P.O. Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Item No. 8
Halifax Regional Council
September 20, 2016

TO: Mayor Savage and Members of Halifax Regional Council

SUBMITTED BY: Original Signed

Councillor Jennifer Watts
Chair, Environment and Sustainability Standing Committee

DATE: September 8, 2016

SUBJECT: Community Energy Plan: Focusing our Energy

INFORMATION REPORT

ORIGIN

Motion from the September 8, 2016 meeting of Environment and Sustainability Standing Committee

LEGISLATIVE AUTHORITY

Section 4 of the Terms of Reference of the Environment and Sustainability Standing Committee which states that the Committee "shall (a) promote and enable a variety of energy choices for residents of the municipality; (b) promote and enable sustainable and renewable sources of energy in the Municipality; (c) promote the achievement of the Municipality's greenhouse emission reduction commitments; and (e) promote ways to maximize the Municipality's capital dollars through co-location of utilities and coordination of projects"

BACKGROUND/DISCUSSION

The Environment and Sustainability Standing Committee received a staff report in regard to an update on the Community Energy Plan at its September 8, 2016 meeting. The Committee passed a motion to forward the report to Regional Council for information.

FINANCIAL IMPLICATIONS

There are no financial implications to this report.

COMMUNITY ENGAGEMENT

The Environment and Sustainability Standing Committee is comprised of six elected officials. Meetings are held in public unless otherwise indicated, a live webcast is provided of the meeting, and members of the public are invited to address the Committee for up to five minutes during the Public Participation portion of each meeting. The agenda, reports, and minutes are posted on www.halifax.ca.

ATTACHMENTS

Attachment 1: Staff report dated August 18, 2016.

A copy of this report can be obtained online at http://www.halifax.ca/council/agendasc/cagenda.php then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: Phoebe Rai, Legislative Assistant, 902-490-6732

Attachment 1

HALIFAX

P.O. Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Item No. 12.1.1
Environment and Sustainability Standing Committee (ESSC)
September 8, 2016

TO: Chair and Members of Environment & Sustainability Standing Committee

SUBMITTED BY: Original Signed

Bob Bjerke, Director and Chief Planner, Planning and Development

DATE: August 18, 2016

SUBJECT: HRM Community Energy Plan – 2016 Update Report

INFORMATION REPORT

ORIGIN

November 27 and December 4, 2007, Halifax Regional Council, HRM Community Energy Plan
July 7, 2011, Environment and Sustainability Standing Committee, Motion 8.3: Status of Community Energy Plan.
March 1, 2012, Environment and Sustainability Standing Committee, Status of Community Energy Plan
November 13, 2013, Environment and Sustainability Standing Committee, Update Community Energy Plan Revision, Desired Outcomes.
January 9, 2014, Environment and Sustainability Standing Committee, The Community Energy Plan Revision Project.
September 10, 2014, Environment and Sustainability Standing Committee, Progress Report on HRM's Community Energy Plan Update.
June 9, 2016, Environment and Sustainability Standing Committee, Community Energy Plan Update.

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter, Purpose of Municipal Planning Strategy, 228.

228 The purpose of a municipal planning strategy is to provide statements of policy to guide the development and management of the Municipality and, to further this purpose, to establish

(a) policies that address problems and opportunities concerning the development of land and the effects of the development;

(b) policies to provide a framework for the environmental, social and economic development within the Municipality;

(c) policies that are reasonably consistent with the intent of statements of provincial interest; and

(d) specify programs and actions necessary for implementing the municipal planning strategy.

As per the Terms of Reference for the Environment and Sustainability Standing Committee (http://www.halifax.ca/council/agendasc/documents/110315ca1131.pdf), Energy Choice and Security is within the Committee's mandate.

BACKGROUND

HRM's Community Energy Plan (CEP) is a Priorities Plan within the Regional Municipal Planning Strategy. The CEP was first adopted in 2007 and resulted in significant progress towards implementing energy efficiency, renewable and alternative energy technologies, and creating a deeper understanding of energy usage within the municipality. The CEP that was adopted in 2007 was comprehensive in that it helped the municipality reduce energy consumption and therefore greenhouse gas emissions. The CEP enabled corporate and community actions to realize the benefits of a healthy, vibrant, and sustainable municipality. The CEP in 2007 was a comprehensive energy plan to be actioned over ten years.

The CEP in 2007 consisted of eight main goals:

- Improve the energy efficiency of buildings;
- Increase transportation choice and efficiency;
- Increase industrial energy efficiency;
- Encourage energy efficient land use planning and neighbourhood site planning;
- Increase efficiency of infrastructure;
- Increase energy security and diversify energy supply;
- Educate and engage residents and businesses; and
- Demonstrate local government leadership.

The CEP was created in order to identify clean, efficient and renewable supplies of energy and to reduce consumption. The CEP vision is: *'In partnership with other agencies, HRM intends to achieve the most significant improvement to energy sustainability, security, renewable technology, and environmental emissions among similar sized cities in Canada over the next ten years.'*

A June 9, 2016 information report to ESSC highlighted that the CEP update will focus on targeted actions the municipality and community stakeholders can take within the two to five years to improve the sustainability of both the production and use of energy. Actions will focus on energy efficiency, renewable and alternative energy initiatives as well as a strong educational effort to increase energy literacy among residents.

DISCUSSION

Since the adoption of HRM's CEP in 2007, significant work has been undertaken and completed. The attached report highlights progress on the 2007 goals and actions. Many of these actions are now complete. HRM has continued to implement projects that help the municipality avoid costs related to energy and reduce overall energy consumption.

Significant projects with a lens for reducing energy costs include but are not limited to the following:

- Energy efficiency retrofit projects, such as Eric Spicer building, Dartmouth Sportsplex and lighting replacement and LED conversion programs
- Solar photovoltaic (PV) installations on corporately owned facilities
- New construction, such as the Halifax Central Library and Burnside four pad arena
- Adoption of the 2011 Model National Energy Code for Buildings (MNECB) into the Building Code for all new construction.
- Solar City

The attached report highlights what a CEP is and why it is important. The report highlights actions that are currently underway and actions to undertake that will impact energy sustainability and use at the corporate and community levels. At the corporate level, the CEP will directly influence the goals and actions of several Priorities Plans set out in the Regional Plan. Specifically, the Corporate Greenhouse Gas Emissions Reduction Plan sets a target for HRM to reduce its absolute corporate emissions by 30% below 2008 by 2020.

Previous engagement on the CEP from 2013-14 will be built upon to include a broader discussion with internal and external stakeholders, as well as community groups and citizens throughout HRM. This will help develop a CEP that reflects the diverse communities of HRM to help mitigate energy consumption and directly reduce associated greenhouse gas emissions.

FINANCIAL IMPLICATIONS

There are no financial implications with the creation of this report.

COMMUNITY ENGAGEMENT

Community engagement for the new CEP will take place in 2017/18.

ATTACHMENTS

HRM Community Energy Plan – 2016 Update Report

A copy of this report can be obtained online at http://www.halifax.ca/commcoun/index.php then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: Original Signed

Adam Hayter, Energy Specialist, Energy and Environment, Planning and Development, 902.490.5320

Report Approved by: Original Signed

Shannon Miedema, Energy and Environment Program Manager, Planning and Development, 902.490.3665

Community Energy Plan
2016 Update Report

2-year strategy towards a new 10-year Community Energy Plan

Prepared by:

Adam Hayter, Energy Specialist
Energy and Environment, Planning and Development
August 18, 2016

HALIFAX

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1 Background

1.1 Context and Information Reports

HRM's Community Energy Plan (CEP) is a Priorities Plan within the Regional Municipal Planning Strategy. The CEP was first adopted in 2007 and resulted in significant progress towards implementing energy efficiency, renewable and alternative energy technologies, and in deepening the understanding of energy usage within the municipality. The CEP that was adopted in 2007 was comprehensive in that it helped the municipality reduce energy consumption and therefore greenhouse gas emissions. The CEP enabled corporate and community actions to realize the benefits of a healthy, vibrant, and sustainable municipality. The CEP in 2007 was a comprehensive energy plan that highlighted the goals for HRM over the next ten years.

The CEP in 2007 consisted of eight main goals:

- Improve the energy efficiency of buildings;
- Increase transportation choice and efficiency;
- Increase industrial energy efficiency;
- Encourage energy efficient land use planning and neighbourhood site planning;
- Increase efficiency of infrastructure;
- Increase energy security and diversify energy supply;
- Educate and engage residents and businesses; and
- Demonstrate local government leadership.

The CEP was created in order to identify clean, efficient and renewable supplies of energy and to reduce consumption. The CEP vision is: *'In partnership with other agencies, HRM intends to achieve the most significant improvement to energy sustainability, security, renewable technology, and environmental emissions among similar sized cities in Canada over the next ten years.'*

During the Environment and Sustainability Standing Committee (ESSC) meeting of September 10, 2014, Energy & Environment submitted an information report titled "Progress Report on HRM's Community Energy Plan Update". This report followed the January 9, 2014 presentation to ESSC titled "The Community Energy Plan Revision Project" and the November 13, 2013 ESSC Information Report titled "Update Community Energy Plan Revision, Desired Outcomes".

A June 9, 2016 information report to ESSC highlighted that the CEP update will focus on targeted actions the municipality and community stakeholders can take within the two to five years to improve the sustainability of both the production and use of energy. Actions will focus on energy efficiency, renewable and alternative energy initiatives as well as a strong educational effort to increase energy literacy among residents.

2 Community Energy Plan

2.1 What is a Community Energy Plan?

A Community Energy Plan (CEP) is a strategic approach to reducing energy consumption and subsequent greenhouse gas emissions for a municipality and the communities within it. The CEP provides a vision and establishes goals and actions to help realize a healthy, sustainable, and vibrant community. The CEP is a long-term strategic plan that sets out a framework for mitigating energy costs. With a comprehensive CEP, the Halifax Regional Municipality (Halifax) can position itself as a leader and strive to be one the greenest municipalities by 2030.

There are three levels that a comprehensive CEP will influence. At its core, the CEP impacts municipal operations by focusing on energy planning over the long term rather than focusing by project or year by year. A CEP enables strategies, policies and programs to reduce the municipality's energy costs with a focus on buildings, infrastructure, operations, and transportation. It's important that the core of a CEP is strong and well thought out to influence the other layers of this comprehensive plan.

Figure 1: Visual of the three levels a CEP influences (image courtesy of the Guide to Community Energy Strategic Planning (2013), US Department of Energy - Energy Efficiency and Renewable Energy).

Once a strong foundation is in place and the municipality's energy priorities are identified at an operational level, efforts can be delivered outwardly towards the community and regional levels. Action for the community can be identified to help reduce energy dependency in collaboration with external stakeholders who can help deliver programming, services, or information. The municipality can also work with other jurisdictions to identify best practices and share lessons learned for a regional impact. Working with other government agencies at the provincial and federal levels can identify strategies and plans to support the communities and operations at a municipal level.

2.2 Why is a CEP Important?

Halifax's CEP is a Priorities Plan under the Regional Municipal Planning Strategy. The CEP enables Halifax to implement established and leading edge advances in energy efficiency, energy management, renewable and alternative energy systems. These efforts result in cleaner air, land and water while costing taxpayers less for energy well into the future.

Halifax's new 10-year CEP will align with many other plans that are underway. Energy considerations are important for many plans, including:

- Corporate Greenhouse Gas Emissions Reduction Plan
- Centre Plan
- Integrated Mobility Plan
- Halifax Green Network Plan
- Active Transportation Plan
- Urban Forest Master Plan
- Regional Municipal Planning Strategy

While a CEP can direct municipal operations, it is also a collaborative effort to improve energy sustainability for the community at large. In order to do this, a well thought out engagement strategy is necessary. By reaching out to the communities, leaders, key stakeholders and community groups in Halifax, a long term CEP can identify actions that benefit everyone. The CEP will identify key stakeholders who can help deliver on initiatives that promote healthy, sustainable, and vibrant communities throughout HRM.

A well-developed CEP is based on evidence and includes methods for measuring performance. This information is critical for measuring success towards Halifax's vision of being a leading healthy, vibrant and sustainable community.

2.3 Deliverables and Timelines

The timeline can vary for development of a CEP. This depends on the level of commitment of the municipality and resources that are available. The average time to create a comprehensive CEP is between 10 and 24 months. Figure 2 below shows a tentative timeline and is sourced from the "Guide to Community Energy Strategic Planning (CESP)" that was developed by the U.S. Department of Energy.

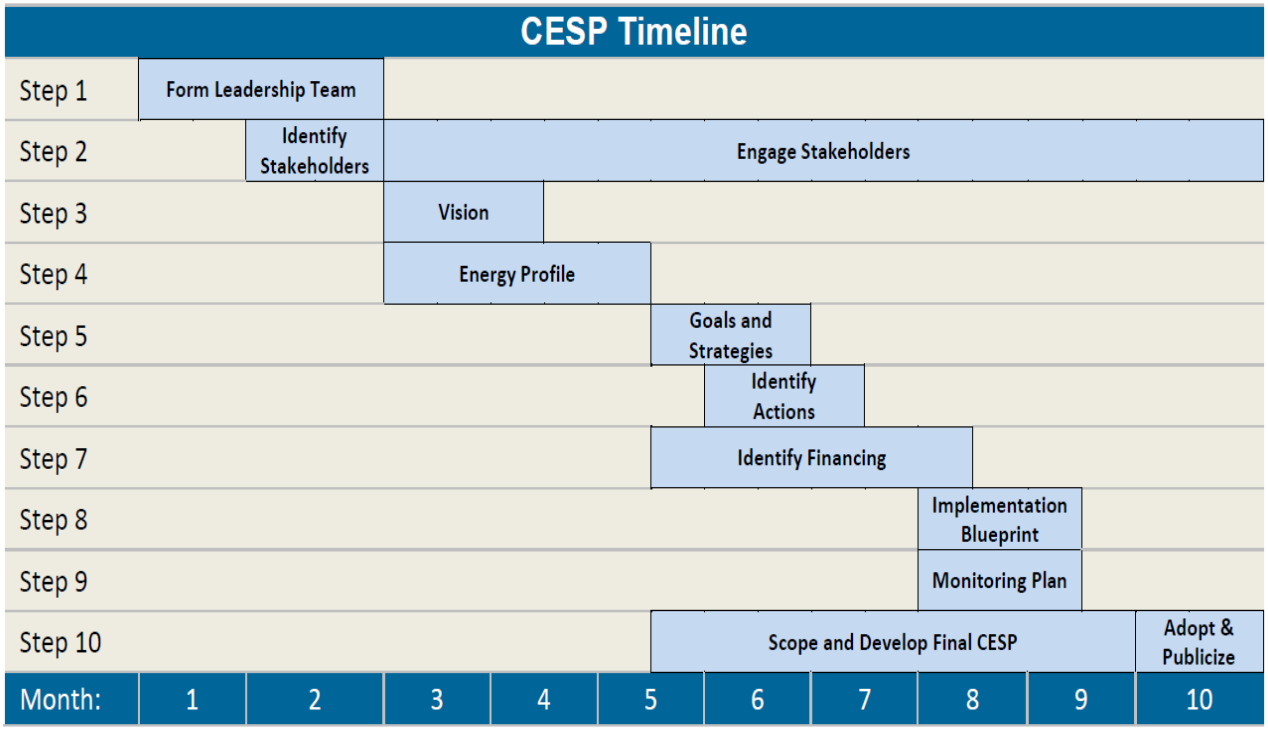

Figure 2: Conceptual timeline to develop a Community Energy Plan (image courtesy of the Guide to Community Energy Strategic Planning (2013), US Department of Energy - Energy Efficiency and Renewable Energy

2.4 Getting to Implementation

Implementation of a CEP is easier said than done. Through the development of a new CEP, it's important to be realistic to deliver on the goals and actions that are developed. Depending on the desired outcome, an investigation needs to take place during the development of the CEP to ensure that resources and capacity are available to realize the vision of the CEP. Otherwise, there is a risk of creating a document without carefully thinking about the realities of implementing a plan with limited resources. Efforts need to be maintained to ensure the delivery of the goals of the CEP over time.

3 Community Energy Plan 2016 Update

3.1 Actions for the Next Two Years – the Plan for a New CEP

Since the inception of Halifax's ten year CEP in 2007, significant efforts were put forward to implement the goals and actions. A review and progress update on the 2007 actions is included as an Appendix. In 2013, direction was given to reinvestigate the CEP and develop a five year plan for 2015-2020. Due to departures of key staff on the Energy and Environment team, the five year plan could not be completed. Engagement took place close to two years ago in 2014 and early 2015.

Since direction was given to create a new two to five year plan beginning 2015, the political environment has changed at both the provincial and federal levels and advances continue within the field of energy management. Canada committed to play a role in mitigating climate change at the Paris Climate Conference last year and has been busy laying out a plan and necessary resources to do just that. Planning for a new comprehensive CEP for 2018 allows the municipality to develop the plan alongside all of the new and very significant initiatives that are under development now to strive towards a low carbon economy.

It's anticipated that two years from now, HRM will adopt a new CEP that will shape the conversation around energy for a decade. To get there, key corporate and community actions (new and ongoing) are outlined below to be completed over the next two years. These actions are required to be prepared as an organization and as a community to create an impactful and successful CEP.

3.2 Corporate Actions

The following actions will provide the necessary information and awareness to guide the development of the new ten-year CEP. The following actions are detailed below:

1. *Create an Energy Leadership Team*
2. *Focus and Refine Corporate Energy Management Program*
3. *Investigate an Energy Efficiency and Solar Energy Integration Plan*
4. *Explore District Energy and Combined Heat and Power Pilot Opportunities*
5. *Explore an Enhanced Outdoor Lighting Strategy*
6. *Review of Transportation Impact – Fleets*

Table 1: Summary of deliverables and accountability for HRM corporate actions

Action	Estimated Time for Completion	Key Group Responsible	Other Stakeholders	Financial Implications
Create an Energy Leadership Team	Establish in 3 to 6 months	Energy and Environment	Managers, Directors or Department Champions from: Facility Design and Construction, Facilities Management, Real Estate, Planning and Development, Procurement, ICT, CAO's Office, Government Relations & External Affairs, Parks and Recreation, Transportation and Public Works, Transit, Police, Fire, Halifax Water	No cost to HRM Opportunity to strategically collaborate across business units. Build subject matter expertise and leads to defined roles to help meet targets and goals.

Action	Estimated Time for Completion	Key Group Responsible	Other Stakeholders	Financial Implications
Focus & Refine Corporate Energy Management Program	1. Engagement with Staff • 6 months 2. Benchmark Buildings • 6 months 3. Building Optimization • Plan in 6 months • Implementation 12 to 24 months 4. Measurement and Verification Planning • Plan in 6 months • Implementation ongoing 5. HRM Sustainability Policy • 24 months 6. Examine Energy Efficiency Fund • 6 to 12 months	Energy and Environment	Facility Design & Construction, Facilities Management, Real Estate, Planning and Development, Procurement, ICT, CAO Office, Government Relations & External Affairs, Parks and Recreation, Transportation and Public Works, Transit, Police. Efficiency Nova Scotia has a Strategic Energy Management program and could assist.	No cost to HRM unless consultant hired to assist. Avoided costs to operations and spending on energy.
Investigate Energy Efficiency and Solar Energy Integration Plan	Energy Efficiency Investigate recapitalization plan and integrate – 6 months Solar Energy Investigate Solar Integration for Provincial Program – 2 to 6 months Implementation 12 to 36 months	Energy and Environment, Facility Design & Construction, Facilities Management	Real Estate, Finance, Legal External: NS Department of Energy, Efficiency Nova Scotia	No cost to investigate opportunity. Implementation costs will be presented to Council. Avoided costs to operations and spending on energy.

Action	Estimated Time for Completion	Key Group Responsible	Other Stakeholders	Financial Implications
Explore District Energy and Combined Heat and Power Pilot Opportunities	Investigate opportunities as they arise, such as the Cogswell Exchange and the Dartmouth 4-pad for district energy potential. Ongoing.	Energy and Environment, Facility Design & Construction	Facilities Management, Real Estate, Finance	No cost to investigate. Potential for avoided costs and a revenue stream. Capital expenditures will be presented to Council.
Explore an Enhanced Outdoor Lighting Strategy	Investigate within 12 months	Energy and Environment, Parks and Recreation	Facilities Management, Transportation & Public Works	No cost to investigate. Results in cost savings.
Review of Transportation Impact – Fleets	24 months	Energy and Environment, Corporate Fleet, Transit	Police, Fire	No cost unless consultant hired. Financial benefit if projects go forward.

3.2.1 Create an Energy Leadership Team

The creation of an Energy Leadership Team will include key decision makers or champions from each Business Unit to identify needs, priorities, and support to develop a strong internal team who will work together to reduce operational costs related to energy. This team will foster collaboration across the organization to avoid energy consumption and greenhouse gas emissions. This will be an important team to identify opportunities and resources for the near term and to help plan various scenarios for the long-term vision of the CEP.

3.2.2 Focus and Refine Corporate Energy Management Program

An Energy Management Program (EMP) will highlight transparency and responsibility to tax payers in HRM by showing how the municipality is avoiding energy costs today and into the future. There are several components to an EMP and the actions below can begin in the near future to collect the required information to develop the scenarios for the ten-year CEP.

Actions within this include but are not limited to:

1. *Engagement with Staff*
2. *Benchmarking Buildings*
3. *Building Optimization*
4. *Measurement and Verification Planning*

5. *HRM Sustainability Policy*
6. *Energy Efficiency Reserve*

3.2.2.1 Engagement with Staff

Once an Energy Leadership Team is in place, an EMP will further enhance the delivery of projects that avoid energy consumption by engaging staff throughout the organization. Energy management identifies strategies for improving a building's performance, and the most important component of the building is the people who occupy that space. Operation and maintenance staff play a key role to ensure that buildings are comfortable and everyone has a safe place to work. Staff will be engaged to gather ideas and solutions to improve comfort and avoid energy consumption.

3.2.2.2 Benchmark Buildings

An important component to an EMP is to benchmark buildings. To verify the impact of Halifax's investments to avoid energy, a baseline of current energy performance is necessary to report on success. Creating a baseline of all owned buildings for energy performance will identify a priority list for action and will complement other work that has been completed such as the building recapitalization program. Energy consumption should be reported based on dependent variables that impact the energy performance of buildings, such as the size of the building, total heating and cooling degree days for the year, building use and the number of occupants. These dependent variables identify the largest consumers of energy, and allow for verification of the building's energy performance and the impact of capital energy projects.

With a strong baseline in place, decisions can be made in an informed manner to tackle the buildings that are performing the worst for energy consumption. The data will be used to support calculations for the best return on investment for energy efficiency, renewable and alternative energy projects. A strong baseline allows for projects to be verified upon completion to ensure the estimated energy savings were achieved as expected. Priority projects can be aligned with planned repairs or recapitalization projects to reduce construction costs. For example, when a roof is in need of replacement it is a good time to examine the potential for solar energy or replacement of roof top mechanical equipment for ventilation and indoor comfort requirements.

3.2.2.3 Building Optimization

Optimizing the energy performance of HRM's current buildings should be examined as a priority in the near term. A good portion of the buildings in HRM have a building automation system through the use of controls, sensors, and data collection on performance. Over time, buildings that have controls and sensors tend to drift from optimal performance. Optimizing the buildings that currently have a building automation system provides near term energy savings and improves the working conditions for the building's occupants. This exercise can further identify capital replacements to improve the performance of the building when the system is accurately collecting data in real time.

3.2.2.4 Measurement and Verification Planning

Further to building optimization, a measurement and verification plan is important to ensure that the capital investment to avoid energy consumption is performing as designed. This

requirement should be considered for inclusion in all future work on building systems that yield energy savings.

3.2.2.5 HRM Sustainability Policy

In addition to an EMP, it is vital to have a corporate policy that can help understand why these initiatives are important and what it means for the municipality. An HRM Corporate Sustainability Policy should be considered going forward. This will help with highlighting the municipality's commitment to sustainability across the organization. The Sustainability Policy can highlight the importance of life cycle costing and why these need to be considered with tenders and request for proposals for any purchase of goods that have energy savings and overall efficiencies for staff.

3.2.2.6 Examine the Energy Efficiency Reserve

The Energy Efficiency Reserve was established at approximately the same time as the CEP's adoption in 2007. The annual budget for the fund has historically ranged from $300,000 to $500,000 per year, without any guarantee of renewal.

This fund has been beneficial in meeting the actions that were set out in the 2007 CEP. The fund has supported studies and implementation of energy efficiency, renewable and alternative energy, and corporate district energy projects. The fund helps plan and reduce the incremental costs that are associated with these projects to ensure that operational savings are optimized to deliver reduced energy costs.

There is an opportunity to better utilize the reserve to help with renovations and new building designs. Efficiency Nova Scotia was created in 2011 after the fund was created in 2007. There is a lack of direction when applying energy efficiency rebates to projects and how these rebates should be allocated back to the fund to continue to be applied to future projects. Projects in various business units can benefit from rebate programs and the Energy Efficiency Reserve but their remains a lack of awareness of these opportunities. Currently, there is a lack of verification of actual avoided energy costs into the future to replenish the reserve for future use.

A well-structured reserve will support the Energy Management Program and ensure that energy efficiency, renewable and alternative energy projects are implemented in a seamless fashion without impacting other budgets. For example, Edmonton, Alberta has an Energy Management Revolving Fund (http://www.edmonton.ca/city_government/documents/EnergyManRevolvingFund.pdf) that allows a maximum of $30,000,000 to be loaned through the Alberta Municipal Financing Corporation. The stipulation is that all projects must meet at least an eight year payback and the energy savings over this time are paid back to the fund to repay the loan for a given project. This allows for implementation of various projects without impacting the allocated capital expenditure for a new build or major renovation.

A similar fund could be set up in HRM so that budgets are not implicated and all departments can make use of the funding if they meet specific criteria. Such an approach would require consultation and investigation from Finance and collaboration with various departments. Another option is to restructure the reserve so that a certain percentage of all calculated savings from smart energy projects would be allocated back into the reserve through the budget process

the following year. These and other options all require improved measurement, verification and reporting on avoided energy costs.

3.2.3 Investigate Energy Efficiency and Solar Energy Integration Plan

Energy efficiency is the lowest cost fuel resource and should continue to be implemented as a priority for the municipality. Strategies through the EMP could enable implementation of energy efficiency through an energy efficiency purchasing policy. Tenders and awards of contracts should examine the benefits of life cycle costing to enable the application of energy efficiency technologies. The incremental cost difference between a standard purchase as compared to an energy efficient purchase is usually offset through the technology's useful lifespan. Programs and services available through Efficiency Nova Scotia should be utilized to ensure support for implementation to help offset the incremental cost difference between energy efficient technologies and business-as-usual technologies.

HRM has a number of solar energy systems installed throughout its building stock. These include a number of solar thermal and solar photovoltaic (PV) energy systems. There have been a few maintenance issues that have risen with these systems since their implementation. To ensure the expected lifetime savings, these systems need to be optimized as part of the building optimization initiative detailed above. Once an inventory is complete of the current status municipal solar energy systems, an ongoing operations and maintenance plan should be developed. Monitoring systems will be installed to report actual energy delivered for those systems that do not currently have them. This exercise will also help identify lessons learned to improve the installation of future systems.

The province of Nova Scotia is currently developing a program that is meant to help with the integration of solar photovoltaic (PV) energy systems for municipalities, non-profit organizations, and First Nation communities. This program is expected to launch in 2017 and staff have done some work to be in a position to participate should the program make financial and environmental sense. A summer student conducted an analysis of the solar potential of corporately-owned buildings to determine top candidate buildings that could be considered for the program. Details of the provincial program will be released in the coming months.

3.2.4 Explore District Energy and Combined Heat and Power Pilot Opportunities

District energy provides an opportunity to reduce greenhouse gas emissions and provide efficiencies of scale within operations for municipal buildings to connect to existing or future district energy systems. Waste heat generated at HRM facilities can be used within the building or delivered to neighbouring buildings. Arenas present a unique opportunity due to the amount of heat that is created in the process of creating ice. If the waste heat is delivered to another building or use, other mechanical systems do not have to work as hard to transfer the waste heat, a win-win situation.

The opportunity for combined heat and power (CHP) systems would enable Halifax not only to generate electricity at appropriate facilities but also capture the waste heat and deliver it for another use. These systems are expanding rapidly in European countries as they've identified this measure as a key strategy to meet their Energy Efficiency Directive from 2012. An

investigation would highlight the opportunity for Halifax to implement CHP technology in a strategic manner to meet our greenhouse emission targets and to offer a stable electrical power source even in cases of emergencies. Pilots for each of these technologies will generate a deeper understanding of the opportunity that they can provide the municipality.

3.2.5 Explore an Enhanced Outdoor Lighting Strategy

Work continues to convert outdoor lighting for streetlights and facilities to more efficient lighting solutions. This strategy would examine the possibility of better lighting control strategies for areas such as sportsfields and tennis courts to reduce the run times, especially when the outdoor facility is not in use.

3.2.6 Review of Transportation Impact – Fleets

Transportation involves substantial costs for fueling the fleet for transit, fire, police, and fleet vehicles. Over the next two years, an investigation to identify opportunities for efficiencies within these fleets will be conducted in collaboration with the associated business units.

Idle free campaigns have been in place for a number of years. Reducing idling avoids unnecessary energy costs and greenhouse gas emissions. Some municipal fleets, such as Ontario Police, have incorporated systems in police vehicles that reduce idling while maintaining necessary comfort for staff in these vehicles. Halifax has considered this and other opportunities in the past. An investigation to determine potential actions and savings will be included in the new CEP.

Alternative fuels are being considered within municipal fleets. Electric vehicles are becoming more popular and the cost has decreased in recent years. Halifax could be a leader in the adoption of electric vehicles. Charging stations have been included in some of Halifax's new buildings. Further, Transit has received funding from the federal government to conduct an electric bus pilot project. Arguments have been made that the greenhouse gas emissions are similar between vehicles with internal combustion engines and electric vehicles in Nova Scotia due reliance on fossil fuels to generate electricity. However, Nova Scotia has set progressive targets to reduce emissions and more renewable and alternative technologies continue to be implemented. Maintenance costs tend to be lower for electric vehicles than internal combustion motor vehicles. An investigation to examine the potential for adoption of electric vehicles would help quantify the current opportunity.

3.3 Community Actions

To properly address the needs of the communities in HRM, public consultation will be a key requirement over the next two years to help shape the next CEP. The initiatives highlighted are meant to enable activities within the communities of HRM and do not indicate a commitment from HRM to assume responsibility of establishing an operational role. The following four initiatives will begin to be investigated internally to determine their feasibility and whether municipal barriers exist to enable them:

1. *Investigate Property Assessed Clean Energy (PACE) Financing*
2. *Research Neighbourhood District Energy Opportunities*
3. *Investigate Building Code and Land Use Bylaws for New Developments*
4. *Create an Energy Hub for Residents*

Table 2: Summary of deliverables and accountability for community actions

Action	Estimated Time for Completion	Key Group Responsible	Other Stakeholder Involvement	Financial Implications
Investigate PACE Financing	12 months	Energy and Environment	Legal	None to review and recommend. None to implement – financing mechanism and cost recovery similar to Solar City Financial benefit to property owners to mitigate a significant burden for upfront capital costs. Increases local capacity and job growth.
Research Neighbourhood District Energy Opportunities	3 to 6 months	Energy and Environment, Planning and Development	Legal	None to review. Cost benefit to communities who implement.
Investigate Building Code and Land Use Bylaws for New Developments	12 to 24 months	Energy and Environment, Planning and Development	Legal	No cost to HRM. Benefits to community in avoided energy costs.

Action	Estimated Time for Completion	Key Group Responsible	Other Stakeholder Involvement	Financial Implications
Create an Energy Hub for Residents	12 months	Energy and Environment	Corporate Communications External: Efficiency Nova Scotia, Clean NS Foundation, NSP, QUEST, CaGBC, EAC	No cost to HRM.

3.3.1 Investigate Property Assessed Clean Energy (PACE) Financing

Investigate the expansion of the Solar City program to a Property Assessed Clean Energy (PACE) program. The HRM Charter, section 79.2(ada), allows for financing for energy efficiency equipment and solar energy systems. Solar City relaunched in June 2016 after a successful pilot to include solar hot water, solar hot air, and solar photovoltaic (PV) energy systems for adoption to property owners. This program mitigates a common challenge with the upfront capital cost to invest in a solar energy system by offering financing over a ten year period.

PACE would enable support for deeper energy saving retrofits for property owners that heat their property with non-electric fuel sources. Efficiency Nova Scotia currently offers rebates and energy efficiency measures only for electrically-heated properties. A PACE program through HRM would help reduce the burden of the upfront capital costs for properties that heat with fossil fuels. The program could take an approach for supporting renovations that reduce the greenhouse gas footprint of properties.

Financial support for these types of retrofits may increase depending on decisions that will be made at the federal level to increase national mitigation efforts. Any new information, programs and funding opportunities will be considered in the ten-year CEP.

3.3.2 Investigate Neighbourhood District Energy Opportunities

District energy offers an opportunity for reduced greenhouse emissions and efficiencies of scale for energy distribution. There is a near term opportunity to investigate and research the requirements for a district energy by-law for areas that have, or are forecasted to have, significant density. These areas include:

- Cogswell lands
- Downtown Halifax and Dartmouth
- Centre Plan – primary growth areas
- Centre Plan – future growth areas
- Greenfield Developments

The municipality cannot operate as a utility; however, it can play a role to enable proponents who want to implement district energy systems. Whether this requires changes to the Municipal Planning Strategy and/or the Land Use By-law will need to be investigated to enable the opportunity for proponents to deliver district energy on a community scale. A district energy by-law could exist on its own or become a land use by-law for specific areas.

3.3.3 Investigate Building Code and Land Use Bylaws for New Developments

The municipality will continue to grow into the future. New developments are taking place in urban, suburban and rural areas of the municipality. There is an opportunity to set principles in place for greenfield developments to ensure that new communities are positioned well to optimize the energy of the sun. If proper street orientation at the time of development is in place to allow builders to position a new home to maximize access to solar, new homes have the opportunity to significantly reduce heating costs through the application of active or passive solar technologies. An examination of the land use by-laws for new areas to implement, at the very least, solar ready homes should take place.

For new commercial, multi-unit residential and mixed use buildings it would be beneficial to identify the avoided energy if all new buildings were built with a minimum 60% wall cover and a maximum 40% window cover. This would be compared to a common building practice as of late where buildings have complete window wall or curtain wall envelope assemblies that yield larger than necessary mechanical systems for heating and cooling. The new development should also optimize the opportunity for solar integration and green roofs to mitigate the heat island effect in urban settings.

Other strategies exist for new developments. The 2011 Model National Energy Code for Buildings (MNECB) was applied to the new building code. This is considered a vast improvement because the 1997 standard was applied prior to 2015. Since its adoption, there has been an improvement in building performance but there are opportunities for trade-offs that limit the impact of the MNECB. An investigation to identify best practices to understand how new buildings are designed and constructed will be undertaken.

3.3.4 Create an Energy Hub for Residents

There are a lot of external stakeholders who are doing great work to help communities mitigate their impacts on consuming energy. The municipality can create a central place for information and resources relevant to Halifax so residents can quickly identify programs and services that are available to them. This would include links and supporting resources to organizations such as, but not limited to:

- Efficiency Nova Scotia (ENS)
- Clean Nova Scotia Foundation
- Nova Scotia Power (NSP)
- Ecology Action Centre (EAC)
- Canada Green Building Council (CaGBC)
- Quality Urban Energy Systems of Tomorrow (QUEST)
- Canada Mortgage Housing Corporation (CMHC)

- Natural Resources Canada – Office of Energy Efficiency
- Nova Scotia Department of Energy
- Environment and Climate Change Canada

3.4 Region

Within the context of the CEP, collaboration will continue with other municipalities in Nova Scotia to determine best practices and lessons learned. Discussions will continue with relevant provincial departments, especially as discussions around the Electrical Plan for 2020 begin to take shape. As the federal government prepares to announce plans around a Low Carbon Economy, the new CEP will be positioned well to optimize efforts to take advantage of upcoming programs and initiatives.

4 Next Steps

4.1 Setting the Stage for a Comprehensive Ten Year CEP

The efforts noted above are necessary to complete over the next two years for the new CEP to include quantitative and qualitative analysis as well as specific goals and actions over ten years. A focus on corporate action is important so staff can take stock and analyze data to inform decision making to meet the municipality's goal to reduce greenhouse gas emission by 30% from 2008 levels by 2020. The new ten year CEP will also have the opportunity to establish other performance metrics that will move it well beyond the targets set for 2020. Engagement internally and externally will be a valuable exercise to include residents and the diverse mix of community groups in Halifax to be a part of Halifax's energy future. Within the first year, resources will be identified to develop a comprehensive CEP through hiring or contracting services through a request for proposals.

The formation of the Energy Leadership team will help identify key internal and external stakeholders. Resources will be identified to enable the strategies necessary for Halifax to become a leading municipality on the adoption of clean technology such as energy efficiency technology, renewable and alternative energy technologies, and to enlist best practices in energy management. Targets can be set for a significant portion of electricity to come from renewable and alternative energy generation, waste heat from municipal owned facilities will be optimized, utilization of combined heat and power systems to improve efficiencies of heating systems, building automation systems will be optimized to improve performance of the mechanical equipment and improve indoor comfort and air quality which will lead to better places of work for HRM employees.

The new ten year CEP will complement the efforts of the federal and provincial governments such as enabling municipal strategies to optimize opportunities with:

- Low Carbon Economy
- Federation of Canadian Municipalities
- Provincial Government

- Nova Scotia Electrical Plan Review for 2020
- Pending Provincial Solar Program
- Efficiency Nova Scotia services and programs
- Applicable programs through the Clean Foundation

Updates are proposed to coincide every 4-5 years to ensure alignment and adaptability to a changing environment.

- 2018 – Launch new CEP
- 2022 – Review 1
- 2026 – Review 2
- 2028 – Report on Impact. Engage in new CEP to coincide with new Regional Plan.

5 Appendix – Status Update for 2007 CEP Actions

Goal 1: Improve the Energy Efficiency of Buildings	
ACTION	**STATUS**
Corporate Actions	
Retrofit existing HRM buildings for energy efficiency improvements and the use of renewable energy technologies such as solar water heating. Focus on large energy users: arenas, community centres, libraries, etc.: • Utilize demand side management (DSM) programs as a resource tool to reducing energy consumption • Create a capital reserve fund for energy efficiency projects, replenished by part of savings from retrofit projects	Many successes in this area. Building retrofits since 2009 include: • Solar Energy Systems o 18 solar installations on municipal buildings, showcasing a range of available technologies for domestic hot water or space heating. o 7 solar photovoltaic (PV) installations since last update • Dartmouth Sportsplex energy retrofit and conversion to natural gas • Metro Transit facility, 200 Ilsley Ave. • Alderney 5 – geothermal, district energy, lighting retrofit, boiler retrofit • Conversions to natural gas • Lighting upgrades (large initiative completed with assistance from Efficiency Nova Scotia) • Geothermal used in several buildings, including the Alderney complex, East Dartmouth Community Centre, New Dutch Settlement Station (# 40), Fall River • District Energy projects completed for Dalhousie University complex, VG and QEII Hospitals, DND, Halifax Police Headquarters and Centennial pool, and Alderney 5 complex • Central library is 'district energy ready' • HRM's energy efficiency reserve has been established and is very successful in enabling energy efficiency projects. Currently about $300,000 goes in annually from savings.
Require higher standard of energy efficiency and environmental design in new HRM buildings.	• All new HRM buildings are considered to be built to LEED silver standards or principles as a minimum.

Community Actions	
Support existing programs to increase energy efficiency and consumption reduction in the residential sector: • EnerGuide for houses • R-2000 Home by NS Home Builders Association	• HRM went beyond support and instead created an innovative program called Solar City, to encourage and enable home owners to install solar panels for domestic hot water. HRM has achieved approval from the Province of Nova Scotia to amend the HRM Charter to allow participants to be billed as part of their annual tax bill. Pilot project completed in 2015 with 388 solar hot water installations. Second phase is underway as of June 2016 supporting the installation of solar hot water, hot air, and photovoltaic (PV) installations. • HRM participated in the development of the Model National Energy Code. The Province and the federal agent EnerCan are conducting surveys of market places and governments to measure status and develop a strategy for implementation in all provinces and territories. Model National Energy Code 2011 has been adopted in provincial building code.
Adjust the building permit fee structure to provide incentives for new high efficiency homes based on achieving an EnerGuide 77 and/or R-2000 standard.	• Nova Scotia applies energy performance regulations in Part 9 of the Code and requires compliance to EnerGuide 80 for all dwellings; R2000 at 78 and EnerGuide 77 are therefore moot in the circumstance. All dwellings must and do meet 80 by either prescriptive or performance means.
Promote incentives currently available to support energy efficiency in buildings, in particular: • NSE's 10% rebate on solar water heating systems • CMHC's 10% premium refund on its mortgage loan insurance premiums • Federal Eco Energy Retrofit Program and the associated provincial program • Utilize existing Conserve Nova Scotia energy efficiency programs	• Many changes to incentives and programs since 2007. HRM is investigating all opportunities in preparation for the new CEP. This will take the shape of an Energy Hub to centralize programs and information for property owners in HRM.

Use municipal code by-law changes as lever to require EnerGuide ratings on all existing homes, at time of sale, with involvement from the realtors association and the Province.	• Not HRM authority. Review if opportunity exists to influence. EGSPA's related goals are: • All new residential dwelling units constructed in the Province will be required to achieve an EnerGuide rating of 80 or meet energy conservation measures adopted in the Nova Scotia Building Code Regulations made under the Building Code Act after January 1, 2011. • All new residential dwelling units constructed in the Province that are within the scope of Part 9 of the National Building Code of Canada will be required to display an EnerGuide rating by the year 2008. o Following consultation with stakeholders, mandatory labeling of new homes has been replaced with a choice of either performance based or prescriptive energy efficiency requirements that were adopted in the Provincial Building Code on December 31, 2009. These requirements apply to both new single family homes and all small buildings built under Part 9 of the National Building Code. *Note these goals do not relate to existing homes at the time of sale.
Goal 2: Increase Transportation Choice and Efficiency	
ACTION	**STATUS**
Corporate Actions	
Right-size the municipal fleet, assign vehicle use appropriately and designate more vehicles for multi-use.	Ongoing activities include: • Replacement of gas with efficient diesel units • Investigation of alternative fuels • Smart Cars for employee use • Fleet driver training program • Use of a vehicle Right Sizing Filter and Life Cycle Analysis for new vehicle purchases
Continue and support HRM's Commuter Trip Reduction program.	• HRM SmartTrip (now complete, new program under development)
Implement driver training for HRM's fleet drivers.	• Internal policy to restrict idling to a maximum of one minute and to prohibit HRM staff from using drive through services while operating HRM vehicles • Driver training for Transit completed through Clean Foundation
Purchase and showcase alternative fuel vehicles e.g. CNG, Propane, Electric or Hybrid.	• HRM purchased 5 smart cars for employee use for work purposes and purchased 2 hybrid SUVs. Smart cars are no longer used by HRM, new program under development

Community Actions	
Expand public transit services, in particular: • Ferry service to Bedford • Rapid bus transit to suburban areas • Neighbourhood shuttle buses connecting to rapid transit network	• Ferry service to Bedford not completed • Completed rapid bus transit for Tantallon (MetroX), Sackville, Portland Hills and Woodside (MetroLink) • Completed community transit in Beaverbank, Porter's Lake and Sambro • Bike and Ride now available on all ALF routes, conventional, MetroLink, MetroX, and the ferries. Bike lockers available at the Cobequid, Sackville and Portland Hills Terminals. • New bus route to airport and service extended in Porter's Lake. • Integrated Mobility Plan is ongoing and will highlight efficiencies and other opportunities • Investigation is ongoing for alternative fuel options for the fleet
Encourage implementation of the Active Transportation Plan.	• Clean NS, EAC, Halifax Cycling Coalition, RP+5, Centre Plan.
Look into the possibility of restructuring HRM's taxi zoning for greater efficiency (e.g. fewer taxis having to leave the airport without passengers).	• HRM proposed a bylaw to eliminate taxi zoning; however the recommendation was not approved by Council
Goal 3: Increase Industrial Energy Efficiency	
ACTION	**STATUS**
Community Actions	
Encourage industrial process heat recovery in industries such as breweries, dairies and others.	• Not HRM mandate. • Opportunity to review if waste heat is in a form of district energy.
Encourage activities to focus improvement on efficiencies in HRM-based industrial processes, and for businesses in partnership with organizations such as the Eco-efficiency Centre and CIPEC.	• Not HRM mandate.

Conduct an inventory of sources of industrial waste heat that can be used by others (e.g. cooling water from Tuft's Cove). • Encourage the development of new buildings that can be heated using low grade thermal energy • Explore feasibility for district cooling opportunities	• District cooling at Alderney 5 complex o System is currently not performing as designed. Needs to be investigated for efficiencies. Former Dartmouth Town Hall building has been disconnected from the system. • Dalhousie to provide district heating to new library. o The Central Library was intended to hook into Dalhousie's district heating system. The connections are in place but the agreement has not been finalized. Opportunity to re-investigate and connect the building to the district heating network at Dalhousie. • HRM encouraged a new condominium development to use waste heat from the Bedford sewage treatment plant, however this proposition was rejected. • Cogswell Street Interchange Master Plan - HRM has an objective to preserve the option to use waste heat from the sewage treatment plant. o Halifax Water has completed a feasibility study to utilize the waste heat from the plant. HRM needs to enable the opportunity by examining a bylaw to require future buildings on the Cogswell Lands to connect to the system. Similar bylaws have been created in other jurisdictions.
Goal 4: Encourage Energy Efficient Land Use Planning and Neighbourhood Site Planning	
ACTION	**STATUS**
Community Actions	
Include energy considerations in the Urban Design Guidelines as a mechanism for leading development within the Capital District toward more sustainable models.	• Incorporated in HRM By Design for downtown Halifax. • This could be expanded further to the Centre Plan and new construction guidelines.
Influence the community visioning exercises and the resulting guidelines for community development to include energy considerations.	• Yes, with RP+5. Energy considerations are throughout RP+5's five major themes, such as solar orientation, reducing barriers to renewable and energy efficient solutions, etc. • Engagement with the new CEP will broaden the conversation to capture the various needs in HRM.
Provide an inventory and plan for opportunity sites within HRM including brownfields and under-utilized areas within Business Parks.	• Completed information reports to Council on brownfield site redevelopment. • Province just released new Contaminated Sites Regulations, effective beginning July 2013. This will likely decrease some of the barriers for redevelopment, as neighbouring properties are not listed as those required to sign off on the property, unless the neighbouring properties are also contaminated and were part of the remediation.

Provide opportunities for local food production and small scale food retail through urban agriculture and preservation of agricultural land within rural areas of HRM.	• HRM collaborating on food quality and security as part of Healthy Communities Outcome Area. o Urban orchard in Dartmouth o Mobile food market pilot project o Partnered with Halifax Food Policy Alliance (HFPA) ▪ Recently published Food Counts: Halifax Food Assessment o To increase understanding of local food system to develop a food strategy and municipal policies that better support community food security.
Goal 5: Increase Efficiency of Infrastructure	
ACTION	**STATUS**
Corporate Actions	
Create a Street Lights Efficiency Strategy including standards, inventory, energy reduction action plan, and partnerships. Work toward bringing all streetlights in HRM under municipal control.	• About 2,500 streetlights had been converted by 2011. Province has decided all streetlights must be converted to LED. HRM has purchased all lights and the conversion to LED for all is nearing completion.
Restore the commitment to LED Traffic Signals Program and set a program completion date.	• Completed. All HRM traffic lights are now LED, completed by 2011.
Ensure implementation of the greenhouse gas emission reduction plan for pumping stations including items such as energy consumption monitoring, regularly scheduled maintenance, end of life motor upgrades to high efficiency units, and variable frequency drives on pumps with high flow variability.	• No longer HRM's mandate.
Explore options to encourage additional water conservation among water consumers.	• Water consumption is now tracked for HRM buildings, through our energy tracking/greenhouse gas emissions inventory.
Goal 6: Increase Energy Security and Diversify Energy Supply	
ACTION	**STATUS**
Corporate Actions	
Participate in expanding natural gas availability in HRM.	• HRM was involved in a pilot program with Heritage Gas in an attempt to improve uptake by existing residential homes (versus new developments) by looking at improvements to the construction process and alignment with existing roadwork. • HRM is considering natural gas or other alternative fuels in fleet and buses.

Pursue Green Power Purchasing opportunities for HRM.	• Note – this is not green procurement. Green power purchasing refers to purchasing blocks of renewable energy. HRM does not have the authority to execute contracts directly from wind providers.
Assess the risk of setting up a municipally owned energy utility with authority over power generation and/or energy purchase.	• Complete.
Consider co-sponsoring renewable energy projects with other NS municipalities that have better access to renewable resources (e.g. tidal projects in West Hants, Kings and Colchester).	• Not considered to be HRM mandate in 2012. Several municipalities in Nova Scotia have taken this approach. This should be investigated in the future.
Community Actions	
Biomass or MSW residuals for cogeneration plants or district heating	• There are a number of residual waste/energy from waste projects under consideration. However, the province is clear that waste is not biomass and therefore cannot be used for incineration projects.
Anaerobic digester (AD) plant for processing of organic ICI and septage waste.	• The council directed waste strategy review will include full business case development of the AD compost plant. • Need to determine how the business case is developing.
Utility size wind turbines independently or in cluster approach – and continue with the Wind Energy Master Plan process.	• Wind Energy Master Plan is complete.
Encourage installation of solar panels to heat process water in industrial processes such as breweries and dairies.	• Not HRM mandate.
Assess the feasibility for mini (run-of-the-river) hydroelectric plants on Musquodoboit River at Crawford Falls, Middle and Upper Musquodoboit, Sheet Harbour River at Malay Falls, Half Way Brook and Little West River.	• Not complete. • Run-of-the-river hydroelectric projects were eligible under Nova Scotia's COMFIT program. COMFIT is no longer available through the province. This could be considered as part of the new CEP.
Encourage natural gas conversion of industrial boiler plants including Capital District Health Authority, Dalhousie, SMU, DND and Olands.	• Not HRM mandate.
Assess potential for Harbour water cooling for buildings near the harbour.	• Completed for Alderney 5 Complex. Lots of potential. Similar to opportunity at Cogswell lands, this could be enabled through a bylaw for buildings that show a positive return investment as compared to the business as usual case.

Increase the allowable NSPI net-metering limit to 800kW.	• Not HRM mandate. • NSPI has an Enhanced Net Metering Program, which has an increased limit to 1 megawatt (MW) or 1000 kilowatts (kW) from 100 kW. Class 1 for customer-generators up to 100kW, Class 2 for 101 kW up to 1 MW. • Recent legislation changes with the current provincial government have recently reduced this from 1MW to 100kW. Implementation likely by end of 2016 or early 2017.
Goal 7: Educate and Engage the Community	
ACTION	**STATUS**
Community Actions	
Create recognition of the CEP by: • Well planned and timed launch campaign, website and opportunities for engagement throughout the process • Maintaining the CEP brand in future energy programs resulting from the CEP • Promoting the CEP and its concepts to NS at large • Continuing support and promotion of the Naturally Green campaign	• Not complete, except for continuing with the Naturally Green campaign. • Clean energy initiatives are messaged through the Energy & Environment office.
Work with the development and construction sectors to identify target markets for new education programs.	• Not HRM mandate.
Work with local industrial and institutional large consumers of energy to expand their commitment to reduce energy use, for example through: • An industrial energy conservation pledge • A coalition-building session organized by the Mayor and involving CEOs and top managers	• Not HRM mandate but could be included as community action in new CEP. Investigation could identify opportunities and help attract sector growth by reducing operational costs.
Work with local NGOs in promoting their educational programs, especially within schools.	• Ongoing working relationships with Clean NS, EAC, YNC, SENSE.

Encourage implementation of public awareness programs using creative strategies such as: • Displaying the "carbon footprint" of moving treated water to the users on the civic water bills • Neighbourhood canvassing program to promote EnerGuide • A large ad campaign on carpooling	• Idle-free campaign was conducted. • Climate Change mapping in Eastern Passage & Cow Bay. • RP+5 and Center Plan community engagement
Goal 8: Demonstrate Local Government Leadership	
ACTION	**STATUS**
Corporate Actions	
Implement all other Corporate Actions under all the previous 7 goals to clearly demonstrate HRM's commitment to "walk the talk".	• HRM has completed most of the corporate actions within its mandate, showing that we are walking the talk. HRM is progressive in GHG reductions work, energy efficiency measures and demonstrating the economic viability of these types of projects. • Focus needs to be addressed and initiatives need to be tied in with the goals to reduce greenhouse gas emission by 2020 to be 40% below 2008.
Use HRM's influence to lobby for the legislative priorities identified in the shortlist of actions in the Community Energy Plan, thus getting "our own house in order".	• HRM submitted comments for the EGSPA review. • HRM needs to actively promote opportunities and intervene at UARB hearings to be a leading voice.
Push for the municipal voice at the table in formulating Nova Scotia's Energy Strategy, particularly the formation of an Energy Advisory Committee.	• HRM was represented on the Demand Side Management (DSM) board at Efficiency NS. HRM has not been part of this board since 2015. • HRM has regular meetings with NS Energy and the NS Climate Change Directorate.