/Status	% of Fleet	Kwh per day
Non-Upgraded pre 2002	36%	9.8 - 14.7*
Upgraded pre-2002	15%	9.7
2002-2003	9%	6.5 - 7.3*
ENERGY STAR I 2004-2006	25%	< 7.9**
ENERGY STAR II 2006-	16%	< 6.5**

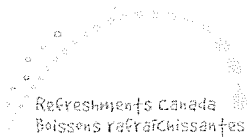
Average Kwh HRM fleet 9.4Kwh***

Notes:

* Ranges are provided due to the wide range of different equipment

** Denotes the upper limit - most machines perform better

***To calculate average mid-points of ranges were used and high point of upper limits



31/03/2010

Councillor Sue Uteck
Chair Energy and Underground Services Committee
c/o Richard MacLellan
HRM Sustainable Environment Management Office
PO Box 1749
Halifax NS B3J 3A5

Via email: maclelri@halifax.ca

Re: Refreshments Canada Vending Machine Inventory and Proposal for Consideration

Dear Madame Chair:

As a follow up to our February 19th appearance before the HRM Energy and Underground Services Committee and as agreed to with your Committee please find the enclosed inventory of Refreshments Canada members' vending machine inventory and a proposal for a industry/Halifax Regional Municipality (HRM) partnership to accelerate the improvement of energy efficiency of vending machines in the Region.

Refreshments Canada very much appreciates the opportunity your committee afforded the sector to dialogue with HRM staff and we hope you find our sector's proposal consistent with the HRM long range plans.

The inventory conducted by our members indicated that as of March 1st, 2010 our sector has 1346 machines in the HRM. Key details are:

- Refreshments Canada members have over 40 different types of vending machine equipment operating in the HRM. These are either directly operated by the membership or are loaned to customers.
- 50% of the equipment is aged 2002 or newer.
- 50% operating at ENERGY STAR I level or better. (Note the ENERGY STAR ratings for vending machines were not finalized until 2004 so although 15% of the machines cannot be labelled as ENERGY STAR they are operating at the required kWh rating).
- 15% of the pre-2002 machines have already been upgraded resulting in energy improvements in the 5 kWh per machine per day range).
- 36% of the equipment is pre-2002 and is targeted to be retrofitted, upgraded or retired within the next 2 to 3 years).

.../2

Refreshments Canada is the national trade association representing the broad spectrum of brands and companies that manufacture and distribute the majority of non-alcoholic liquid refreshment beverages consumed in Canada. Refreshments Canada represents more than 40 brands of juices, juice drinks, bottled waters, sports drinks, ready-to-serve iced teas and coffees, new-alternative beverages, carbonated soft drinks, energy drinks and other non-alcoholic beverages.

20 Bay Street WaterPark Place, 12th Floor Toronto ON M5J 2N8 Tel: (416) 362-2424 Fax: (416) 362-3229
www.refreshments.ca

- These declining 36% are the suitable candidates for an energy saving device.
- By Federal regulation (2008) all new vending equipment in Canada must meet at least the ENERGY STAR I rating.
- Newer equipment is operating in the 5-6 Kwh range (confirmed by both the Refreshments Canada inventory and HRM testing) with the average of the fleet being approximately 9.4 Kwh.

In addition to providing HRM staff the sector's inventory, Refreshments Canada also proposed a partnership agreement that would preclude the need for a by-law revision. The central premise of the partnership is to deliver a win-win solution for both the HRM by achieving the Region's policy objectives without the attendant requirement for additional oversight and enforcement resources with a flexible approach that allows the industry various mechanisms to achieve the required energy improvements. Two variations were tabled by Refreshments Canada for consideration by your committee. These are:

1. Overall Kwh Percentage Improvement Approach:

- Refreshments Canada would enter into an agreement with the HRM to voluntarily improve the energy efficiency of its entire fleet by 25% over the next 4 years.
- This would result in an average Kwh usage within the ENERGY STAR performance window.
- Refreshments Canada would enlist the Canadian Automatic Merchandising Association (CAMA) to support and participate in the agreement.
- Refreshments Canada would provide annual inventory of equipment and performance to benchmark improvements. This could be audited by spot checks by the HRM.

2. Equipment Kwh Cap Approach

- Refreshments Canada would enter into an agreement with the HRM to voluntarily improve the energy efficiency of its entire fleet by implementing a declining Kwh cap for equipment in the HRM over a period of years.
- This would result in actions to either improve the energy efficiency of equipment above that cap, retrofitting of that equipment or retirement of that equipment.
- Work would have to be undertaken with the HRM to identify the suitable Kwh caps.
- Refreshments Canada would enlist the Canadian Automatic Merchandising Association (CAMA) to support and participate in the agreement.
- Refreshments Canada would provide annual inventory of equipment and performance to benchmark improvements. This could be audited by spot checks by the HRM.

Benefits of These Approaches for the HRM:

- Both these approaches would achieve the HRM objectives of improving the energy efficiency of vending machines in the region with corresponding carbon improvements.
- Both do so without increasing the work load of the enforcement officers and the by-law/permitting office.
- Both will be supported by industry.
- HRM retains the ability to regulate if not satisfied with progress under the agreement.

Refreshments Canada is the national trade association representing the broad spectrum of brands and companies that manufacture and distribute the majority of non-alcoholic liquid refreshment beverages consumed in Canada. Refreshments Canada represents more than 40 brands of juices, juice drinks, bottled waters, sports drinks, ready-to-serve iced teas and coffees, new-alternative beverages, carbonated soft drinks, energy drinks and other non-alcoholic beverages.

Benefits of These Approaches for Industry:

- Both provide flexibility in how to achieve the energy savings. It can be accomplished by retiring and replacing equipment, retrofitting equipment, adding external or internal energy saving devices, shutting off lights, putting lights on timers.
- Both approaches dovetail with the work already ongoing to improve the energy efficiency of vending machines.
- Both provide a reasonable timeframe while delivering results.
- Both are collaborative approaches with the HRM, rather than prescriptive regulated approaches.

Should one of these approaches be accepted by the Committee, Refreshments Canada also further offered to act as the single point of contact for the HRM, reporting body and to develop a best practice document that could provide guidance to smaller operators of vending machine equipments on how to meet the requirements of the agreement.

Again Refreshments Canada would like to thank the Committee and HRM staff for the opportunity to discuss the issue and alternate proposals. We also thank you in advance for your consideration of this correspondence. Please feel free to contact me at (416) 362-2424 x2 with any questions.

Sincerely



Justin Sherwood
President
Refreshments Canada
justin@refreshments.ca

Encl.

Refreshments Canada is the national trade association representing the broad spectrum of brands and companies that manufacture and distribute the majority of non-alcoholic liquid refreshment beverages consumed in Canada. Refreshments Canada represents more than 40 brands of juices, juice drinks, bottled waters, sports drinks, ready-to-serve iced teas and coffees, new-alternative beverages, carbonated soft drinks, energy drinks and other non-alcoholic beverages.

Staff Response to:**Refreshments Canada: Summary of Industry Concerns with the HMR Vending Machine Bylaw (Feb 17, 2010)**

Refreshments Canada: The HRM Study is not statistically sound and does not portray an accurate picture of “potential” energy savings. The HRM ‘Study’ bases its analysis of energy savings from vending machines across the HRM on one of the oldest, least energy efficient machines in the HRM. The study then makes energy and cost savings assumptions across all vending machines, despite the fact that most vending machines are already far more energy efficient than the test machine. This is not a statistically sound method of conducting a study nor are the assumptions sound.

Staff Response: The study performed by Facility Development and SEMO Staff was not intended to be a full statistical survey of all vending machines, nor a “scientific study”. The intent was to bring awareness to facility owners and operators (particularly in HRM Buildings) and the public in the use of energy in everyday devices. And that the consumption is easy to reduce. That being said, HRM staff has followed up on the first machine to analyze other installations. Quantitative measures confirm claims from the manufacturer of VendingMiser: Energy is reduced from 25 to 50% depending on the age and location of the machine.

Refreshments Canada: The HRM Study is very similar to VendingMiser marketing material. The ‘Study’ reads more like a ‘marketing’ document than a serious scientific study. The fact that similar numerous studies are available on the internet and the ‘Study’ points to a singular product as a solution raises serious questions regarding the ‘Study’.

Staff Response: HRM staff have not promoted a singular product as a solution. The Staff Recommendation is that All EnergyStar Tier II machines and machines with other energy efficiency devices (such as the EMS 55 and Carel units Coke and Pepsi use) be exempted. It is important for HRM to communicate to the public examples of responsible energy use and best practices.

Refreshments Canada: Vending Machines are continually upgraded. The life of a vending machine is approximately 10 years and equipment is constantly being upgraded. Since 2004 new equipment has been ENERGY STAR I rated (using 7.7KwH or less in a 24hr period) and since 2007 ENERGY STAR II equipment has been introduced (using 6.7 KwH or less in a 24 hour period). These results are better than the results achieved in the Study.

Staff Response: 59 % of the Fleet is not EnergyStar rated (I or II).

Refreshments Canada: The HRM Study points to a ‘single source’ solution whereas other technology is superior. VendingMiser is technically inferior to other devices which instead of using motion sensing to turn the machines on and off can actually trace customer patterns and use this information to drive cooling cycles. With the VendingMiser, the reliance on motion as a trigger means that there is a possibility that customers may actually be served a warm beverage. In addition new ENERGY STAR I and II equipment already incorporates low power and power down modes, this makes the VendingMiser redundant and there has been no analysis undertaken on the compatibility of these functions and the VendingMiser.

Staff Response: This statement is not correct. The Staff Recommendation is to enable a variety of options for vending machine providers. Staff would dissent on the comment of VendingMiser being a technically inferior solution and would reference the large number of VendingMiser customers in North America as proof of the product performance. The customer list at: http://www.usatech.com/energy_management/index.php is exhaustive.

Refreshments Canada: The cost of purchasing VendingMiser equipment for so many machines at once is too much for many companies to bear. Many companies will not be able to bear the cost of purchasing so many VendingMiser equipment in such a short time period. This high cost will force many companies to reassess their business model with the potential result of some locations losing machines (and accompanying commission) and other smaller vending companies simply going out of business. Also, suggestions of a 'one year payback' on the devices is overly simplistic as the vending owner and power purchaser are not the same entity. Thus the standard energy efficiency incentives do not apply in this situation.

Staff Response: This issue is a classic energy efficiency problem. Those that have direct impacts on energy use frequently do not pay for consumption, nor the environmental costs, and do not have the corresponding incentives to reduce usage. The implementation of the ByLaw promotes responsible energy use. The short payback of the solution justifies an approach that links the companies that have the most influence on the adoption of the efficient technology.

Refreshments Canada: A legislated approach is unnecessary. Many companies have taken the initiative to develop innovative and efficient vending technologies. The technologies being developed by these companies are in many ways superior to VendingMiser. Older vending machines are continually being phased out and, replaced with new ones which are increasingly energy efficient. This incremental innovation is proof that a government-mandated 'single source' solution is not the best approach.

Staff Response: HRM encourages the best technology to be deployed as rapidly as possible (economically). It is not responsible to encourage the replacement of old machines, as the embodied energy, and ease of retrofits is a balanced approach.

The staff recommendation allows a variety of solutions. The reality is that the Vending Miser Technology has been available for about 10 years, and there is still relatively little adoption. Voluntary implementation has not proven successful or adequate to date.

Refreshments Canada: The Committee should defer any decision on a Bylaw until further study can be completed. The proposed Bylaw is impractical/unworkable and it leaves many unanswered questions. Will VendingMiser technology be required on all machines - even ENERGY STAR ones? If so, what is the 'cutoff' rate for energy consumption where VendingMisers will be required? If HRM plans to proceed based on age, what about the older machines which have been retrofitted? Does the HRM plan to test all machines before determining which would require VendingMiser technology? How does HRM plan to do this?

Staff Response: This statement is uninformed. The staff recommendation takes a balanced, flexible approach to achieving energy improvements.

Refreshments Canada: A phased-in approach using Energy Star benchmarks would be a much better approach. Note - Since 2008 all new vending equipment in Canada must meet ENERGY STAR I rating. An alternate solution would be to phase out all pre-Energy Star Equipment within a defined period of time (i.e. 5 years).

Staff Response: The provided Fleet Overview shows that 16% of the fleet meets Energy Star II criteria and 59% do not meet any EnergyStar criteria.



PO Box 1749
Halifax, Nova Scotia
B3J 3A5, Canada

Energy and Underground Services Committee

22 January 2010

February 19, 2010
April 16, 2010

TO: Chair and Members of Energy and Underground Services Committee

SUBMITTED BY:

A handwritten signature in dark ink, appearing to read "Phillip Townsend".

Phillip Townsend, Director, Infrastructure and Asset Management

DATE: 30 December 2009

SUBJECT: Energy Efficiency Revision to ByLaw A-200, Respecting Automatic
Machines

ORIGIN

Energy and Underground Services Committee, Report, November 20, 2009: Energy Efficiency Revision to ByLaw A200, Respecting Automatic Vending Machines (Attachment One).

RECOMMENDATION

It is recommended that the Energy and Underground Services Committee recommend to Halifax Regional Council to:

1. Approve in principle an energy efficiency revision to ByLaw A200 requiring, notwithstanding any other provision of the ByLaw, that any automatic electrified vending machine has installed thereon an energy conservation device which is designed to power down the machine when the immediate premises are unoccupied.
2. It is further recommended that Regional Council direct staff to arrange for the formal introduction of the said amendments for First Reading.

BACKGROUND

In September 2005, Regional Council approved a Greenhouse Gas Emissions Reduction Plan to reduce corporate Greenhouse Gases by 20% from 2002 levels by 2012. In November 2007, Regional Council approved a Community Energy plan, as a functional plan of the Municipal Regional Planning Strategy (Regional Plan). Both of these plans bring forth actions and initiatives required and suggested to reduce corporate and community electricity consumption and GHG emissions. The 2005, ICLEI Energy Services Community GHG Inventory shows us that the Community emits 6,775,289 tonnes of GHGs annually, consuming 54,167,709 GJ of Energy.

As a measure to progress our corporate commitment, Staff initiated a project in early 2009 to install an energy efficiency device, called a Vending Miser (Attachment Two), on HRM Vending Machines (machines contracted with Coca Cola for placement on HRM facilities). The project, as per the attached Lessons Learned (Attachment Three), was a success showing a one year payback. The Vending Miser reduced electricity consumption by approximately 50%. In our Lessons Learned, the summary of the Case Study is:

	kWh per day	Cost per year
Before VendingMiser	12.5	\$524.69
After VendingMiser	7.7	\$323.21
Reduction	4.8	\$201.48

Following this project success, Staff investigated opportunities to scale this initiative to the community. Upon investigation, it was learned that through ByLaw A200, which HRM licenses Vending Machines, there are approximately 2,000 Refrigerated Electrified Automatic Vending Machines (ie pop machines) and 1,000 non-refrigerated, Electrified Automatic Vending Machines (ie chip and candy bar machines). Jointly, these machines cost over \$1 Million per year to electrify across HRM and emit 12,000 tonnes of GHGs. Potentially, community adoption of this initiative would reduce electricity costs in the community by over \$500,000 and 5,200 tonnes of GHGs.

For the sake of context, as per the December 8th presentation to Regional Council on Energy Efficiency Projects, HRM has spent approximately \$6 million in the past 5 years to reduce approximately 10,000 tonnes of GHG emissions (and realized an over 18% Return on Investment). This project would accomplish essentially half that achievement.

22 January 2010

DISCUSSION

Halifax Regional Municipality administers ByLaw A200, Respecting Automatic Machines. Under the premise that Vending Machines are in competition with establishments that are obligated to pay commercial property and business occupancy taxes, and the Municipality provides Police, Fire, and other services to protect these machines, the Municipality has the authority under the Municipal Government Act to license Vending Machines.

Some organizations, particularly organizations with dedicated Energy or Sustainability Staff, such as Dalhousie University, are beginning to require Vending Miser in agreements with Vendors putting Vending Machines on their properties. The intent of this ByLaw Revision is to mandate the capable technological change towards this energy savings opportunity, as change has not occurred quickly with status quo efforts. The product referenced has been available for over five years. The VendingMiser is a proven product. There are numerous testimonials including universities, municipalities, and organizations, available at: www.usatech.com/energy_management/energy_testimonials.php

Staff is seeking approval in principle to incorporate an energy efficiency revision to ByLaw A200 (Attachment Four) that will require that electrified vending machines shall have a device, either built into the unit or purchased as an add on, that will provide power reduction when the area is unoccupied (either by motion sensor or by programme).

The exception to the ByLaw revision would be vending machines containing perishable goods (such as milk and dairy products), and vending machines that are not electrified (such as peanut and jelly bean machines). Also, EnergyStar Tier II Vending Machines, manufactured post 2007, have energy efficiency devices already installed as part of their EnergyStar certification and with the performance demonstrated would comparably meet the energy efficiency of a Vending Machine with a device such as a Vending Miser.

While staff have referenced the Vending Miser in the context of presenting our projects, and discussions around this initiative, it should be clear that there are competitive solutions to energy efficiency in electrified vending machines. Coca Cola has a patented Energy Management System that uses a motion detector, Pepsi has a unit developed with Carel that offers similar performance characteristics. And as stated, EnergyStar Tier II Machines have the technology built in.

Essentially, from an energy perspective, there are types of vending machines in the community:

1. Pre-2004 and Non-Energy Star Vending Machines
2. 2004 - 2007 EnergyStar Tier 1 Machines
3. 2007 and newer EnergyStar Tier 2 Machines

The major bottling companies, with energy efficiency commitments, have been proactive in adopting

new technology in vending machines. Generally, a machine from a major bottling company post 2004 is EnergyStar certified and post 2007 EnergyStar Tier 2 certified. The life cycle of a vending machine is over 10 years. In discussions with vendors, likely less than 5% of the inventory in HRM is EnergyStar Tier 2. The remainder split 60/40 between pre-2004 and post-2004 machines. Studies show that we can expect energy savings of up to 50% on Pre-2004 Machines and up to 40% on EnergyStar Tier 1 Machines.

Carbon Credits

Staff would like to set this project up so that Halifax Regional Municipality could potentially receive the Greenhouse Gas Carbon Credits. Upon certifying these credits, HRM could potentially resell them on a voluntary or mandatory market or retire them to meet GHG reduction commitments. According to international climate change reporting protocol, the vendors would not be able to collect credits if the change was legislative (which this will be). Staff will need to further investigate the feasibility of this opportunity. By claiming ownership of the credits at this time, HRM will be keeping this opportunity open. Staff will be returning to Regional Council in the future for deliberation on Policy and Strategy regarding Carbon Credits. This action simply potentially keeps this option open.

If HRM could certify and register these as carbon credits, at an estimated value of approximately 5,200 tonnes x \$20 per tonne = \$104,000, less certification costs.

Summary of Costs and Benefits

Stakeholder	Costs	Benefits
Vending Machine Licensee	<ul style="list-style-type: none">Initial Capital Costs	<ul style="list-style-type: none">Reduced Preventative Maintenance (see Attachment Five, Foster Miller Report)Meeting Corporate Sustainability CommitmentsEnhanced marketability to an increasingly environmentally conscious consumer
Facility Owner / Operator		<ul style="list-style-type: none">Reduced Operating / Energy Costs
Community		<ul style="list-style-type: none">Reduced GHG EmissionsCleaner AirReduced Light Pollution
Halifax Regional Municipality		<ul style="list-style-type: none">Potential GHG Carbon Credits

Primary Stakeholder Consultation

As directed by the Energy and Underground Services Committee, staff conducted preliminary primary stakeholder consultations on the proposed energy efficiency ByLaw revision. In addition, and coincidentally, the Chronicle Herald, upon learning of the internal Vending Miser project wrote an article in the December 20th edition in the Business Section (Attachment Six).

A summary of the consultation and findings is as follows:

1. Staff met with Regional Coca Cola Representatives on December 4th, 2009;
2. Staff met with Regional Pepsi Bottling Group Representatives on December 23, 2009;
3. Staff sent out letters to three other Vending Companies on December 29th;
4. Staff sent out letters (Attachment Seven) to local facility owners / operators and other identified interest groups in December;

Summary of learning:

Pepsi / Coca Cola

Both Pepsi and Coca Cola have very progressive corporate sustainability plans, with energy efficiency commitments. Both companies, globally, have previously identified energy efficiency solutions for pre-2007 vending machines: Coke with their Energy Management System and Pepsi with a Carel Energy Efficiency device. Staff will assess the performance characteristics of the proposed retrofits in comparison to the Vending Miser.

This initiative clearly aligns with their corporate values. Neither company appeared to have an imminent capital project to retrofit devices in Nova Scotia. This ByLaw Revision would propel such a capital project.

Local Facility Owners and Operators

Dalhousie University, Saint Mary's University, and Nova Scotia Community College Sustainability, Facility or Energy Staff respectively endorsed this initiative. All three facilities are aware of the technology and, in fact, Dalhousie specified the incorporation of Vending Misers with their recent Vending machine solicitation. Aliant has been investigating the products in their energy efficiency measures, and the Manager of Environmental Sustainability supports the initiative.

Several other organizations were approached for comment, but were not able to provide official correspondence on behalf of their organizations prior to the drafting of this report.

As a ByLaw Revision, this will require a Public Hearing. All stakeholders will have the ability to present their opinions, suggestions, support or dissent in that process.

Summarily, the response from consultations indicates that facility owners and operators support the initiative, environmental and energy interest groups support the initiative, and the two major bottlers (and licensees of Vending Machines): Pepsi and Coca Cola have Corporate Sustainability commitments that align with this initiative. Again, the implication of this bylaw revision is a one time capital cost increase to the Vending Machine Licensee and long term cost reduction to the facility owner / operator. The payback is approximately one year.

Learnings from Consultations

1. After learning that Vending Machines essentially fall into three groups:
 - a. Pre-2004
 - b. 2004 - 2007, Tier I Energy Star
 - c. Post 2007, Tier II Energy Star

The performance of the Post 2007, Tier II Energy Star vending machines meets the energy performance of units outfitted with the Vending Miser. The majority of machines in HRM are overwhelmingly Pre-2004 and some 2004-2007, Tier I models. These are the focus of the Energy Efficiency ByLaw revision. Energy Star Tier II machines have programmeable energy efficiency performance characteristics in them, and will be deemed as meeting the performance criteria desired.

2. Coke and Pepsi have their own Energy Efficiency devices they intend to use. This being the case, instead of HRM retailing the Vending Miser within the annual license fee, staff are recommending that purchase and sale of Vending Misers happen separately to license fee and external to HRM. This will maintain the annual license fee at \$55.

A retrofit of an Energy Efficiency Device costs between \$100 to \$300 per installation (lower cost for Coke / Pepsi solutions, higher costs for individual retrofits). Under this initiative, HRM will not be doing any retrofits nor supplying energy efficiency devices..

Vendors not installing an Energy Efficiency Device could face fines under ByLaw A200 from \$100 to \$2,000. The implication here is the inability to cost recover thru the license fee on increased enforcement of the ByLaw. SEMO staff have identified \$7,500 in D945 (SEMO Projects) to address this cost for 2010 / 2011 and 2011 / 2012.

BUDGET IMPLICATIONS

It is anticipated that this ByLaw change will result in additional enforcement costs in the vicinity of \$7,500 per year. These enforcement costs can be accommodated within the existing budget for Cost Centre D945 (SEMO Projects).

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of

22 January 2010

Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

Regional Council may wish to not proceed with the process for this energy efficiency revision.

ATTACHMENTS

- Attachment One, EUGS Report November 20, 2009
- Attachment Two, Vending Miser Product Information Sheet
- Attachment Three, Lessons Learned: Vending Machine Energy Costs
- Attachment Four, Draft Revised ByLaw
- Attachment Five, Foster Miller Report
- Attachment Six, Chronicle Herald Article
- Attachment Seven, Draft Stakeholder Letter

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: Richard MacLellan, Acting Manager, Sustainable Environment Management Office, 490-6056

Financial Approval by:



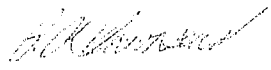
Cathie O'Toole, CGA, Director of Finance, 490-6308



PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Energy and Underground Services Committee
November 20, 2009

TO: Chair and Members of Energy and Underground Services Committee

SUBMITTED BY: 
Phillip Townsend, Director of Infrastructure and Asset Management

DATE: November 5, 2009

SUBJECT: Energy Efficiency Revision to ByLaw A-200, Respecting Automatic Machines

ORIGIN

This report originates from the Energy Efficiency Projects Update presentation to the Energy and Underground Services Committee on October 23, 2009.

RECOMMENDATION

It is recommended that the Energy and Underground Services Committee direct staff to draft a revised Bylaw A-200 (Bylaw Respecting Automatic Machines) that will require the incorporation of energy efficient technology, equivalent to the performance characteristics of the Vending Miser product, in Vending Machines licensed in Halifax Regional Municipality.

BACKGROUND

Halifax Regional Municipality has undertaken an energy efficiency project to install VendingMiser on the approximately 100 refrigerated vending machines on HRM property.

Each refrigerated vending machine creates approximately 4 tonnes of GHG emissions per year (roughly the equivalent of a car). Installation of the VendingMiser reduces GHG emissions by approximately 50% (ie 2 tonne reduction per year) in refrigerated vending machines and 30% in electrified non-refrigerated vending machines. The HRM project has demonstrated a 1 year pay back on the installation of these devices on refrigerated vending machines due to energy savings.

There are an estimated 2,000 refrigerated Vending Machines in Halifax Regional Municipality and another 1,000 electrified vending machines (ie for chips and chocolate bars). Jointly, these machines create approximately 12,000 tonnes of GHG per year. Incorporation of VendingMiser in these units would create an approximately 5,200 tonne GHG reduction.

For sake of context, HRM has spent approximately \$6 Million in past 5 years to reduce approximately 10,000 tonnes of GHG Emissions (and realized an over 18% ROI).

DISCUSSION

Halifax Regional Municipality administers ByLaw A-200, Respecting Automatic Machines. Under the premise that Vending Machines are in competition with establishments that are obligated to pay commercial property and business occupancy taxes, and the Municipality provides Police, Fire and other services to protect these machines, the Municipality has the authority under the Municipal Government Act to licence Vending Machines.

Some organizations, such as Dalhousie University, are beginning to require VendingMiser in agreements with Vendors putting Vending Machines on their properties. The intent of this ByLaw Revision is to mandate the capable technological change towards this energy savings opportunity, as change has not occurred quickly with status quo efforts. The product referenced has been available for over five years.

Staff is looking for endorsement from the Energy and Underground Services Committee to draft a ByLaw Revision to present to Regional Council. The general parameters of the Revision should include:

1. A grace period to 2011;
2. Enable equivalent or better technology than the VendingMiser. Some vending machine manufacturers are capable of installing within the machine on construction.

The exception to the ByLaw revision would be vending machines containing perishable goods (such

as milk or dairy products). Also, vending machines that are not electrified (ie. peanut and jellybean machines) would not be affected.

While staff are referencing a specific product for the context of presenting this idea to the Energy and Underground Services Committee, the ByLaw would be written in a manner that ensures and enhances competitive solutions to energy efficiency in refrigerated vending machines by outlining the expected performance characteristics. It would be anticipated that this legislative pressure would entice a manufactured solution in lieu of a retrofit or after purchase add-on.

An order of magnitude impact this project would have is:

Refrigerated Vending Machines (2,000) x \$500 per year on average to electrify = \$1 Million per year to electrify all the refrigerated vending machines in Halifax Regional Municipality. The VendingMiser, or equivalent technology, would reduce electricity expenses by \$500,000.

Aside from the energy efficiency and cost saving benefits of this revision, this revision would provide outcomes in reducing light pollution in Halifax Regional Municipality.

Potentially, staff would like to set this project up so that HRM could receive the GHG credits. Generally, the vendors would not be able to collect credits if the change was a legislative requirement (which this will be). Staff will need to further investigate the feasibility of this opportunity.

Anticipated delivery of this ByLaw Revision would be set up such that HRM would increase the annual vending license fee for automatic / refrigerated / electrified machines from \$55 to \$200 or \$250 (depending on the cost of VendingMiser which would be obtained through public tender, and less if we could reduce the acquisition cost or obtain leveraged funding to assist) for one time and provide the licensee with the product to install on their machine) unless they demonstrated that their machine already incorporated the technology (in which case the license fee would remain at \$55). Current licensing requirements include the provision to HRM of location of the machine to be licensed - this would enable HRM verification. In order to verify compliance, HRM would increase enforcement for year one and year two with a project that would cost approximately \$7,500 per year (essentially a seasonal project).

BUDGET IMPLICATIONS

A retrofit VendingMiser costs between \$200 and \$300 per installation. With an incentive to enhance the manufacture of new machines with the technology built in, the incremental cost could be reduced to negligible amounts.

Some vendors may not install a VendingMiser or incorporate the equivalent technology. Fines under this bylaw may range from \$100 to \$2,000.

Potentially, there could be a reduction in licensing revenue (\$55 per year, per machine) and an increase in tickets (\$100 to \$2,000 per offense). It is anticipated that additional enforcement costs could cost in the vicinity of \$7,500 in year one and two of this ByLaw. Funding for this additional cost would need to be identified and verified prior to the presentation of a bylaw to Regional Council, or would be incorporated into the increased license fee by \$3.75 per fee to ensure cost recapture.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

The Energy and Underground Services Committee may choose to direct staff not to draft a ByLaw revision requiring Energy Efficiency technology.

ATTACHMENTS

- Product Information: VendingMiser
- Existing ByLaw A-200

A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/cc.html> then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by : Richard MacLellan, Acting Manager, Sustainable Environment Management Office, 490-6056

Financial Approval by:



Cathie O'Toole, CGA, Director of Finance, 490-6308

VendingMiser®

For Refrigerated Vending Machines

Improve the profitability of your existing cold drink machines. Vending Miser® puts you on a cost-effective refresher course for energy savings and conservation.

VendingMiser cuts energy costs down to size. VendingMiser incorporates its innovative energy-saving technology into a small, plug-and-play powerhouse that installs in minutes either on the wall or on the vending machine. It's that easy.

With VendingMiser there's no need to have new machines to achieve maximum energy savings resulting in a reduction in operating costs and greenhouse gas emissions. When equipped with the VendingMiser, refrigerated beverage vending machines use less energy and are comparable in daily energy performance to new ENERGY STAR® qualified machines.

Power play

Compatible with all types of cold drink vending machines, the VendingMiser uses a Passive Infrared Sensor (PIR) to power down the machine when the area surrounding it is vacant. Then it monitors the room's temperature and automatically re-powers the cooling system at one- to three-hour intervals, independent of sales, to ensure that the product stays cold.

This Miser runs the bank

For a series of up to four machines, VendingMiser can use its embedded Sensor Repeater, which allows it to be controlled from the PIR sensor of any other Miser in the bank.

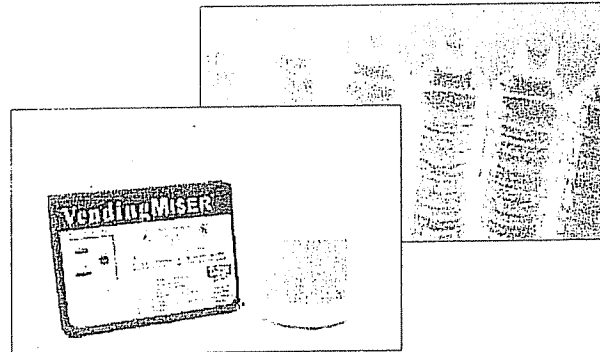
Refresher course

VendingMiser's microcontroller will never power down the machine while the compressor is running, eliminating compressor short-cycling. In addition, when the machine is powered up, the cooling cycle is allowed to finish before again powering down. This reduces the wear and tear on your machines, extending the lifespan and prolonging your profitability. Maintenance savings is generated through reduced running time of vendor components – estimated at \$40 - \$80 per year, per machine. The VendingMiser has been tested and accepted for use by major bottlers.

VendingMiser reduces energy consumption an average of 46%—typically \$150 per machine.



Schedule



Vending Miser offers...

- A quick, inexpensive solution to energy savings and conservation
- Longer machine lifespan
- Early return on investment
- Environmental benefits

VendingMiser can also control other cooled product vending machines, such as refrigerated candy machines.

VendingMiser Technical Specifications

Electrical Specifications

Input Voltage: 115 Volts
Input Frequency: 50/60 Hz
Maximum Load: 12 Amps (Steady-State)
Power Consumption: Less than 1 Watt (Standby)

Environmental Specifications

Operating Temp: -15°C to 75°C
Storage Temp: -40°C to 85°C
Relative Humidity: 95% Maximum (Non-Condensing)

Compatibility

Vending Machines: Any machine, except those containing perishable goods such as dairy products

Inactivity Timeouts

Occupancy Timeout: 15 minutes
Auto Re-power: One to three hours, dynamically adjusted, based on ambient temperature

Dimensions

Size: 4.5"W x 1.75"H x 3.25"D
Weight: 2.2 lbs (includes power cable)

Regulatory Approvals

Safety: UL/C-UL Listed
Information Technology Equipment (ITE) 9T79

- Other energy-saving products offered by USA Technologies include VM2IQ™, CoolerMiser™, SnackMiser™ and PlugMiser™.

Frequently Asked Questions

Will VendingMiser® keep my drinks cold?

Absolutely - VendingMiser® has been tested and accepted for use by both major bottlers

Is the VendingMiser® easy to install?

Yes! VendingMiser® is a simple external plug-and-play product. The VendingMiser® can be installed on the wall with simple hand tools or it can be attached to the vending machine without tools using the new Easy-Install system. The Easy-Install System allows quick installation in 5 minutes

Is VendingMiser® safe for all machines?

Yes! VendingMiser® is compatible with all types of cold drink vending machines. In fact, by reducing run time of the machines, VendingMiser® reduces maintenance costs

Has VendingMiser® been field tested?

Tens of thousands of VendingMisers® are operational in the field. Typical energy savings have been independently documented to be between 35% and 45%. Measurement and verification test results as well as testimonials are available on the website

Are there any locations not appropriate for VendingMiser®?

VendingMiser's® savings are generated as a result of location vacancy. Therefore, a machine in a location that is occupied 24-hours, 7 days a week will likely generate little savings. Our VM2IQ is more appropriate for this type of location and will typically save up to 35% energy use

Technical Specifications

ELECTRICAL SPECIFICATIONS

Input Voltage 115 Volts (230 Volts available)
Input Frequency 50/60 Hz
Maximum Load 12 Amps (Steady-State)
Power Consumption Less than 1 Watt (Standby)

ENVIRONMENTAL SPECIFICATIONS

Operating Temp -15°C to 75°C
Storage Temp -40°C to 85°C
Relative Humidity 95% Maximum (Non-Condensing)

COMPATIBILITY

Vending Machines Any machine, except those containing perishable goods such as dairy products

INACTIVITY TIMEOUTS

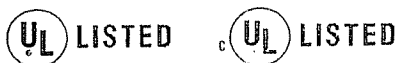
Occupancy Timeout 15 minutes
Auto Repower One to three hours, dynamically adjusted based on ambient temperature

DIMENSIONS

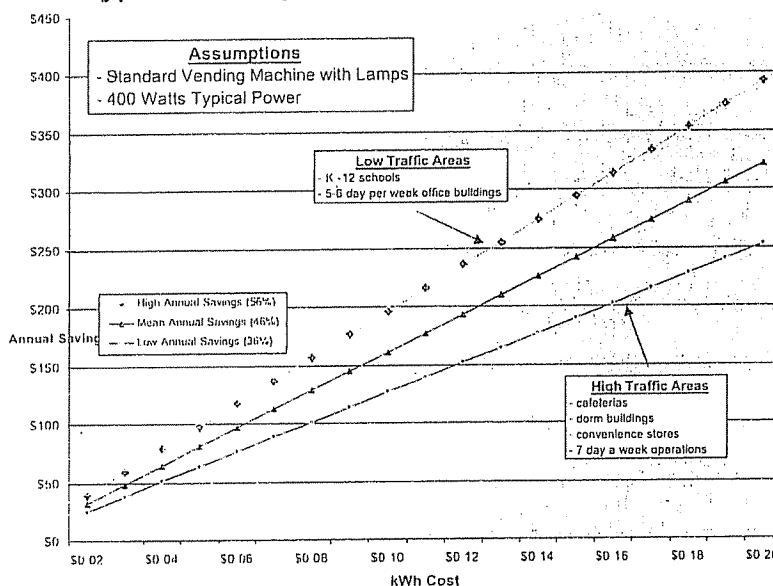
Size: 4.5"W x 1.75"H x 3.25"D
Weight: 2.2 lb (incl power cable)

REGULATORY APPROVALS

Safety UL/C-UL Listed
Information Technology Equipment (ITE) 9T79



Typical Saving Generated with VendingMiser®



VendingMiser® Products

VM150	VendingMiser® with PIR Sensor
VM151	VendingMiser® only
VM160	Weatherproof VendingMiser® with PIR Sensor
VM161	Weatherproof VendingMiser® only
VM170	Easy-Install VendingMiser® with PIR Sensor
VM171	Easy-Install VendingMiser® only
VM180	Weatherproof Easy-Install VendingMiser w/PIR sensor
VM181	Weatherproof Easy-Install VendingMiser only

Lessons Learned:

VENDING MACHINE ENERGY COSTS

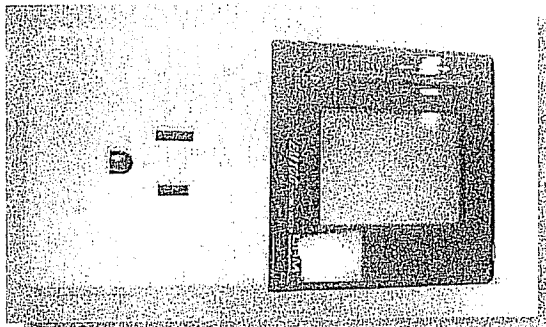
Using appliances uses energy and energy use has both financial and environmental impacts. With the rising focus on climate change, people are generally aware of compact fluorescent light bulbs and the energy consumption of regularly used appliances like computers, televisions, and refrigerators but what about other electrical devices? Less routine, obscure appliances, such as vending machines, have significant costs as well.

One vending consumes over \$500 worth of electricity per year, which is equal to approximately 4 tonnes of CO2 emissions.

These figures deserve attention.

THE STUDY:

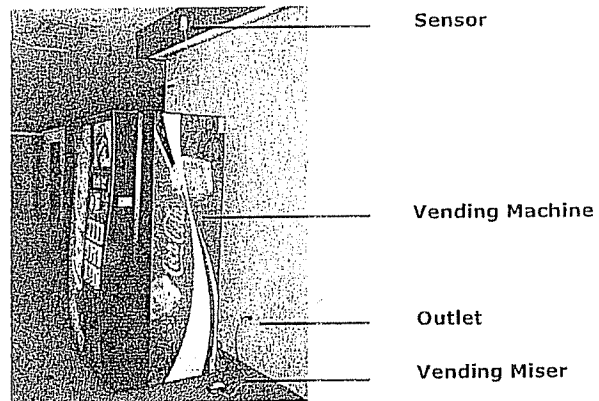
A case study was conducted to determine the energy consumed by a single Coca Cola vending machine. A typical machine was chosen in the HRM offices on the second floor of Alderney Gate. It was plugged into an energy meter connected to a power outlet. For one week, the meter measured regular electricity consumption in kWh, which was in turn used to calculate the hourly and annual electricity costs. According to the meter, the vending machine uses 0.52 kWh of electricity per hour. Running the machine for 24 hours uses 12.5 kWh of electricity. With the average cost of electricity at \$0.115 per kWh, the machine's energy cost is \$10.06 per week and over \$520 per year!



The energy meter used to determine electricity consumption (kWh).

HOW TO IMPROVE:

To test energy efficiency improvements and to reduce financial and environmental costs, a VendingMiser was installed on the same machine. VendingMiser technology uses an infrared sensor to power down the vending machine automatically if movement is not detected for 15 minutes, potentially resulting in significant savings during evenings and weekends when the area is unoccupied. When off, the lights are out and the compressor is stopped. To ensure that the product remains chilled, the VendingMiser monitors room conditions, re-powering approximately every two hours for the compressor to run a cooling cycle as required. VendingMisers cost \$250 each and the installation is almost as simple as plugging in an extension cord, taking less than 5 minutes.



VendingMiser attached to vending machine and motion sensor plugged into an electricity outlet.

THE RESULTS:

One week after installing the VendingMiser energy consumption was reduced by 45%. According to the meter, the machine's consumption decreased to 0.32 kWh per hour which is equal to 7.7 kWh of electricity per day.

With a VendingMiser, electricity costs were reduced by 45%, saving over \$230 per year, with a one-year payback!

Lessons Learned:

VENDING MACHINE ENERGY COSTS

THE COSTS:

Financially, records from January 2008 to December 2008 show that HRM received \$205.28 in revenue from the Alderney Gate machine. In other words, HRM lost about \$317.84 by operating the machine (total revenue subtracted from total electricity cost). The Vending Machine at Alderney Gate is by no means an exception. Revenue records from the other 48 vending machines in HRM operated facilities, such as community and recreation centres, rinks and offices, show that a large portion of machines do not generate sufficient income to balance the costs of their electricity demands. Of the 49 machines, only 14 generate over \$600 of revenue each year.

THE EMISSIONS:

In environmental terms, 49 vending machines generate half a ton of CO₂ a day! That means that vending machines in HRM facilities contribute 195 tonnes of CO₂ a year. For perspective, 195 tonnes is the equivalent of filling 39 average sized homes with CO₂. The installation of VendingMisers and removal of underutilized vending machines is a fairly simple way to decrease emissions and facilitate GHG reduction targets.

HRM AND BEYOND:

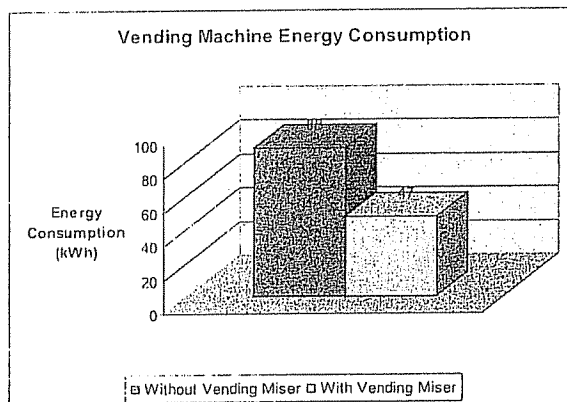
On a broader scale, there are over 1000 licensed beverage vending machines in the HRM. Assuming that the machines in HRM facilities are representative of those throughout the municipality, the thousand machines use approximately 4.5 million kWh of electricity per year, generating 4000 tons of CO₂. These figures are only for a small municipality. Can you imagine the costs across the country or North America level?

Study conducted by:

Claire Simmons, Energy Clerk

Jim Brown, Energy Auditor Project Assistant

HALIFAX



A comparison between the energy consumption of a vending machine connected to a VendingMiser and one that is not.

THE NEXT STEP:

A general knowledge of the costs associated with operating vending machines is lacking as is awareness surrounding VendingMisers. By installing VendingMisers, vendors can potentially cut their consumption by 30-50%, resulting in significant savings. Soft drink suppliers have a corporate responsibility to reduce the financial and environmental costs associated with their vending machines. With sustainability in mind, the companies should ensure that all existing vending machines are equipped with energy saving technology (such as a VendingMiser and require that all new installations meet ENERGY STAR's strict energy efficiency guidelines.

For information or to purchase VendingMiser technology visit:
www.MWreduction.com

or contact:

John Feher

519-627-3691

MEGAWatt Reduction Inc.

megawatt@ciaccess.com

If you are curious about the energy consumption of other appliances, energy meters are available to borrow from:
Halifax Public Libraries

**HALIFAX REGIONAL MUNICIPALITY
BYLAW A-200
RESPECTING AUTOMATIC MACHINES**

WHEREAS automatic machines are in competition with business establishments that are obligated to pay commercial property and business occupancy taxes;

AND WHEREAS the Halifax Regional Municipality believes that it should be compensated for providing police, fire and other services to protect these machines

THEREFORE the Council of the Halifax Regional Municipality under the authority vested in it by Section 172(1)(g) of the Municipal Government Act, enacts as follows:

Short Title

1. This Bylaw may be cited as Bylaw A-200, the "Automatic Machines Bylaw".

Interpretation

2. In this Bylaw

- (a) "amusement machine" means an automatic machine which does not dispense foods, wares, or services, but is used as a game, contest of chance or skill, or for amusement whether or not registering a score, including but not limited to electronic or mechanical game machines, electronic video games, skill ball, bowling game machines, horse-racing machines, driving games, target games, pinball machines, shuffleboards, mechanical rides and other similar machines or devices under whatever name they may be indicated, but does not include video gaming devices or video lotteries licensed by the Alcohol and Gaming Authority of the Province of Nova Scotia, nor those things, the use or keeping whereof is prohibited by law;
- (b) "automatic machine" means a mechanical or electronic device that is operated by the introduction of a coin, counter, slug, paper money, debit card, credit card or other such payment device or is designed or normally intended to be so operated and includes vending machines, and amusement machines but does not include automatic scales, telephone apparatus, gas or electric meters or postage stamp vending machines, or a machine that is licensed by the Province of Nova Scotia or an agency of the Province. Each mechanical or electronic device that is operated by its own payment mechanism is an individual automatic machine regardless of how many such devices are attached to the same stand.
- (c) "bulk machine" means an automatic machine which dispenses an unpackaged product such as but not limited to gum ball(s) and nut(s) which is operated by the introduction of a coin, slug, paper money, debit card, credit card or other such payment device;

- (d) "Council" means the Regional Council of the Municipality;
- (e) "Laundry machine" means a washing or drying machine which is operated by the introduction of a coin, slug, paper money, debit card, credit card or other such payment device;
- (f) "License Administrator" means the License Administrator appointed by the Chief Administrative Officer or his designate;
- (g) "License Inspector" means the License Inspector appointed by the Chief Administrative Officer or his designate;
- (h) "maintain" includes own, maintain, control or have in one's custody or possession or on one's premises for operation by other persons;
- (i) "Municipality" means the Halifax Regional Municipality;
- (j) "newspaper box" means a box for the purpose of vending newspapers which is operated by the introduction of a coin, slug, paper money, debit card, credit card or other such payment device;
- (k) "occupier" includes the person entitled to the possession of land, a leaseholder, and a person having or engaging for any way or purpose the use of the land, otherwise than as owner;
- (l) "owner" includes one or a combination of the following:
 - (a) a person who is entitled to possession as a tenant in fee simple, for life, or for a term of not less than twenty (20) years;
 - (b) a mortgagee in possession;
 - (c) where the mortgagee of land is not in possession, the person entitled to the equity of redemption;
 - (d) the person managing or receiving the rent of the land or premises, whether as his own account or as an agent or trustee of any other person; and
 - (e) a person who is assessed for the premises or the Assessment Roll of the Municipality as of the date of an alleged violation; and
- (m) "principal business" means a business carried on in a building or premises, the gross receipts of which represent seventy-five percent or more of the total receipts of all business carried on in the building or premises; and

- (n) "vending machine" means an automatic machine which dispenses food, beverages, goods, wares or services.

Automatic Machine License

3. No person shall maintain any automatic machine unless the person has obtained and is in possession of a valid licence from the municipality permitting the person to maintain such automatic machine.

License Exemption

4. A licence is under this by-law shall not be required for any automatic machine when:
- (1) the machine is situated in a building or premises where the principal business carried on in that building or premises is the sale of goods or merchandise or the dispensing of services through the operating of automatic machines, proof of which must be provided when requested by the municipality;
 - (2) the machine is a newspaper box that is licenced under By-law C-500, the Commerce and Vending on Municipal Lands By-law, or
 - (3) 100% of the proceeds of the machines are used to support:
 - a) a charitable organization registered under the *Income Tax Act (Canada)*.
 - b) a not for profit society incorporated under the *Societies Act of Nova Scotia*
 - c) a religious institution, or
 - d) a school.

Procedure For Obtaining License

5. (1) The application for a license pursuant to this By-law shall be made to the License Administrator on the prescribed form obtained from the Municipality and shall be signed by the applicant and accompanied by the appropriate license fee..

- (2) Every application for a license shall contain:

- (a) the name, mailing address and telephone number of the owner of the automatic machine;
- (b) the civic number, name of building and location within building where each automatic machine is to be located;
- (c) the name and address of the owner and occupier of the premises on which the automatic machines is to be located, and the specific location of the automatic machin within a commercial, office or institutional building;
- (d) number, type and serial number of the automatic machine sought to be licensed;

- (e) a copy of the encroachment license issued pursuant to By-law E-200, the Encroachment By-law, for any automatic machine proposed to be located on a street.
- (f) a declaration that the automatic machine is permitted on the premises on which the automatic machine is to be located pursuant to the provisions of the applicable Land Use By-law, and
- (g) any other information required by the License Administrator to evaluate the application under the terms of this By-law;
- (h) in order to obtain a charitable exemption pursuant to section 4(3), the applicant shall provide the following:
 - a) written confirmation that the machines are owned and operated by the charity
 - b) confirmation of charitable status
 - c) an income statement which provides confirmation that 100% of the proceeds of the machines is used in support of operating the charity.

(3) An application pursuant to subsection (2) may be for more than one machine and location

(4) The fee for said license shall be as prescribed from time to time in the License, Permits and Processing Fees Administrative Order.

(5) A license issued under this By-law shall display

- (a) the words "Licensed Automatic Machine";
- (b) the licensing year;
- (c) a description of the type of automatic machine to which the licenses applies;
- (d) a unique license number; and
- (e) the date the license was issued.

(6) The owner shall cause the license issued under this By-law to be affixed in a conspicuous place to the automatic machine to which it applies.

(7) The owner of a machine operating under a "charitable" licence shall ensure that the machine clearly indicates which charity it supports.

(8) A license issued under this By-law may be used for any automatic machine of the type to which the license applies and may be transferred from one automatic machine to another of the

same type on the same premises

(9) A license issued under this By-law shall expire on the 31st day of March following the date of issue

(10) It shall be an offence for any person to make any false statement in an application hereunder.

Notwithstanding any other provision of this By-Law, no license shall be issued unless any electrified automatic vending machine has installed thereon an energy conservation device which is designed to power down the machine when the immediate premises are unoccupied.

Administrator's Records

6. The License Administrator shall maintain a permanent record of each license issued and record the reports of violation thereon.

Replacement of License Sticker

7. The License Administrator, on payment of the fee of \$5.00, shall replace any license when a licensed owner files a declaration that the said sticker has been lost, stolen or destroyed.

License Transferability

8. (1) A license issued under this By-law shall not be transferable from one owner to another.

(2) A license issued under this By-law to an owner may be transferred from one automatic machine to another of the same type which is owned by the same owner and on the same premises, provided the owner has notified the License Administrator of the change in serial numbers.

(3) A license issued under this By-law in respect of any premises may be transferred to another premises, provided the owner of the machine has notified the License Administrator of the civic number, name of building and location of the new premises in which the automatic machine is to be located and the name and address of the owner and occupier of the new premises.

License Revocation

9. (1) A license issued under the provisions of this Bylaw may be revoked at any time by the License Inspector if he believes that any provisions of this Bylaw has been violated and upon the holder of the license being notified in writing of such revocation by the License Inspector, such holder shall forthwith cease to permit or suffer any automatic machine in respect of which the license was in force to be operated and such machine shall be immediately removed from the premises stated in the license.

(2) The License Inspector shall immediately notify the License Administrator of the revocation of a license.

Appeal

10. (1) Any person whose application for a license under this Bylaw has been refused by the License Administrator or revoked by the License Inspector may appeal to the Appeals Committee of Council.

(2) An appeal shall be in writing setting forth the grounds for appeal addressed to the Appeals Committee of Council, with a copy to the License Administrator or the License Inspector, as applicable, within fourteen (14) days after receipt by such person of written notice from the License Administrator or the License Inspector of refusal or revocation.

Operation of Unlicensed Machine

11. No person shall permit or suffer to be operated any automatic machine with respect to which there is no license in force under this By-law

Offenses and Penalties

12. (1) Any person who contravenes or fails to comply with any other provision of this By-law shall be guilty of an offense and liable to a penalty of not less than one hundred dollars (\$100.00) and not exceeding two thousand dollars (\$2,000.00) and in default of payment to imprisonment for a period not exceeding thirty (30) days.

(2) Every day during which such contravention or failure to comply continues shall be deemed to be a new offense.

(3) Where an automatic machine is maintained on any premises for which there is no license in force, the License Inspector may, after ten (10) days notice in writing by personal service or by regular or registered mail to the owner of the premises on which the machine is located, enter the premises and seize and/or remove the automatic machine and all expenses incurred by the License Inspector in seizing, removing and storing the machine may be recovered as a debt due from the owner of the premises from which the machine was removed and the License Inspector may sell the machine to recover the expenses of its seizure, removal, storage and sale and the such expenses shall be a first lien on the property of the owner from which the machine was removed.

Inspections

13. The License Inspector may enter upon any land or premises at a reasonable time without a warrant to determine whether an automatic machine is licensed and the provisions of subsection (3) of Section 503 of the Municipal Government Act shall apply to such inspection.

Repeal

14. Section 2 through 13 of Bylaw A-501 of the former City of Dartmouth as amended, Ordinance 151 of the former City of Halifax, Section 2(a) and (d) and Section 9, of By-law 15 of the former Halifax County Municipality and Sections 2(a) and 9 of the former Town of Bedford Bylaw

15100 are hereby repealed.

Done and passed this 2nd day of March, 2004

Mayor

Acting Municipal Clerk

I, Jan Gibson, Acting Municipal Clerk of the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Halifax Regional Council held on March 2, 2004

Jan Gibson, Acting Municipal Clerk

Notice of Motion:	February 3, 2004
First Reading:	February 10, 2004
"Notice of Public Hearing" Publication:	February 14, 2004
Second Reading:	March 2, 2004
Approval of Service Nova Scotia and Municipal Affairs:	N/A
Effective Date:	March 6, 2004

Amendment # 1	
Notice of Motion:	August 8, 2006
First Reading:	September 5,,2006
Notice of Public Hearing - Publication:	September 16, 2006
Second Reading:	October 3, 2006
Approval of Service Nova Scotia and Municipal Relations:	N/A
Effective Date:	October 14, 2006

Report BAY-01197

VENDING MACHINE SERVICE CALL REDUCTION USING THE VENDINGMISER

Prepared for:

Mr. David J. Schanin
President
Bayview Technology Group, Inc.
1091 Industrial Rd., Suite 106
San Carlos, CA 94070

Prepared by:

Foster-Miller, Inc.
195 Bear Hill Rd
Waltham, MA 02451-1003

February 18, 2002

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1. INTRODUCTION

The VendingMiser is designed to reduce the cost of ownership of vending machines. The compressor life is extended by reduction of the total number of ON-OFF cycles and varies based on vending machine design and manufacturer. Other components, such as lights, fans, and electronics will exhibit extended life by the reduction of the number of hours of operation. The frequency of preventative maintenance can also be reduced.

2. SOURCES OF INFORMATION

Information shown in this report was gathered from manufacturer's testing, published specifications, industry standards, in-house testing, interviews with service managers, currently advertised market prices and labor rates.

3. COMPRESSOR CYCLE RATES

Normal refrigeration cycle rate data varied widely from one source to another. Foster-Miller in-house testing shows an average of less than 2/hr for most full machines in a 90°F ambient environment. Other reports indicate this number may be 5/hr or more. This study uses a cycle rate of 3/hr as a "good industry average". In addition, a cycle rate of 5/hr is also considered for less-than-full vending machines.

4. CLASSES OF VENDINGMISER INSTALLATIONS

This study considers five typical cold beverage vending machine installation locations. These encompass a wide range of VendingMiser based cost savings due to periodic and anticipated vacancies. All locations are indoors and in controlled environment conditions (schools, office buildings, shopping centers, etc.). Outdoor locations are not included, as it is difficult to predict hours of inactivity, and in general, account for a minority of the machine locations. Also not included are 3-shift factories or 24/7 locations, which are occupied around the clock (e.g. emergency waiting room areas of hospitals), as there would probably be little or no benefit realized from the VendingMiser. The installations considered in this study are:

LOCATION	HOURS OF OPERATION
I. OFFICE-1 or Elementary School	8am – 6pm, Monday-Friday
II. OFFICE-2 or High School	7am – 7pm, Monday-Friday
III. STORE-1	7am – 10pm, Monday-Saturday
IV. STORE-2	7am – 10pm, Monday-Saturday 9am – 5pm, Sunday
V. 2-SHIFT FACTORY	16 hours per day, Monday-Saturday

Table 1 shows, for each installation, the number of hours of normal operation, and the number of hours during which the VendingMiser takes control. For cycle-based life calculations, the table computes the extension factor. This is the factor by which the life is extended due to reduction in the cycle rate. The time extension rate is also shown and is due to the reduction in running time.

Table 1. Calculation of Cycle and Time Extension Factors

	LOCATION				
	I	II	III	IV	V
hrs/wk - normal operation	50	60	90	98	96
hrs/wk - VM	118	108	78	70	72
# of cycles @ 5/hr wo/VM	840	840	840	840	840
# of cycles @ 5/hr w/VM	309	354	489	525	516
Cycle Factor @ 5/hr	2.72	2.37	1.72	1.60	1.63
# of cycles @ 3/hr wo/VM	504	504	504	504	504
# of cycles @ 3/hr w/VM	209	234	309	329	324
Cycle Factor @ 3/hr	2.41	2.15	1.63	1.53	1.56
Running Time Factor	2.11	1.93	1.53	1.45	1.47

5. SERVICE CALLS

When a service call is requested there are a variety of true causes for the call, however most involve repairing or replacing the compressor "deck". This deck is mounted on rails located at the bottom rear of the machine and includes the compressor, evaporator coils and condenser fan. Other potential "refrigeration calls" may involve the replacement of the thermostat, motherboard electronics, lights, starter and associated ballast. Although not impacted by the VendingMiser directly, leaky door seals and vandalized or missing can door flaps also generate service calls.

For the serviced components listed below, an average labor rate of \$35 is assumed, although actual labor rates vary considerably (based on union and non-union bottlers and franchisees) ranging from \$17 to \$60 per hour. The average MTBF values are approximate.

The total cost of replacement includes travel time to the machine (average = 0.75 hr), and the time to make the repair at the assumed labor rate, in addition to the cost of the part.

For the compressor, the life extension and savings were calculated for a machine cycling at 3/hr and separately for a machine cycling at 5/hr. The difference between these in actual dollars saved per year is small as shown in Table 2.

Overall, the key factors affecting maintenance savings are the price of the compressor and the labor rates then; secondarily, the other smaller cost components. Tables 2 to 8 below show cost elements. The prices are averages, and an average labor rate of \$35/hr is assumed.

Table 2. Compressor Savings

COMPRESSOR					
MTBF of compressor (yr.)	6 ¹				
Average life of compressor (cycles) @ 3/hr	158,000				
Average cost to replace compressor failure, including new compressor, refrigerant, etc.	\$150				
Average travel time to machine (hr)	0.75 ²				
Average time to repair failed compressor (hr)	0.5 ³				
Average cost to replace compressor	\$193.75				
Average per year cost of compressor	\$32.29				

OPERATION WITH VENDINGMISER	LOCATION				
	I	II	III	IV	V
Average Life of Compressor w/VM (yr.) @ 5/hr	16.31	14.24	10.31	9.60	9.77
Per Year Compressor Cost w/VM (5/hr)	\$11.85	\$13.57	\$18.75	\$20.13	\$19.78
Per Year Compressor Savings w/VM (5/hr)	\$20.44	\$18.72	\$13.54	\$12.16	\$12.51
Average Life of Compressor w/VM (yr.) @ 3/hr	14.47	12.92	9.79	9.19	9.33
Per Year Compressor Cost w/VM (3/hr)	\$13.39	\$15.00	\$19.79	\$21.08	\$20.77
Per Year Compressor Savings w/VM (3/hr)	\$18.90	\$17.29	\$12.50	\$11.21	\$11.52

¹ Major compressor manufacturers do not publish MTBF figures for their products, as it is high dependent on applications and environmental conditions. The figure of 6 yr. was established from interviews with local vending machine servicemen.

² Interviews with local vending machine servicemen.

³ Service manager, major Las Vegas bottler.

Table 3. Evaporator Fan Savings

EVAPORATOR FAN							
Average MTBF (years)	6 ⁴						
Average cost to replace failure	\$25						
Average travel time to machine	0.75						
Average time to repair failed evaporator fan	0.5						
Average cost to replace evaporator fan	\$68.75						
Average per year cost of evaporator fan	\$11.46						
		LOCATION					
OPERATION WITH VENDINGMISER		I	II	III	IV	V	
Average Life of Evaporator Fan w/VM (yrs)		12.68	11.59	9.21	8.73	8.84	
Per Year Evaporator Fan Cost w/VM		\$5.42	\$5.93	\$7.47	\$7.88	\$7.78	
Per Year Evaporator Fan Savings w/VM		\$6.04	\$5.52	\$3.99	\$3.58	\$3.68	

Table 4. Condenser Fan Savings

CONDENSER FAN							
Average MTBF (years)	6 ⁴						
Average cost to replace failure	\$23						
Average travel time to machine	0.75						
Average time to repair failed condenser fan	0.5						
Average cost to replace condenser fan	\$66.50						
Average per year cost of condenser fan	\$11.08						
		LOCATION					
OPERATION WITH VENDINGMISER		I	II	III	IV	V	
Average Life of Condenser Fan w/VM (years)		12.68	11.59	9.21	8.73	8.84	
Per Year Condenser Fan Cost w/VM		\$5.24	\$5.74	\$7.22	\$7.62	\$7.52	
Per Year Condenser Fan Savings w/VM		\$5.84	\$5.34	\$3.86	\$3.46	\$3.56	

⁴ Average from manufacturers' data

Table 5. Thermostat Savings

THERMOSTAT (electronic)							
Average MTBF (years)	8 ⁵						
Average cost to replace failure	\$23						
Average travel time to machine	0.75						
Average time to repair failed thermostat	0.5						
Average cost to replace thermostat	\$66.75						
Average per year cost of thermostat	\$8.34						
		LOCATION					
OPERATION WITH VENDINGMISER		I	II	III	IV	V	
Average Life of Thermostat w/VM (years)		16.91	15.45	12.27	11.64	11.79	
Per Year Thermostat Cost w/VM		\$3.95	\$4.32	\$5.44	\$5.74	\$5.66	
Per Year Thermostat Savings w/VM		\$4.40	\$4.02	\$2.91	\$2.61	\$2.68	

Table 6. Lamp Savings Using Magnetic Ballast

LIGHTS (T-12) - MAGNETIC BALLAST							
Average MTBF (hrs) based on continuous usage	12000						
Average life (hrs) based on 2hrs/start	10204						
Average cost to replace failure	\$6						
Average travel time to machine	0.75						
Average time to repair failed lights	0.3						
Average cost to replace lights	\$42.75						
Average per year cost of lights	\$31.21						
		LOCATION					
OPERATION W/ VENDINGMISER		I	II	III	IV	V	
Average Life of Lights w/VM (hrs)		21,563.17	19,704.28	15,655.45	14,842.18	15,037.47	
Per Year Lights Cost w/VM		\$17.37	\$19.01	\$23.92	\$25.23	\$24.90	
Per Year Lights Savings w/VM		\$13.84	\$12.20	\$7.29	\$5.98	\$6.30	

⁵ From interviews with local vending machine servicemen.

Table 7. Lamp Savings Using Electronic Ballast

LIGHTS (T-8) - ELECTRONIC BALLAST	
Average MTBF (hrs) based on continuous usage	12000
Average cost to replace failure	\$6
Average travel time to machine	0.75
Average time to repair failed lights	0.3
Average cost to replace lights	\$42.75
Average per year cost of lights	\$31.21

OPERATION W/ VENDINGMISER	LOCATION				
	I	II	III	IV	V
Average Life of Lights w/VM (hrs)	25,358.49	23,172.41	18,410.96	17,454.55	17,684.21
Per Year Lights Cost w/VM	\$14.77	\$16.16	\$20.34	\$21.46	\$21.18
Per Year Lights Savings w/VM	\$16.44	\$15.05	\$10.87	\$9.75	\$10.03

Table 8. Electronic Controls Savings

ELECTRONIC CONTROLS	
Average MTBF (yrs)	8
Average cost to replace failure	\$100
Average travel time to machine	0.75
Average time to repair failed electronic controls	0.5
Average cost to replace electronic controls	\$143.75
Average per year cost of electronic controls	\$17.97

OPERATION WITH VENDINGMISER	LOCATION				
	I	II	III	IV	V
Average Life of Electronic Controls w/VM (years)	16.91	15.45	12.27	11.64	11.79
Per Year Electronic Controls w/VM	\$8.50	\$9.31	\$11.71	\$12.35	\$12.19
Per Year Electronic Controls Savings w/VM	\$9.47	\$8.66	\$6.26	\$5.62	\$5.78

6. IMPACT OF PREVENTATIVE MAINTENANCE (PM'S)

Preventative maintenance is a powerful tool to reduce both service calls and improve customer service and positive visibility at accounts, according to the Service Manager at a major Las Vegas, Nevada bottler. They have adopted and championed an annual preventative maintenance 9-step checklist that takes 20-30 minutes to complete. This has resulted in fewer service calls primarily because lights that are getting black around the top are replaced before failure which improves the life of the starter, magnetic and electronic ballasts and has reduced the "888" display on the electronic motherboards that coincides with flickering light bulbs. Although difficult to quantify directly, by removing the lint and dust build-up on the evaporator coils the compressor works more efficiently, lasts longer and reduces service calls.

Installation of the VendingMiser should reduce the frequency of PM because the vending machines are running less often, the lights last longer, they accumulate less dust and lint and work more efficiently. Logically, given the VendingMiser's 46% average savings on off time could reduce PM correspondingly as shown in Table 9.

Table 9. VM Savings to PM Program

ANNUAL SAVINGS FOR PREVENTIVE MAINTENANCE					
PM cost - labor time (hr)	0.5				
PM cost - travel time to machine	0.75				
PM cost - dedicated trip	43.75				
PM cost - w/o travel time	17.5				
Average annual PM cost	30.625				

OPERATION W/ VENDINGMISER	LOCATION				
	I	II	III	IV	V
Annual PM Savings w/VM (3/hr)	\$17.92	\$16.38	\$11.84	\$10.61	\$10.99
Annual PM Savings w/VM (5/hr)	\$19.37	\$17.70	\$12.82	\$11.48	\$11.84

7. LABOR RATES

In these considerations, a median labor rate of \$35/hr was assumed. This obviously varies in different locales and for different subcontractors. Actual labor rates are found to vary in the range of \$17 - \$60/hr. The following graph in Figure 1 shows the annual savings with VendingMiser over the range of labor rates. The five curves represent the five installation types being considered in this report.

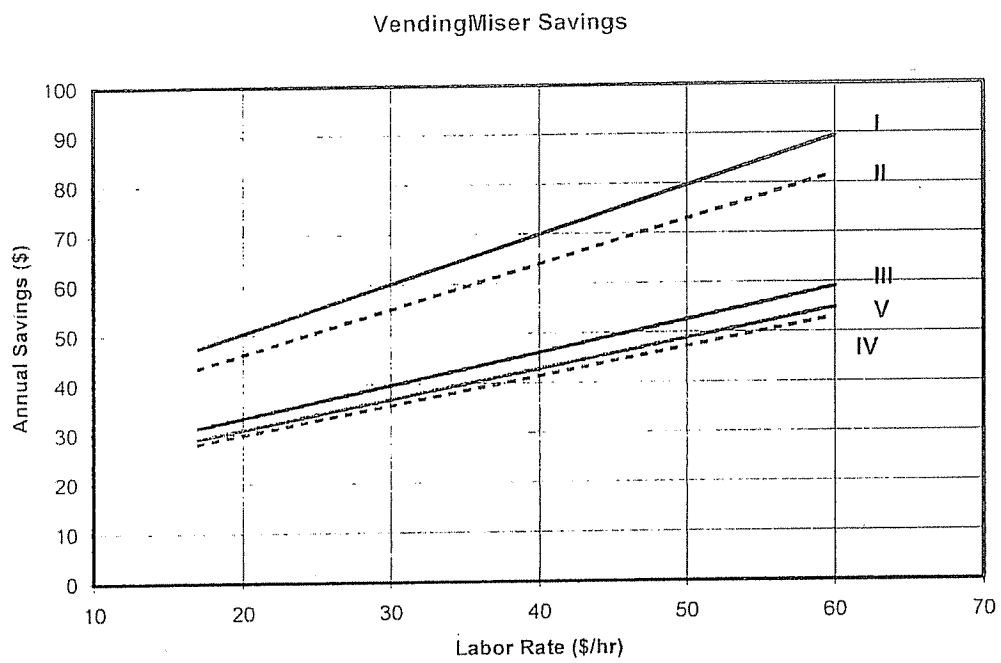


Figure 1. VendingMiser Savings

8. CONCLUSION

Our analysis indicates that the VendingMiser should reduce vending machine operating costs by decreasing the frequency and direct expense of component failures and thus, the number of service calls. Table 10 lists the expected total average annual savings from service call reduction in each of the installations. The results are shown for machines using electronic ballasts (new machines) and for magnetic ballasts (older machines retrofitted with VM). Separate savings numbers are listed for machines that cycle at 3/hr and at 5/hr, although, as seen in the table, the difference is small. Actual savings may fall somewhere in between.

Table 10. Annual Savings From Reductions in Service Calls

ANNUAL SAVINGS WITH VENDINGMISER	LOCATION				
	I	II	III	IV	V
Annual compressor savings w/VM (5/hr)	\$24.36	\$22.30	\$16.10	\$14.45	\$14.87
Annual compressor savings w/VM (3/hr)	\$22.56	\$20.65	\$14.91	\$13.38	\$13.76
Annual evaporator fan savings w/VM	\$6.04	\$5.52	\$3.99	\$3.58	\$3.68
Annual condenser fan savings w/VM	\$5.84	\$5.34	\$3.86	\$3.46	\$3.56
Annual thermostat savings w/VM	\$4.40	\$4.02	\$2.91	\$2.61	\$2.68
Annual lights savings w/VM (M-ballast)	\$13.84	\$12.20	\$7.29	\$5.98	\$6.30
Annual lights savings w/VM (E-ballast)	\$16.44	\$15.05	\$10.87	\$9.75	\$10.03
Annual electronic controls savings w/VM	\$9.47	\$8.66	\$6.26	\$5.62	\$5.78
Annual reduction in PM requirement (3/hr)	\$17.92	\$16.38	\$11.84	\$10.61	\$10.99
Annual reduction in PM requirement (5/hr)	\$19.37	\$17.70	\$12.82	\$11.48	\$11.84
Total Annual Savings (3/hr & M-ballast)	\$80.07	\$72.77	\$51.06	\$45.24	\$46.75
Total Annual Savings (3/hr & E-ballast)	\$82.67	\$75.62	\$54.64	\$49.01	\$50.48
Total Annual Savings (5/hr & M-ballast)	\$83.32	\$75.74	\$53.23	\$47.18	\$48.71
Total Annual Savings (5/hr & E-ballast)	\$85.92	\$78.59	\$56.81	\$50.95	\$52.44

As expected, installation in locations which are vacant for longer periods (as in installations 1 & 2) exhibit a higher annual savings than those in installations 4 & 5, due to the reduction in the number of cycles and the total running time.

The numbers shown in Table 10 are a significant fraction of the retail cost of the VendingMiser, and do not reflect the additional energy savings delivered by the VendingMiser.

How to cool vending costs

HRM looking at bylaw to require device that makes machines more energy efficient

By JUDY MYRDIEN Business Reporter

JUST A FEW FEET away from the city's planning offices on the second floor of Alderney Gate in Dartmouth is a pop machine that is losing money because of electricity costs

Running all day, every day, a vending machine uses a lot of energy.

It takes about \$500 worth of electricity a year to operate a vending machine, and the Alderney Gate machine sold about \$205 in sodas last year. In other words, Halifax Regional Municipality lost about \$317 by operating the machine, according to financial records.

"I'm betting that most people that have these machines plugged into their buildings don't realize that they're costing them over \$500 a year to provide that service," said Richard MacLellan, manager of HRM's sustainable environment management office, on Friday.

Of the 49 machines in HRM buildings, ferry terminals and recreation centres, only 14 generate over \$600 of revenue each year, said Mr. MacLellan.

Last year, HRM conducted a test on 30 of its 49 vending machines. The machines were installed with a new energy control device called Vending Miser.

The \$250 device and control box shuts down the machine when nobody is near, saving energy without altering the temperature or quality of the refreshments. This saves between 40 and 50 per cent of the electricity to run the unit, said Mr. MacLellan.

"With escalating energy costs, it's responsible to look at energy efficiency projects both through an environmental and financial lens," he said.

"It saves everybody money and it helps meet community greenhouse gas reduction efforts."

He said there are an estimated 2,000 refrigerated vending machines in HRM, and another 1,000 electrified machines for chips and chocolate bars.

"What we're looking at doing (is) actually pushing it out as a bylaw revision so all pop machines, not just the 49 we are paying the electricity for, but the 3,000 machines across the municipality, have these units on them," he said.

The potential electricity savings would be about \$500,000 a year and a reduction in pollution, he said.

HRM is proposing when a company comes in to renew its annual vending licence, the fee will increase from \$55 to the range of \$200 to \$250, depending on the cost of the Vending Miser, for a one-time charge that includes the device.

"Hopefully, there won't be any need to fine people," he said.

Fines under this bylaw may range from \$100 to \$2,000.

Mr. MacLellan said he expects support from prominent vending companies like Pepsi and Coca-Cola, but there is a hitch.

"The tickly thing with the bylaw revision is obviously the cost to buy the units would be to the people who put the vending machines in," he said.

(jmyrden@herald.ca)



30 November 2009

Dear

Re: Vending Machine Energy Efficiency ByLaw Revision

The Energy and Undergrounds Services Committee of HRM has instructed staff to engage with primary stakeholders for comments, supportive and contrary, to enable a deliberation on a potential revision to ByLaw A200, Respecting Vending Machines.

During the past year, the Energy Manager of Halifax Regional Municipality has performed a project that retrofits an energy saving device to refrigerated vending machines on HRM corporate properties. The units, called a VendingMiser (product information attached), were fitted to the machines. The project proved that the devices enable an approximately 50% energy reduction which provided a one year payback on the purchase of the device (\$250).

Following this overwhelmingly successful project, staff explored the potential and opportunities to mainstream this initiative throughout the community.

Halifax Regional Municipality administers ByLaw A200 for the annual license of vending machines. There are approximately 2,000 refrigerated vending machines (pop machines) and another 1,000 non-refrigerated but electrified vending machines (chocolate bar / chip machines, for example). The annual license fee is \$55.

Using the results proven in the HRM study, the potential of a community wide adoption of the technology would yield \$500,000 in electricity savings and reduction of 5,000 tonnes of greenhouse gas emissions.

In order to mainstream the available technology, that is demonstrably a sound economic and environmental action, the municipality is proposing an amendment to ByLaw A200 such that summarily: All electrified vending machines will be required to install an energy saving device, comparable in performance to the Vending Miser, as a condition of the annual license. In order to enable this technological advancement, vendors will be either able to purchase themselves (in which case HRM shall verify) or include the provision of a VendingMiser with the license fee (at a one time increase to cover the cost of the equipment).

In preparation of an eventual report to Regional Council for this proposed ByLaw Revision, staff is seeking comments, supportive and contrary to the action.

Following receipt, I shall provide a summary and copies of all comments received for the January Energy and Underground Services Committee Meeting. With these comments, the committee will deliberate on a recommendation to proceed to Regional Council with a revised ByLaw proposal.

I would very much appreciate receiving your comments on this initiative.

Thank you.

Richard MacLellan
Acting Manager, Sustainable Environment Management Office

Sustainable Environment Management Office

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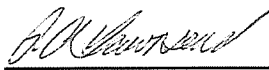




PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Energy and Underground Services Committee
November 20, 2009

TO: Chair and Members of Energy and Underground Services Committee

SUBMITTED BY: 
Phillip Townsend, Director of Infrastructure and Asset Management

DATE: November 5, 2009

SUBJECT: **Energy Efficiency Revision to ByLaw A-200, Respecting Automatic
Machines**

ORIGIN

This report originates from the Energy Efficiency Projects Update presentation to the Energy and Underground Services Committee on October 23, 2009.

RECOMMENDATION

It is recommended that the Energy and Underground Services Committee direct staff to draft a revised Bylaw A-200 (Bylaw Respecting Automatic Machines) that will require the incorporation of energy efficient technology, equivalent to the performance characteristics of the VendingMiser product, in Vending Machines licensed in Halifax Regional Municipality.

BACKGROUND

Halifax Regional Municipality has undertaken an energy efficiency project to install VendingMiser on the approximately 100 refrigerated vending machines on HRM property.

Each refrigerated vending machine creates approximately 4 tonnes of GHG emissions per year (roughly the equivalent of a car). Installation of the VendingMiser reduces GHG emissions by approximately 50% (ie 2 tonne reduction per year) in refrigerated vending machines and 30% in electrified non-refrigerated vending machines. The HRM project has demonstrated a 1 year pay back on the installation of these devices on refrigerated vending machines due to energy savings.

There are an estimated 2,000 refrigerated Vending Machines in Halifax Regional Municipality and another 1,000 electrified vending machines (ie for chips and chocolate bars). Jointly, these machines create approximately 12,000 tonnes of GHG per year. Incorporation of VendingMiser in these units would create an approximately 5,200 tonne GHG reduction.

For sake of context, HRM has spent approximately \$6 Million in past 5 years to reduce approximately 10,000 tonnes of GHG Emissions (and realized an over 18% ROI).

DISCUSSION

Halifax Regional Municipality administers ByLaw A-200, Respecting Automatic Machines. Under the premise that Vending Machines are in competition with establishments that are obligated to pay commercial property and business occupancy taxes, and the Municipality provides Police, Fire and other services to protect these machines, the Municipality has the authority under the Municipal Government Act to licence Vending Machines.

Some organizations, such as Dalhousie University, are beginning to require VendingMiser in agreements with Vendors putting Vending Machines on their properties. The intent of this ByLaw Revision is to mandate the capable technological change towards this energy savings opportunity, as change has not occurred quickly with status quo efforts. The product referenced has been available for over five years.

Staff is looking for endorsement from the Energy and Underground Services Committee to draft a ByLaw Revision to present to Regional Council. The general parameters of the Revision should include:

1. A grace period to 2011;
2. Enable equivalent or better technology than the VendingMiser. Some vending machine manufacturers are capable of installing within the machine on construction.

The exception to the ByLaw revision would be vending machines containing perishable goods (such as milk or dairy products). Also, vending machines that are not electrified (ie. peanut and jellybean machines) would not be affected.

While staff are referencing a specific product for the context of presenting this idea to the Energy and Underground Services Committee, the ByLaw would be written in a manner that ensures and enhances competitive solutions to energy efficiency in refrigerated vending machines by outlining the expected performance characteristics. It would be anticipated that this legislative pressure would entice a manufactured solution in lieu of a retrofit or after purchase add-on.

An order of magnitude impact this project would have is:

Refrigerated Vending Machines (2,000) x \$500 per year on average to electrify = \$1 Million per year to electrify all the refrigerated vending machines in Halifax Regional Municipality. The VendingMiser, or equivalent technology, would reduce electricity expenses by \$500,000.

Aside from the energy efficiency and cost saving benefits of this revision, this revision would provide outcomes in reducing light pollution in Halifax Regional Municipality.

Potentially, staff would like to set this project up so that HRM could receive the GHG credits. Generally, the vendors would not be able to collect credits if the change was a legislative requirement (which this will be). Staff will need to further investigate the feasibility of this opportunity.

Anticipated delivery of this ByLaw Revision would be set up such that HRM would increase the annual vending license fee for automatic / refrigerated / electrified machines from \$55 to \$200 or \$250 (depending on the cost of VendingMiser which would be obtained through public tender, and less if we could reduce the acquisition cost or obtain leveraged funding to assist) for one time and provide the licensee with the product to install on their machine) unless they demonstrated that their machine already incorporated the technology (in which case the license fee would remain at \$55). Current licensing requirements include the provision to HRM of location of the machine to be licensed - this would enable HRM verification. In order to verify compliance, HRM would increase enforcement for year one and year two with a project that would cost approximately \$7,500 per year (essentially a seasonal project).

BUDGET IMPLICATIONS

A retrofit VendingMiser costs between \$200 and \$300 per installation. With an incentive to enhance the manufacture of new machines with the technology built in, the incremental cost could be reduced to negligible amounts.

Some vendors may not install a VendingMiser or incorporate the equivalent technology. Fines under this bylaw may range from \$100 to \$2,000.

Potentially, there could be a reduction in licensing revenue (\$55 per year, per machine) and an increase in tickets (\$100 to \$2,000 per offense). It is anticipated that additional enforcement costs could cost in the vicinity of \$7,500 in year one and two of this ByLaw. Funding for this additional cost would need to be identified and verified prior to the presentation of a bylaw to Regional Council, or would be incorporated into the increased license fee by \$3.75 per fee to ensure cost recapture.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

The Energy and Underground Services Committee may choose to direct staff not to draft a ByLaw revision requiring Energy Efficiency technology.

ATTACHMENTS

- Product Information: VendingMiser
- Existing ByLaw A-200

A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/cc.html> then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by : Richard MacLellan, Acting Manager, Sustainable Environment Management Office, 490-6056

Financial Approval by:



Cathie O'Toole, CGA, Director of Finance, 490-6308

VendingMiser®

ENERGY MANAGEMENT SYSTEM For Refrigerated Vending Machines

Improve the profitability of your existing cold drink machines. Vending Miser® puts you on a cost-effective refresher course for energy savings and conservation.

VendingMiser cuts energy costs down to size. VendingMiser incorporates its innovative energy-saving technology into a small, plug-and-play powerhouse that installs in minutes either on the wall or on the vending machine. It's that easy.

With VendingMiser there's no need to have new machines to achieve maximum energy savings resulting in a reduction in operating costs and greenhouse gas emissions. When equipped with the VendingMiser, refrigerated beverage vending machines use less energy and are comparable in daily energy performance to new ENERGY STAR® qualified machines.

Power play

Compatible with all types of cold drink vending machines, the VendingMiser uses a Passive Infrared Sensor (PIR) to power down the machine when the area surrounding it is vacant. Then it monitors the room's temperature and automatically re-powers the cooling system at one- to three-hour intervals, independent of sales, to ensure that the product stays cold.

This Miser runs the bank

For a series of up to four machines, VendingMiser can use its embedded Sensor Repeater, which allows it to be controlled from the PIR sensor of any other Miser in the bank.

Refresher course

VendingMiser's microcontroller will never power down the machine while the compressor is running, eliminating compressor short-cycling. In addition, when the machine is powered up, the cooling cycle is allowed to finish before again powering down. This reduces the wear and tear on your machines, extending the lifespan and prolonging your profitability. Maintenance savings is generated through reduced running time of vendor components – estimated at \$40 - \$80 per year, per machine. The VendingMiser has been tested and accepted for use by major bottlers.

VendingMiser reduces energy consumption an average of 46%—typically \$150 per machine.



Vending Miser offers...

- A quick, inexpensive solution to energy savings and conservation
- Longer machine lifespan
- Early return on investment
- Environmental benefits

VendingMiser can also control other cooled product vending machines, such as refrigerated candy machines.

VendingMiser Technical Specifications

Electrical Specifications

Input Voltage: 115 Volts
Input Frequency: 50/60 Hz
Maximum Load: 12 Amps (Steady-State)
Power Consumption: Less than 1 Watt (Standby)

Environmental Specifications

Operating Temp: -15°C to 75°C
Storage Temp: -40°C to 85°C
Relative Humidity: 95% Maximum (Non-Condensing)

Compatibility

Vending Machines: Any machine, except those containing perishable goods such as dairy products

Inactivity Timeouts

Occupancy Timeout: 15 minutes
Auto Re-power: One to three hours, dynamically adjusted, based on ambient temperature

Dimensions

Size: 4.5"W x 1.75"H x 3.25"D
Weight: 2.2 lbs. (includes power cable)

Regulatory Approvals

Safety: UL/C-UL Listed
Information Technology Equipment (ITE) 9T79

Other energy-saving products offered by USA Technologies include VM2IQ™, CoolerMiser™, SnackMiser™ and PlugMiser™.



Schedule
Contract GS-35F-0031R



Frequently Asked Questions

Will VendingMiser® keep my drinks cold?

Absolutely - VendingMiser® has been tested and accepted for use by both major bottlers.

Is the VendingMiser® easy to install?

Yes! VendingMiser® is a simple external plug-and-play product. The VendingMiser® can be installed on the wall with simple hand tools or it can be attached to the vending machine without tools using the new Easy-Install system. The Easy-Install System allows quick installation in 5 minutes.

Is VendingMiser® safe for all machines?

Yes! VendingMiser® is compatible with all types of cold drink vending machines. In fact, by reducing run time of the machines, VendingMiser® reduces maintenance costs.

Has VendingMiser® been field tested?

Tens of thousands of VendingMisers® are operational in the field. Typical energy savings have been independently documented to be between 35% and 45%. Measurement and verification test results as well as testimonials are available on the website.

Are there any locations not appropriate for VendingMiser®?

VendingMiser's® savings are generated as a result of location vacancy. Therefore, a machine in a location that is occupied 24-hours, 7 days a week will likely generate little savings. Our VM2IQ is more appropriate for this type of location and will typically save up to 35% energy use.

Technical Specifications

ELECTRICAL SPECIFICATIONS

Input Voltage: 115 Volts (230 Volts available)
Input Frequency: 50/60 Hz
Maximum Load: 12 Amps (Steady-State)
Power Consumption: Less than 1 Watt (Standby)

ENVIRONMENTAL SPECIFICATIONS

Operating Temp: -15°C to 75°C
Storage Temp: -40°C to 85°C
Relative Humidity: 95% Maximum (Non-Condensing)

COMPATIBILITY

Vending Machines: Any machine, except those containing perishable goods such as dairy products.

INACTIVITY TIMEOUTS

Occupancy Timeout: 15 minutes
Auto Repower: One to three hours, dynamically adjusted, based on ambient temperature

DIMENSIONS

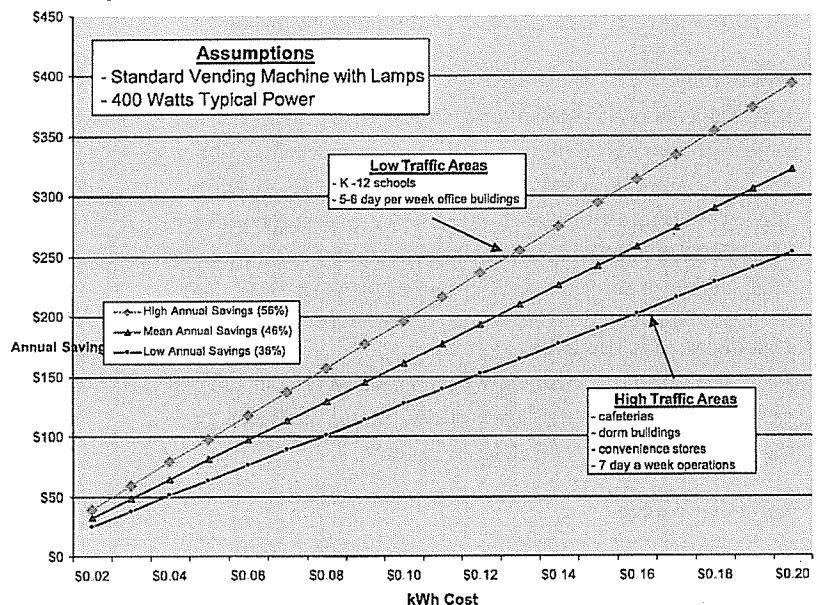
Size: 4.5"W x 1.75"H x 3.25"D
Weight: 2.2 lb. (incl. power cable)

REGULATORY APPROVALS

Safety: UL/C-UL Listed
Information Technology Equipment (ITE) 9T79



Typical Saving Generated with VendingMiser®



VendingMiser® Products

VM150	VendingMiser® with PIR Sensor
VM151	VendingMiser® only
VM160	Weatherproof VendingMiser® with PIR Sensor
VM161	Weatherproof VendingMiser® only
VM170	Easy-Install VendingMiser® with PIR Sensor
VM171	Easy-Install VendingMiser® only
VM180	Weatherproof Easy-Install VendingMiser w/PIR sensor
VM181	Weatherproof Easy-Install VendingMiser only

HALIFAX REGIONAL MUNICIPALITY
BYLAW A-200
RESPECTING AUTOMATIC MACHINES

WHEREAS automatic machines are in competition with business establishments that are obligated to pay commercial property and business occupancy taxes;

AND WHEREAS the Halifax Regional Municipality believes that it should be compensated for providing police, fire and other services to protect these machines

THEREFORE the Council of the Halifax Regional Municipality under the authority vested in it by Section 172(1)(g) of the Municipal Government Act, enacts as follows:

Short Title

1. This Bylaw may be cited as Bylaw A-200, the "Automatic Machines Bylaw".

Interpretation

2. In this Bylaw

- (a) "amusement machine" means an automatic machine which does not dispense foods, wares, or services, but is used as a game, contest of chance or skill, or for amusement whether or not registering a score, including but not limited to electronic or mechanical game machines, electronic video games, skill ball, bowling game machines, horse-racing machines, driving games, target games, pinball machines, shuffleboards, mechanical rides and other similar machines or devices under whatever name they may be indicated, but does not include video gaming devices or video lotteries licensed by the Alcohol and Gaming Authority of the Province of Nova Scotia, nor those things, the use or keeping whereof is prohibited by law;
- (b) "automatic machine" means a mechanical or electronic device that is operated by the introduction of a coin, counter or slug or is designed or normally intended to be so operated and includes a vending machine and an amusement machine but does not include automatic scales, telephone apparatus, gas or electric meters or postage stamp vending machines, or a machine that is licensed by the Province of Nova Scotia or an agency of the Province;
- (c) "Council" means the Regional Council of the Municipality;
- (d) "License Administrator" means the License Administrator appointed by the Chief Administrative Officer or his designate;

- (e) "License Inspector" means the License Inspector appointed by the Chief Administrative Officer or his designate;
- (f) "maintain" includes own, maintain, control or have in one's custody or possession or on one's premises for operation by other persons;
- (g) "Municipality" means the Halifax Regional Municipality;
- (h) "occupier" includes the person entitled to the possession of land, a leaseholder, and a person having or engaging for any way or purpose the use of the land, otherwise than as owner;
- (i) "owner" includes one or a combination of the following:
 - (a) a person who is entitled to possession as a tenant in fee simple, for life, or for a term of not less than twenty (20) years;
 - (b) a mortgagee in possession;
 - (c) where the mortgagee of land is not in possession, the person entitled to the equity of redemption;
 - (d) the person managing or receiving the rent of the land or premises, whether as his own account or as an agent or trustee of any other person; and
 - (e) a person who is assessed for the premises or the Assessment Roll of the Municipality as of the date of an alleged violation; and
- (j) "vending machine" means an automatic machine which dispenses food, beverages, goods, wares or services.

Automatic Machine's License Required

3. (1) Subject to subsection (2), no person shall maintain any automatic machine unless the person has obtained and is in possession of a valid licence from the municipality permitting the person to maintain such automatic machine.

- (2) A license under this By-law shall not be required for any automatic machine when
 - (a) it is situated in a building or premises where the principal business carried on in that building or premises is the sale of goods or merchandise or the dispensing of service through the operating of automatic machines; or

- (b) it is in support of a charitable organization, registered under the Income Tax Act (Canada), a non-profit society incorporate under the Societies Act of Nova Scotia, a church or a school;

proof of which must be provided when requested by the municipality.

(3) For the purposes of this Section, "principal business" means a business carried on in a building or premises, the gross receipts of which represent seventy-five percent or more of the total receipts of all business carried on in the building or premises.

Procedure For Obtaining License

4. (1) The application for a license pursuant to this By-law shall be made to the License Administrator on the prescribed form obtained from the Municipality and shall be signed by the applicant and accompanied by the appropriate license fee..

(2) Every application for a license shall contain:

- (a) the name, mailing address and telephone number of the owner of the automatic machine;
- (b) the civic number, name of building and location within building where each automatic machine is to be located;
- (c) the name and address of the owner and occupier of the premises on which the automatic machines is to be located;
- (d) number, type and serial number of the automatic machine sought to be licensed;
- (e) a copy of the encroachment license issued pursuant to By-law E-200, the Encroachment By-law, for any automatic machine proposed to be located on a street;
- (f) a declaration that the automatic machine is permitted on the premises on which the automatic machine is to be located pursuant to the provisions of the applicable Land Use By-law; and
- (g) any other information required by the License Administrator to evaluate the application under the terms of this By-law;

(3) An application pursuant to subsection (2) may be for more than one machine and location.

(4) The fee for said license shall be as prescribed from time to time in the License, Permits and

Processing Fees Administrative Order.

- (5) A license issued under this By-law shall display
 - (a) the words "Licensed Automatic Machine";
 - (b) the licensing year;
 - (c) a description of the type of automatic machine to which the licenses applies;
 - (d) a unique license number; and
 - (e) the date the license was issued.
- (6) The owner shall cause the license issued under this By-law to be affixed in a conspicuous place to the automatic machine to which it applies.
- (7) A license issued under this By-law may be used for any automatic machine of the type to which the license applies and may be transferred from one automatic machine to another of the same type on the same premises.
- (8) A license issued under this By-law shall expire on the 31st day of March following the date of issue.
- (9) It shall be an offence for any person to make any false statement in an application hereunder.

Administrator's Records

- 5. The License Administrator shall maintain a permanent record of each license issued and record the reports of violation thereon.

Replacement of License Sticker

- 6. The License Administrator, on payment of the fee of \$5.00, shall replace any license when a licensed owner files a declaration that the said sticker has been lost, stolen or destroyed.

License Transferability

- 7 (1) A license issued under this By-law shall not be transferable from one owner to another.
- (2) A license issued under this By-law to an owner may be transferred from one automatic machine to another of the same type which is owned by the same owner and on the same premises,

provided the owner has notified the License Administrator of the change in serial numbers.

(3) A license issued under this By-law in respect of any premises may be transferred to another premises, provided the owner of the machine has notified the License Administrator of the civic number, name of building and location of the new premises in which the automatic machine is to be located and the name and address of the owner and occupier of the new premises.

License Revocation

8. (1) A license issued under the provisions of this Bylaw may be revoked at any time by the License Inspector if he believes that any provisions of this Bylaw has been violated and upon the holder of the license being notified in writing of such revocation by the License Inspector, such holder shall forthwith cease to permit or suffer any automatic machine in respect of which the license was in force to be operated and such machine shall be immediately removed from the premises stated in the license.

(2) The License Inspector shall immediately notify the License Administrator of the revocation of a license.

Appeal

9. (1) Any person whose application for a license under this Bylaw has been refused by the License Administrator or revoked by the License Inspector may appeal to the Appeals Committee of Council.

(2) An appeal shall be in writing setting forth the grounds for appeal addressed to the Appeals Committee of Council, with a copy to the License Administrator or the License Inspector, as applicable, within fourteen (14) days after receipt by such person of written notice from the License Administrator or the License Inspector of refusal or revocation.

Operation of Unlicensed Machine

10. No person shall permit or suffer to be operated any automatic machine with respect to which there is no license in force under this By-law.

Offenses and Penalties

11. (1) Any person who contravenes or fails to comply with any other provision of this By-law shall be guilty of an offense and liable to a penalty of not less than one hundred dollars (\$100.00) and not exceeding two thousand dollars (\$2,000.00) and in default of payment to imprisonment for a period not exceeding thirty (30) days.

(2) Every day during which such contravention or failure to comply continues shall be deemed to be a new offense.

(3) Where an automatic machine is maintained on any premises for which there is no license in force, the License Inspector may, after ten (10) days notice in writing by personal service or by regular or registered mail to the owner of the premises on which the machine is located, enter the premises and seize and/or remove the automatic machine and all expenses incurred by the License Inspector in seizing, removing and storing the machine may be recovered as a debt due from the owner of the premises from which the machine was removed and the License Inspector may sell the machine to recover the expenses of its seizure, removal, storage and sale and the such expenses shall be a first lien on the property of the owner from which the machine was removed.

Inspections

12. The License Inspector may enter upon any land or premises at a reasonable time without a warrant to determine whether an automatic machine is licensed and the provisions of subsection (3) of Section 503 of the Municipal Government Act shall apply to such inspection.

Repeal

13. Section 2 through 13 of Bylaw A-501 of the former City of Dartmouth as amended, Ordinance 151 of the former City of Halifax, Section 2(a) and (d) and Section 9, of By-law 15 of the former Halifax County Municipality and Sections 2(a) and 9 of the former Town of Bedford Bylaw 15100 are hereby repealed.

Done and passed this 2nd day of March, 2004

Mayor

Acting Municipal Clerk

I, Jan Gibson, Acting Municipal Clerk of the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Halifax Regional Council held on March 2, 2004.

Jan Gibson, Acting Municipal Clerk

Notice of Motion:	February 3, 2004
First Reading:	February 10, 2004
"Notice of Public Hearing" Publication:	February 14, 2004
Second Reading:	March 2, 2004
Approval of Service Nova Scotia and Municipal Affairs:	N/A
Effective Date:	March 6, 2004