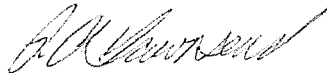


**Environment and Sustainability Standing Committee**  
**December 1, 2011**

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

**SUBMITTED BY:**



Phil Townsend, Director, Planning & Infrastructure

**DATE:** October 19, 2011

**SUBJECT:** Solar City – Solicitation Approval

**ORIGIN**

- October 25, 2010, Energy and Underground Services Committee: Community Solar Project
- November 2, 2010, Regional Council Recommendation Report: Community Solar Project
- February 8, 2011, Regional Council Recommendation Report: Community Solar Project
- September 8, 2011, Environment and Sustainability Committee Info Report: Contractual Update

**RECOMMENDATION**

It is recommended that Halifax Regional Council:

1. Direct staff to issue a competitive Request For Proposals (RFP) for the supply and installation of solar hot water panels and consulting services for the Solar City Initiative;
2. Direct staff to finalize a contribution agreement with the Province of Nova Scotia to support the Solar City Initiative development and implementation and increase the sustainability Communities Reserve (Q127) by the corresponding amount (approximately \$50,000); and
3. Using the principles approved in the February 8, 2011, recommendation by Regional Council, direct staff to:
  - 1) finalize the business case; and
  - 2) undertake a full analysis of the financial, technical and contractual risk in parallel to the RFP process.

## **BACKGROUND**

On February 8, 2011, Regional Council directed staff to:

1. Accept the results of the community consultation efforts and conclude that: residents support this project and further work on this project requires on-going industry consultation;
2. Direct staff to investigate and apply for funding, grants, loans, and rebates required to proceed with a financially viable community solar project; and
3. Accept the principles and conditions used to develop a financially viable business model, as outlined.

Over the last 8 months, Halifax Regional Municipality (HRM) staff has progressed the assembly of the business case and financial model for Solar City. The initial financial assumptions in the project concept are generally consistent with today's current model (costs, savings, grants/rebates available). In order to proceed further with the business case development, actual industry costs (that confirm the economic benefits from the scale of the initiative) need to be validated through a competitive solicitation.

Economic development, community engagement, and environmental lenses are also being used to assess the Solar City initiative merits, and continue to be refined. These benefits, although significant, for the most part are looked at as secondary benefits of the initiative and are not part of the business case, as the direct cost/benefits/risks to the municipality and homeowners are easier to quantify.

As previously outlined, some of these external spin-off benefits include:

- over 75,000 person hours of employment;
- 30-40 new green collar jobs;
- \$250-\$700 in annual savings per resident;
- reducing 2,000 tonnes of CO<sub>2</sub>e/year;
- the pilot proving out a strategic financing mechanism for future sustainable energy opportunities (i.e. increased residential energy efficiency, natural gas distribution, increased use of other renewable technologies); and
- branding of HRM as Canada's first Solar City.

## **DISCUSSION**

### **Risk Analysis:**

HRM staff has been working on designing a program that reduces the financial, technical and contractual risks to the homeowner and the municipality. A great deal of these risks are well understood from direct experience. HRM staff has been exploring the options regarding how these risks should flow through to the industry partners through contractual arrangements. HRM

has had productive dialogue and collaboration with industry over the last eight months. Staff is confident that a contractually, low risk procurement is possible. A risk management and analysis has been initiated, and will continue to be refined and updated through the project development, implementation, and post construction phases (see Attachment 1).

Due to the complexity of the RFP and risk management measures to be put in place, it is likely that there will be an extended procurement phase. There is a desire to most likely partner with two or three companies to implement the initiative. This will also create a need to harmonize the contractual agreements (so there is consistency in costs and quality to homeowners regardless of supplier). **The RFP and contract development is anticipated to be up to 6 months in duration.**

#### **Business Case Development:**

The costing from industry is a key input into the business case. As discussed in prior reports, there are also multiple funding partners for the project (Federal, Provincial, Federation of Canadian Municipalities (FCM), etc.). Due to timing issues (in particular with FCM and other Federal sources), staff has not filed any formal Federal funding applications. When these are filed and approved, they will also have a significant positive impact on the business case. The Province of Nova Scotia continues to be very supportive of the Solar City initiative. Beyond the legislative amendments they have already enacted, the Department of Energy has committed to assist in further development and implementation costs as attested by the letter of support from Minister Charlie Parker (Attachment 2).

In developing the pilot project business case, staff is also balancing an objective that the initiative can be run sustainably over the long run. These funding partners can significantly reduce or eliminate any financial risk of the pilot to the municipality, and lower costs to the homeowner. However, it would be considered a failure to have a successful pilot underwritten by low interest financing and grants but not be able to make a case beyond the pilot phase.

Staff is recommending that the business case and funding partner agreements continue to be worked on in parallel to the RFP procurement. A future recommendation report will include the award to the successful proponents and the finalized business case with budget impacts.

#### **The current timeline for the project is:**

##### **Items Completed**

- November 2010: Regional Council directed staff to look at the Solar City concept;
- December 2010: Consultation, Province of Nova Scotia Adopted Enabling Legislation;
- February 2011: Staff presented results of Consultation, initial Business Model and Regional Council approves guiding principle;
- May 2011: An Industry Expression of Interest was issued, and over the summer staff held several joint collaborative industry meetings; and
- September 2011: E&S Committee updates on Solar City developments (financing, industry).

**Items to be Completed**

- November 2011: Launch RFP procurement for Industry partners (suppliers/installers/ 3<sup>rd</sup> party quality control);
- February 2012: Secure financing partner commitments;
- March 2012: HRM Regional Council award of contracts to vendors and approves updated Business Model;
- April 2012: Industry and HRM ramp up of program and initiates screening criteria;
- May 2012: Suitable installations commence and homeowners sign agreements;
- Summer 2013: Pilot program assessment reported to HRM Regional Council; and
- Fall 2013: Pilot program installations completed.

There is one more key decision point for Regional Council:

- March 2012: Approve final Business Model and funding and RFP award: this is a Go/No Go decision

The RFP will clearly stipulate that the awarding of a contract is fully dependent on:

1. Successful external funding and financing;
2. Acceptance of the final offering by the required number of homeowners; and
3. Regional Council satisfaction of the final business model including the level of financial, technical and contractual risk.

**Principles adopted February 2011 for developing a viable HRM Financial and Business Model:**

- User pay;
- No costs borne by general taxpayer;
- Financially self-sustaining;
- Priced such that there is a reasonable contribution to either the Energy Efficiency or Sustainable Communities Reserve to act as seed money for future projects and act as a risk reserve;
- Priced such that the energy savings justify the homeowner's annual payment over a reasonable and acceptable term;
- That overhead/administrative costs are fully recaptured;
- That HRM is successful in an application to the FCM Green Municipal Fund (GMF) for a \$5 million low interest loan and an additional grant, or comparable from another funding agency;
- That HRM is successful in securing minimum grants and rebates required to provide a viable business model; and
- The supply price received from vendors is within the range needed to make the program financially viable.

The project is being established in a similar concept to the Energy and Underground Services Reserve and Sustainable Communities Reserve, which have enabled significant HRM progress in corporate Energy and Environmental initiatives without impact on the general tax rate.

### **BUDGET IMPLICATIONS**

There have been no external consulting costs incurred to date.

Costs to complete the Recommendations within this report will be funded from the Provincial contribution. It is not expected that further development costs will exceed \$50,000 prior to the targeted March 2012 final approval of the Solar City initiative by Regional Council.

There may be budget implications related to financial, technical and contractual risks, however, these will not be fully known until the final business case and RFP process is completed. Any budget implications as the result of financial, technical and contractual risks will be fully articulated in the Regional Council report seeking final approval and may include additional recommendations and/or options.

### **FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN**

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

### **COMMUNITY ENGAGEMENT**

There has been extensive community and industry engagement on this project as per the discussion section.

### **ALTERNATIVES**

1. Wait until all funding partners have been confirmed. The FCM GMF has been closed since February 2011, and is not accepting new applications until December 2011. Similar issues exist with other Federal funding partners. This approach would delay the Solar City Initiative by another year; or
2. Regional Council may wish to direct staff to include the Solar City Initiative within the 2012-13 budget process. The budget implications of providing solely municipal financing at 4.5% for the \$8M pilot are unknown; or
3. Regional Council may wish to direct staff to cease investigating this project.

**ATTACHMENTS**

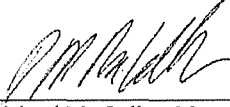
Attachment 1: Risk Management Analysis Solar City


Attachment 2: September 30, 2011 letter from Minister of Energy Charlie Parker to Mayor Kelly

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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.

Report Prepared by: Julian Boyle, P.Eng., Manager Strategic Energy Policy and Initiatives, 476-8075

Report Approved by:   
Richard MacLellan, Manager, Energy & Environment, 490-6056

Financial Approval by:   
James Cooke, CGA, Director of Finance/CFO, 490-6308

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## Solar City Risk Management Analysis

Updated: October 20, 2011

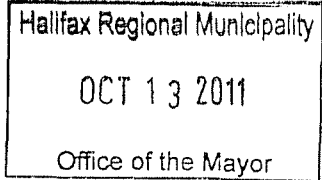
#	Project Phase	Assumptions	Key Risk Identified	Probability	Impact	Mitigation Strategies	Division	Name	Action Item	Status			
1	Development	HRM can source sufficient funding.	Insufficient financing (grants/low-interest loans) from federal and/or provincial sources, leading to a stalled project.	Medium	High	Have multiple funding partners (provincial and/or federal and/or FCM).			Yes	Open	3	6	18
2	Development	Sufficient local industry capacity expertise for program.	Insufficient local capacity or expertise, leading to poor quality and/or delayed installation. This may lead to dissatisfied homeowners and damage to HRM's reputation.	Medium	Low	Meetings with industry, NSCC and the province to help evaluate capacity and ability to deliver ramp-up strategy. Implement contract language flexibility regarding quantity of work (i.e. 'standing offer' contracts).			Yes	Open	4	2	8
3	Development	Sufficient and qualified HRM staff during development stage.	Insufficient HRM staff exists during development, leading to less than bullet-proof business case, delayed implementation, termination of program and/or damaged HRM reputation.	Medium	High	High enough corporate importance to ensure sufficient staff. Other mitigation approach is to outsource delivery of program.			Yes	Open	4	6	24
4	Construction	Sufficient and qualified HRM staff during implementation period.	Insufficient HRM staff exists during implementation, leading to improper contract administration, dissatisfied homeowners and damaged HRM reputation.	Medium	High	Incorporate administration costs into business case. Incorporate third-party contracting assistance.			Yes	Open	3	6	18
5	Construction	Sufficient local industry capacity expertise for program.	Insufficient local capacity or expertise, leading to poor quality and/or delayed installation. This may lead to dissatisfied homeowners and damage to HRM's reputation.	Medium	High	Can limit number of installations through reduction of size of pilot program. Contracts to have a performance bond. HRM can hire additional contractor(s).			Yes	Open	4	5	20
6	Construction	Contractors will perform work with due diligence and the utmost concern for safety.	Contractor(s) and/or homeowner(s) are injured during installation procedure.	Low	High	Contractors must ensure that homeowners are not too close to the working area. Contractors will possess insurance coverage for these potential issues.			Yes	Open	2	6	12
7	Construction	Contractors will have sufficient insurance coverage.	Actual insurance coverage obtained is insufficient resulting in exposure of HRM to costly claims in case of incident(s).	Low	High	Ensure contracts transfer risk to contractor's and/or homeowner's insurance policy, as they are normally responsible for accepting this type of risk.			Yes	Open	1	5	5
8	Construction	Costs agreed upon in contracts include all necessary materials and labour for turnkey systems.	Actual installation and/or commissioning costs exceed estimates.	Medium	Medium	Contracts will be based on an average cost per installation. As per signed contracts, any budget surplus or deficit (per installation or overall) is the responsibility of the contractors. HRM can hire additional contractors. Well defined screening criteria will limit contractor exposure.			Yes	Open	3	3	9
9	Construction	Contractors will deliver on contractual commitments. This is critical in order to preserve HRM's reputation and ensure client satisfaction.	Suppliers and/or contractors may not meet deadlines as set out in the contracts.	Medium	Medium	Choose only experienced professionals to undertake installations through the RFP process. Include a performance bond in contract structure. Work closely with contractors to ensure construction timelines are on track. Communicate progress to all stakeholders. Third party validation of QC. Streamlined and consistent design and permitting processes.			Yes	Open	3	3	9
10	Construction	Predictable federal and provincial funding.	Changes to federal and/or provincial budgets leads to changes in homeowner's costs.	High	Low	Disclosure to homeowners and HRM best efforts to mitigate. Compress timeline from homeowner signing contract to completing installation.			Yes	Open	5	2	10
11	Construction	Contractors will undertake necessary assessments prior to undertaking any work in order to identify and address potential issues that may arise.	Damage caused to home as a result of incorrect installation and/or operation of solar thermal system (i.e. structural damage to roof and/or water damage, wiring, etc.).	Low	Medium	Transfer risk to contractor's and/or homeowner's insurance policy, as they are normally in a position to accept this type of risk. Implement rigorous screening criteria in partnership with independent third party validation.			Yes	Open	2	4	8
12	Construction	Contracts will be signed with reputable, financially sound companies.	Contractor(s) go bankrupt and fail to meet contractual commitments, resulting in financial liability for HRM.	Low	Medium	Rigorous RFP selection process. Include performance bond for labour and material in contracts.			Yes	Open	2	3	6
13	Post-construction	Sufficient contract administration HRM staff during one-year warranty period and HRM Finance billing staff during multi-year collection period.	Insufficient HRM staff exists, leading to dissatisfied homeowners and damaged HRM reputation.	Low	Medium	Incorporate administration costs into business case.					1	3	3
14	Post-construction	Contractors will deliver on contractual commitments during operation phase. This is critical in order to preserve HRM's reputation and ensure client satisfaction.	Suppliers and/or contractors may supply and/or install systems of inconsistent quality, or not be around to provide support during warranty phase and beyond. This could negatively impact solar system's performance and HRM's reputation.	Low	Medium	Develop a procurement process that emphasizes performance risk minimization as a key element of awarding contracts. Limit the number of initial installations with each contractor until those projects are commissioned. Have third party QC processes in place in order to identify and address issues before they become widespread. Development of a project management handbook including quality control standards, best practice tools, checklists and templates.			Yes	Open	2	4	8

#	Project Phase	Assumptions	Key Risk Identified	Probability	Impact	Mitigation Strategies	Division	Name	Action Item	Status			
15	Post-construction	Homeowners will pay for solar systems.	Homeowners do not pay bill for solar system, creating financial liability for HRM.	Low	Low	HRM has already secured legislative authority for first lien rights. As part of eligibility criteria, applicants must pass a screening test component that ensures their credit standing is acceptable. The probability and impact of this risk is low because approximately 1000 households will be involved - this reduces risk through diversification because of the slim chance that many homeowners will concurrently miss payments.			Yes	Open	2	2	4
16	Post-construction	Homeowners will recognize the value and benefits of solar hot water systems.	Homeowners will not be aware whether or not the solar system is operating correctly.	High	Medium	Systems will be professionally designed and installed. Installers will provide training to homeowner. An optional metering solution will be developed to educate the homeowner.			Yes	Open	5	3	15
17	Post-construction	Homeowners will recognise the value and benefits of solar hot water systems.	Some homeowners will not be aware of the intricacies of solar system operation and expect more than the system can deliver, thus potentially harming HRM's reputation and requiring performance evaluation and/or servicing.	High	Low	Education and awareness integrated throughout entire process. Scale will allow others to learn from each other.			Yes	Open	5	2	10
18	Post-construction	Homeowners will recognise the value and benefits of solar hot water systems.	Construction and/or financing costs are too high, thus potentially harming HRM's reputation.	Medium	Medium	Creation of bullet-proof business case and full disclosure to homeowners.			Yes	Open	3	4	12
19	Post-construction	Homeowners will recognise the value and benefits of solar hot water systems.	Savings too low, thus requiring performance evaluation and/or servicing and potentially harming HRM's reputation. Worst case scenario of default by homeowner.	Medium	Medium	Educate homeowners about limitations of solar system and reasonable expectations. An optional metering solution will be developed to educate the homeowner. Rigorous screening criteria and QC set out in the tendering process and applied by contractor, HRM and third party. Homeowners will be responsible for operation and maintenance costs, with exception of one-time five year follow-up. HRM will not assume liability for performance of systems.			Yes	Open	3	4	12





**Energy**  
Office of the Minister



Suite 400, 5151 George Street, PO Box 2664, Halifax, Nova Scotia, Canada B3J 3P7 • Telephone 902 424-7793 Fax 902 424-3265 • www.gov.ns.ca/energy

September 30, 2011

Mayor Peter Kelly  
Halifax Regional Municipality  
PO Box 1749  
1841 Argyle Street  
Halifax, NS B3J 3A5

Dear Mayor Kelly:

Re: Solar City

The purpose of this letter is to confirm the Province's support for HRM's Solar City project. This is an exciting opportunity for the Province and HRM to work collaboratively to develop cleaner energy sources in the province. This project provides many potential benefits for Nova Scotians and addresses in an innovative manner, the need for increased sustainable energy for residential consumers.

Implementation of the Solar City project positions HRM as a leader in Canada for providing an innovative costing arrangement for the public. HRM's on bill financing program which covers all upfront costs for homeowners to install solar water systems and arranges all of the government rebates and installers is an example of innovation at its best.

The Solar City project aligns with our objectives for cleaner energy. For example, our Renewable Electricity Plan commits the Province to a clear legal requirement of 25 per cent renewable electricity supply by 2015, using made-in-Nova-Scotia sources and 40% by 2020, including regional electricity supplies. By supporting the Solar City Project we are also supporting cleaner energy supplies for water heating and embarking, with you on an exciting path of understanding how your model could eventually be used for other sustainable energy investments.

We are looking forward to seeing how barriers to using solar hot water can be reduced by using the on bill financing and reliable installers' features of the program. These unique incentives will contribute to the project's success and the results will be valuable in considering future projects. The Government of Nova Scotia is committed to this project and will support 1000 installations for your solar hot water program.

Mayor Peter Kelly  
Halifax Regional Municipality  
Solar City  
September 30, 2011  
Page 2

We are prepared to draw up a contribution agreement outlining this support. Please have your officials work with our staff to discuss the details and structure the agreement. The main contact for the Nova Scotia Department of Energy is Bruce Cameron, Executive Director, Sustainable & Renewable Energy (ph: 424-2288 or [cameronb@gov.ns.ca](mailto:cameronb@gov.ns.ca) ). We are strong supporters of this program and look forward to working with you.

Yours sincerely,

A handwritten signature in cursive script that reads "Charlie Parker".

**Charlie Parker**  
**Minister**