



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

Item No. 14.7.1
Halifax Regional Council
May 8, 2018

TO: Mayor Savage and Members of Halifax Regional Council

Original Signed

SUBMITTED BY:

Councillor Tony Mancini, Chair, Environment & Sustainability Standing Committee

DATE:

May 3, 2018

SUBJECT:

Federal Funding Opportunity: Low Carbon Economy Challenge

ORIGIN

Motion passed from the May 3, 2018 meeting of the Environment and Sustainability Standing Committee.

LEGISLATIVE AUTHORITY

Administrative Order 1 – Schedule 5

Sections 4(b) and 4(c) of the Environment and Sustainability Standing Committee - Terms of Reference:

4. The Environment and Sustainability Standing Committee shall:

.....

(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;...

RECOMMENDATION

The Environment and Sustainability Standing Committee recommends that Halifax Regional Council direct staff to submit Expressions of Interest through the Low Carbon Economy Challenge for the following projects:

- Alderney 5 Upgrades
- Scotia Bank Centre Waste Heat Recovery
- Dartmouth Sportsplex Cogen Plant
- Pool Filtration System Upgrades
- Landfill Gas Utilization at Otter Lake Landfill
- Halifax Organics Management and Long-Term Operating Contract RFP
- Cogswell District Energy System

BACKGROUND

The Environment and Sustainability Standing Committee considered the staff recommendation report dated April 6, 2018, at their meeting held on May 3, 2018.

For further information on the background of this item, please refer to the April 6, 2018 staff recommendation report (**Attachment 1**).

DISCUSSION

The Environment and Sustainability Standing Committee discussed the April 6, 2018 staff recommendation report at their May 3, 2018 meeting. Following the discussion, the Standing Committee approved the recommendation as outlined in the "Recommendation" section of this report. The Standing Committee also directed that the April 6, 2018 report, as well as the Standing Committee's recommendation, be forwarded to Regional Council for consideration at their May 8, 2018 meeting, due to the time sensitive nature of the request.

For further information on this item, please refer to the April 6, 2018 staff recommendation report (**Attachment 1**).

RISK CONSIDERATION

Not applicable.

FINANCIAL IMPLICATIONS

For further information on the financial implications of this report, please refer to the "Financial Implications" section of the April 6, 2018 February 21, 2018 staff recommendation report (**Attachment 1**).

COMMUNITY ENGAGEMENT

The meetings of the Environment and Sustainability Standing Committee are open to public attendance. A live webcast is provided of the meeting, and members of the public are invited to address the Committee for up to five minutes at the end of each meeting during Public Participation. The agenda, reports, and minutes of the Environment and Sustainability Standing Committee are posted on Halifax.ca.

ENVIRONMENTAL IMPLICATIONS

Refer to the April 6, 2018 staff recommendation report (**Attachment 1**).

ALTERNATIVES

Refer to the April 6, 2018 staff recommendation report (**Attachment 1**).

ATTACHMENTS

Attachment 1 – staff recommendation report dated April 6, 2018.

If the report is released to the public, a copy can be obtained by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: David Perusse, Legislative Assistant, Office of the Municipal Clerk, 902.490.6517



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

Item No. 12.1.2
Environment & Sustainability Standing Committee
May 3, 2018

TO: Chair and Members of the Environment & Sustainability Standing Committee

-Original Signed-

SUBMITTED BY:

Kelly Denty, Acting Director, Planning & Development

-Original Signed-

Jacques Dubé, Chief Administrative Officer

DATE: April 6, 2018

SUBJECT: **Federal Funding Opportunity: Low Carbon Economy Challenge**

ORIGIN

Staff initiated request to pursue a new federal funding opportunity for climate change mitigation projects.

LEGISLATIVE AUTHORITY

Administrative Order Number One, Schedule 5, Environment and Sustainability Standing Committee Terms of Reference

Section 4(c) states: "The Environment and Sustainability Standing Committee shall: (c) promote the achievement of the Municipality's greenhouse emission reduction commitments."

Halifax Regional Municipality Charter

Section 79(1) states, "The Council may expend money required by the Municipality for ...

- (y) furnishing and equipping any municipal facility;
- (z) acquisition of equipment, materials, vehicles, machinery, apparatus, implements and plant for a municipal purpose;
- (ad) a system for the supply or distribution of electricity, gas, steam or other source of energy;
- (al) wastewater facilities and stormwater systems;
- (am) water systems; and
- (an) solid-waste management facilities."

RECOMMENDATION

It is recommended that the Environment & Sustainability Standing Committee recommend that Halifax Regional Council direct staff to submit Expressions of Interest through the Low Carbon Economy Challenge for the following projects:

- Alderney 5 Upgrades

- Scotia Bank Centre Waste Heat Recovery
- Dartmouth Sportsplex Cogen Plant
- Pool Filtration System Upgrades
- Landfill Gas Utilization at Otter Lake Landfill
- Halifax Organics Management and Long-Term Operating Contract RFP
- Cogswell District Energy System

BACKGROUND

As part of the Pan-Canadian Framework on Clean Growth and Climate Change, the Low Carbon Economy Challenge (LCEC) has been created as one of the federal funding programs under the Low Carbon Economy Fund for projects that generate clean growth and reduce greenhouse gases (GHGs). The LCEC has two streams – Champions and Partnerships. Halifax Regional Municipality is eligible for the 450 million-dollar Champions stream.

An Expression of Interest (EOI) is required in order for the federal government to determine eligibility, and are due May 14, 2018. The federal government will then invite formal proposals for eligible projects, likely due this summer. The turnaround time for submitting an EOI is very short, as the LCEC was only launched mid-March.

The federal contribution to a successful project can range from \$1 to 50 million in eligible costs, and municipalities are required to contribute 40% of total project costs. The projects must be new projects that could not proceed without funding assistance. All costs must be incurred by March 2022.

Projects will be assessed based on the following criteria:

- Cumulative greenhouse gas emissions reduced per dollar of federal funding
- Greenhouse gas emissions reduced in 2030 per dollar of federal funding
- Project feasibility and risk
- Other benefits that contribute to clean growth and a clean environment.

Emission reductions must also be:

- Material (measurable and verifiable)
- Complementary to existing actions
- In-line with Canada's 2030 climate target
- Cost-effective

Eligible sectors include building retrofits, industrial energy efficiency, fuel switching and process changes, forestry, agriculture, waste, transportation retrofits, and energy production for own use. Complete program information can be found online at www.canada.ca/en/environment-climate-change/services/climate-change/low-carbon-economy-fund/challenge.html.

DISCUSSION

Staff proposes to submit LCEC Expressions of Interest for the following projects:

Alderney 5 Upgrades

The cooling load for the Alderney Gate offices and Alderney Library is currently supplemented by a seawater cooling and geothermal storage system. The geothermal system has been operating since 2011 and was originally designed to serve all areas of the Alderney Landing complex. This system needs to be upgraded and recommissioned to identify improvements to make the system run more efficiently and achieve further greenhouse gas reductions by offsetting higher cooling loads.

Scotiabank Centre Waste Heat Recovery

The Scotiabank Centre is the largest multipurpose facility in Atlantic Canada and home to the Halifax Mooseheads. The ice rink stays in place for most of the year, as it is simply covered for non-ice events. Refrigeration plants generate significant waste heat to maintain the rink ice. A waste heat recovery system could offset heating costs for domestic hot water, in-floor heating or snow melting.

Dartmouth Sportsplex Cogen Plant

Cogeneration is the generation of both heat and electricity onsite. The cogeneration process uses heat that is normally lost in conventional power plants. The Dartmouth Sportsplex can use this thermal energy to heat the building and hot water. The cogeneration plant will use natural gas, which is currently available to the facility. The Dartmouth Sportsplex mandate is to provide affordable recreational services. Cogeneration technology will provide operational savings. This project is in addition to, and will not interfere with, the renovations that are currently being carried out at the facility.

Pool filtration system upgrades

The filtration systems in municipal pools need to be upgraded. The regenerative media filter can remove particles as small as one micron, whereas sand filters remove particles as small as 20 microns. The system boasts up to 90% in water savings, 75% less space than a typical sand filter, 50% energy savings and 30% chemical savings.

Landfill Gas Utilization at Otter Lake Landfill

The Otter Lake Landfill extracts landfill gas (LFG) from each of its six closed cells, with each cell producing decreasing amounts of methane-containing landfill gas as the cell ages. When an open landfill cell can support it, LFG extraction is installed and the open cell is connected to the rest of the system. Once a landfill cell is closed it continues to generate landfill gas for several years, meaning LFG generation potential exists for as long as HRM landfills waste. HRM, Mirror NS, Heritage Gas and Dalhousie University are investigating the use of landfill gas at the Otter Lake Landfill, which is currently being flared to reduce greenhouse gas emissions. HRM could qualify for funding under the LCEC program for the capital required to upgrade and transport the gas produced by the landfill to offset Dalhousie's fossil fuel usage with a renewable natural gas. Other partners, such as Nova Scotia Power Inc., and energy transmission systems are also being considered for this project.

Halifax Organics Management and Long-Term Operating Contract RFP

Halifax Solid Waste has completed the RFQ phase for the procurement of HRM's future source separated organics processing facility, and a potential technology being put forward by proponents is anaerobic digestion. Anaerobic digestion breaks down food waste in the absence of free oxygen, producing a methane-yielding biogas. This renewable natural gas (RNG) can be upgraded and used to displace natural gas from fossil fuels, or offset coal usage in electricity generation.

Halifax Water – Cogswell DES

The Municipality has requested that Halifax Water explore the feasibility of a District Energy System (DES) in the Cogswell area, to be constructed in conjunction with the overall Cogswell redevelopment project. An Ambient Temperature DES (ATDES) was determined to be the most energy efficient and economical system. The Cogswell ATDES would transfer renewable thermal energy from the nearby Halifax Wastewater Treatment Facility's wastewater effluent stream to the new buildings to be built within the Cogswell redevelopment area, thereby offsetting the need to use other forms of non-renewable energy (e.g. oil, natural gas, electricity) and their corresponding greenhouse gas emissions for the purposes of heating and cooling.

Submitting EOIs keeps the window of opportunity open and allows staff to pursue formal applications for eligible projects. If, while preparing the formal proposals, it becomes clear that a project is not currently feasible, staff will not submit the proposal for that project.

FINANCIAL IMPLICATIONS

There are no financial implications associated with the recommendation in this report. Should the projects submitted under the Expression of Interest requirement be deemed eligible, and should one or more formal proposal be successful, the Municipality would be required to cost share at 40% of total project costs. The proposal and business case will return to Regional Council for funding approval.

Some funds will be required to submit formal proposals, as they require third party verification of greenhouse gas calculations. Some proposed projects will also need further feasibility assessment. These costs can be accommodated in the proposed 2018/19 budget.

RISK CONSIDERATION

There is no risk associated with the recommendation in this report.

COMMUNITY ENGAGEMENT

Community engagement was not required for the purposes of this report.

ENVIRONMENTAL IMPLICATIONS

There are no environmental implications associated with the recommendation in this report. Should the Municipality succeed in obtaining funding for one or more of the proposed projects, significant greenhouse gas reductions will be achieved. The reductions will help the Municipality achieve its greenhouse gas reduction targets and will save money in energy costs on an ongoing basis.

ALTERNATIVES

The Environment and Sustainability Standing Committee could choose not to approve this recommendation and the funding will not be pursued. This is not recommended, as HRM would be foregoing the possibility of receiving significant federal funding to do one or more projects that could not otherwise be undertaken.

ATTACHMENTS

None.

A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

Report Prepared by: Shannon Miedema, Energy & Environment Program Manager, 902.490.3665

-Original Signed-

Report Approved by: Peter Duncan, Manager of Infrastructure Planning, 902.490.5449

-Original Signed-

Financial Approval by: Jerry Blackwood, Acting Director of Finance and Asset Management/CFO, 902.490.6308
