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**Environment and Sustainability Standing Committee  
May 1, 2014**

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

Original Signed

**SUBMITTED BY:** \_\_\_\_\_  
Jane Fraser, Director, Planning and Infrastructure

**DATE:** March 11, 2014

**SUBJECT:** Solar City Pilot Program Update No. 3

**ORIGIN**

- December 11, 2012, Award and Initiation of Solar City Program, Regional Council
- May 2, 2013, Information Report: Solar City Update No. 1, E&S Standing Committee
- September 5, 2013, Information Report: Solar City Update No. 2, E&S Standing Committee

**LEGISLATIVE AUTHORITY**

HRM Charter, Part IV, Power to expend money, Section 79 (1) (ada) “The Council may expend money required by the Municipality for providing for, financing and installing energy-efficiency equipment on private property including, without restricting the generality of the foregoing, solar panels”

**RECOMMENDATION**

It is recommended that the Environment and Sustainability Standing Committee direct staff to prepare and present an evaluation report of the Solar City program.

## **BACKGROUND**

On December 11, 2012, Regional Council approved the launch of the Solar City Program, a program to encourage residents to adopt solar hot water technology that could be financed through a process similar to a Local Improvement Charge (LIC). Regional Council and the Environment and Sustainability Standing Committee have asked for periodic updates on the progress of the pilot program goals.

## **DISCUSSION**

The Solar City Program has just completed its first year of a two year pilot phase. The program has been operating successfully, accomplishing many significant administrative, communications and program deployment milestones.

### ***Program Success as defined against initial Council goals:***

Regional Council approved the initiation of the Solar City Program in December 2012. At that time, the goals of the Solar City Pilot Program was to answer the following unknowns:

- Is the program financially self-sustaining, without impacting the non-participating HRM taxpayer?
- Are residents participating in sufficient numbers to justify?
- Is the program cost effective for homeowners?
- Are installations of high enough quality and quantity?
- Is the program simple enough to administrate effectively in HRM?
- Are there any risks to the municipality or homeowners that cannot be addressed by contractual or program processes?

### ***Is the program financially self-sustaining, without impacting the non-participating HRM taxpayer?***

**Yes.** The \$8.17 million program is being managed through a dedicated project account that captures all external and internal costs as well as revenues. These include costs related to: administrating the program, staffing, marketing and communications, solar systems and options for individual homes, permitting, 3<sup>rd</sup> party consulting, and R&D partnerships with Dalhousie University, a small risk contingency, reporting to project co-funders (FCM and Efficiency Nova Scotia), taxes and financing costs. HRM Finance staff has reviewed program operations from the first year and the program is within the budget targets set.

### ***Are residents participating in sufficient numbers to justify?***

**Yes.** The development, launch and ramp up of the program presented many challenges in managing the expectations of participants while also ensuring a program of sufficient size to justify HRM involvement. In 2010/11 (pre-program launch), over 800 homes signed up on the first day of “registration”; after one month the registration was capped at 1,600 homes. Almost two years later the program was officially rolled out to the public. The list was initially reduced by approximately one third, due to a loss of interest, moving, or could not be contacted. This was not unexpected considering the long lead time to program deployment.

The program spent approximately the first six months in ramp up stage in 2013. Thermo Dynamics (and its sub-contractor Scotian Renewables) performed over 1,000 solar assessments on homes in HRM. Approximately 15% of these homes were screened out of the program for a variety of technical, economic or risk reasons. Over 200 installations were done in year one, with another 50 homeowners committed and awaiting installation for a total of 250. This is 500% more solar heating installed in HRM than ever before in a typical year. This is in spite of the fact that in prior years (pre-Solar City) there were significantly more rebates and incentives for homes. In the last year, more solar heating systems were installed in HRM through the Solar City Program than the rest of Canada combined.

Interest in the program remains at a very high level. Over 400 homeowners participated in the recent Solar Fiesta event on March 1, 2014, celebrating the first year of the program and over 800 new homes registered for the program in the first week of re-opening registration on March 3, 2014.

***Is the program cost effective for homeowners?***

**Yes.** The Solar City Program has deployed solar water heating technology for domestic water use. This targets approximately 20-25% of a home's overall energy bill. The size of solar systems and savings are highly dependent upon the hot water consumption in homes. A customized detailed feasibility report, that calculates the particular costs and savings, is provided to a homeowner prior to deciding to commit to a system.

The average total cost for a system, after all taxes and rebates are applied, is \$7,400. The average savings (2013 energy costs) per home participating is \$460/year and, over a 25 year life span, is over \$23,000 per home that reflects future energy cost increases. The Solar City Program has engaged the public in awareness on a life cycle costing approach and helps define savings through a return on investment (ROI). The average ROI for all homes is 9.2%.

As demonstrated by the level of participation, the program offers a cost effective method to adopt solar heating technology.

***Are installations of high enough quality and quantity?***

**Yes.** The prime solar contractor, Thermo Dynamics and their sub-contractors Scotian Renewables and Dr. Solar, have responded very effectively in ramping up resources. A back log of over 50 solar installations are currently in the queue; however, that is a natural outcome of the program design and this past winter's conditions, which were highly unfavourable to installations from December to February.

Feedback from the public has been very positive on the high reliability, professionalism and quality of work. There are no significant risks in the program with technical issues.

***Is the program simple enough to administrate effectively in HRM?***

**Yes.** The Solar City Program is the first of its kind in Canada. Although the municipality has extensive experience with administrating Local Improvement Charges (LICs), the application of

this financing tool on a per home basis and the delivery of a public energy program were all new to HRM. A significant level of program design has been worked out to maximize the benefits to residents, while minimizing any risks to HRM. The current staffing levels and administration of Solar City has been effective.

The administration costs are included in the program financial recoveries. Overall program administration costs are 6.4%, which benchmarks very well with similar programs. The 6.4% total administration costs are comprised of marketing and communication (0.5%), dedicated full-time program staffing costs (3.7%), 3<sup>rd</sup> party consulting and R&D partnerships with Dalhousie University (1.2%), a small risk contingency (0.5%), and the costs of reporting to program co-founders (0.5%).

***Are there any risks to the municipality or homeowners that cannot be addressed by contractual or program processes?***

**No.** As the program has rolled out the perceived and real risks have diminished. There are several elements in the design of the program that have been effective in diminishing these risks to the municipality, including the assessment/screening process, financial eligibility criteria, and agreements with contractors and homeowners.

**Fit with Community Energy Plan?**

In addition to the fundamental questions on program success, is how does Solar City fit in the context of the 2007 Community Energy Plan (CEP) adopted by Regional Council? It would appear Solar City fits well with the goals and outcomes articulated.

**2007 Community Energy Plan Goals**

**Expected Outcomes**

<ul style="list-style-type: none"> <li>• Improve the energy efficiency of buildings</li> <li>• Increase transportation choice and efficiency</li> <li>• Increase industrial energy efficiency</li> <li>• Encourage energy efficient land use planning and neighbourhood site planning</li> <li>• Increase efficiency of infrastructure</li> <li>• Increase energy security and diversify energy supply</li> <li>• Educate and engage residents and businesses</li> <li>• Demonstrate local government leadership</li> </ul>	<ul style="list-style-type: none"> <li>• Greater awareness and appreciation of energy by HRM staff and the public</li> <li>• Greater participation and partnering among HRM, other levels of government, and private industry to reduce energy consumption</li> <li>• Greater energy efficiency in new and existing buildings</li> <li>• Greater demand for energy efficient products</li> </ul>
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**Next Steps: Evaluation and Recommended Long Term Options**

***Evaluation:***

It is recommended to prepare a final evaluation report of the Solar City program’s pilot phase over the next several months. The evaluation report would summarize the financial and environmental impacts of the program to the municipality, residents and industry. The report would also include metrics informative to funding partners such as FCM and Efficiency Nova Scotia (eg. social benefits, lessons learned).

***Recommending Long Term Options?***

The current pilot phase of the program is scheduled to run until February 2015. In light of providing a seamless transition for managing public expectations, the impact on the solar industry, and the impact on HRM staff, a decision on whether Solar City should be continued or not needs to be taken in the Fall of 2014.

Depending upon the final pilot evaluation report, HRM Energy and Environment and Finance staff will work on a detailed analysis of the program and funding options, and future technology iterations with the goal of presenting recommendations to Regional Council late this year.

**FINANCIAL IMPLICATIONS**

Preparation of an evaluation report of the Solar City program can be accommodated in the current approved Operating budget.

**COMMUNITY ENGAGEMENT**

There has been extensive community engagement within the Solar City Program. Nine open houses have been held over the last year with over 500 people attending. The recent Solar Fiesta event attracted over 400 people. There is also extensive engagement with the public through web, social media and email. More information can be found at [www.halifax.ca/solarcity](http://www.halifax.ca/solarcity).

**ATTACHMENTS**

None

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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.

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