



May 20, 2014

Ottawa Renewable Energy Co-op

Presentation to City of Ottawa Environment Committee – Consultation re Climate Change Action Plan

By Johan Hamels (Treasurer) and Keith Shackleton (Secretary)

Background: OREC was incorporated in 2010 as a Renewable Energy Co-operative, to allow Ottawa residents to invest in clean energy through the Feed-In Tariff (FIT) program of Ontario's Green Energy Act. We are explicitly a 'for-profit' co-op but our activities are mostly volunteer-driven. Profits go to our investor-members. We have chosen, as stated in our bylaws, to limit our membership to residents of Ottawa and our projects are all located within the city.

We recently closed our second preference share offering, having achieved our target. To date, we have raised approximately \$2.25 million in investments, contributed by approx. 170 of our members, of whom we now have over 270 in total. These funds have been used to purchase five 10 kW “MicroFIT” solar installations on 3 housing co-ops and on OCISO non-profit housing. In addition, we have purchased a 50% share in a 250 kW solar generator situated near Dunrobin in rural Ottawa. Our newest project, a 75 kW installation, is currently under construction on Samuel Genest High School in the Overbrook neighbourhood. You are cordially invited to attend our project launch there on June 5, at 3 PM.

In the short life of our operations, OREC has produced approximately 178 megawatt hours of green electricity, thereby displacing approx. 123 metric tons of CO<sub>2</sub>.

Comments: We support the comments of other presenters—the city's Climate Change Action Plan is a good step forward to address the urgent matter of climate change; however it lacks the needed urgency and specific wording re actions and targets. We commend the actions of those councillors who have raised specific questions about these targets and actions.

Our experience with regard to support from the city has been mixed:

- We are appreciative of the support provided by the Council in endorsing local FIT applications. We hope this will bring forth good results if and when the 3<sup>rd</sup> round of FIT applications are approved by the Ontario Power Authority (OPA).
- Our past experience with building and legal personnel has not been particularly positive. In discussions with community associations who were keen on having solar installations on their community centres, the number and complexity of technical and legal hurdles presented by city staff effectively killed those initiatives.
- It is imperative that the city's initiative to address greenhouse gas and climate change policy incorporate the building/construction bylaw/permit personnel. It is disappointing that this consultation meeting did not include people from these sectors of the city bureaucracy. The

integration of practical, building code/bylaw details is critical to the success of the renewable energy sector and by extension a successful Ottawa Climate Change Action Plan

- One specific matter that has already been raised by Councillor Chernushenko is the city's requirement of anchoring solar generators to roofs. A more detailed report relating to our Samuel Genest installation is attached as an Appendix. In brief, the Ottawa requirement (which other municipalities do not have) for the solar arrays to be anchored through the roof adds significant cost—unintentionally, but effectively, an unnecessary 10% surcharge—as well as delays to projects, and in many cases it becomes a show-stopper because roof owners refuse to have their roofs penetrated. We hope that hurdle can be promptly addressed and removed.

Further comment: With the impending Ontario election, the future of the FIT program is unclear. Announcement of approvals on the FIT 3 proposals (which were submitted in November and were scheduled to be announced in May or June), has been postponed until after the election. We believe the Green Energy Act has put Ontario in a good position to benefit from green energy technology, but that progress could now be lost.

If the FIT program continues, OREC would like to engage in further discussions with city staff responsible for buildings—specifically, but not limited to, community centres—with a view to using city-owned roofs for OREC-funded solar installations. We would also like to discuss collaboration with Energy Ottawa on projects which they have submitted or may submit in future.

If FIT does not continue, where will that leave the future of OREC and the impetus for renewable energy? Our existing contracts are guaranteed for 20 years, but we want to grow and expand local clean energy production. We are considering a number of options, including net metering. Net-metering allows production of energy on-site to reduce the power requirements for that building. It is not financially attractive for small buildings, but in future, as energy costs increase, net metering on larger buildings may be attractive.

In summary, OREC constitutes a significant number of Ottawa citizens who are financially and ethically committed to clean renewable energy. In advancing a Climate Change Action Plan, there may be mutual benefits of collaboration between the city and OREC.

The most immediate request is that the city revise its 'anchoring' requirements for solar installations. This will have an immediate and positive impact on the local solar market, immediately encouraging jobs, investment and greenhouse gas reductions.

A second immediate request is to have the city staff examine with OREC how projects on city-owned (or supported) property could be encouraged.

Appendix to OREC Submission to Ottawa Climate Change Consultation, by SolPowered staff

The need to install seismic anchors on roof top solar PV systems in the City of Ottawa is putting an additional toll on the already complex process of developing commercial solar projects in the City. Depending on the top surface and structural composition of the roof layers, the cost to core through these layers, fit the anchor into place and then reseal the roof surface can easily cost upwards of \$1,000 per anchor (\$500 for the materials and \$500 for the installation). To add, depending on the roof composition and the type of anchor that's required, access from underneath the roof is sometimes required to position a back-plate that attaches to the anchor by bolting it through the roof layers. The bottom line is that many solar energy developers must budget a considerable fraction of the project cost (approximately 10%) towards the roof anchors that are required by the City, and this greatly puts at risk the economic feasibility of many projects that would otherwise provide a healthy return on investment.

In the case of the 74kW AC solar energy system that is currently being installed on the Collège Catholique Samuel-Genest, meeting the anchoring requirements was arguably the biggest challenge during the project installation. Solar panels were installed on both the main building with a concrete deck roof as well as on the recently added annex with a steel deck roof, and amount to a total of 38 anchors that were required. 20 of these anchors had to be positioned on the concrete deck and required access from underneath the roof for installation of a back-plate. Many of the anchoring points were situated over classrooms and an amphitheater, making several of the locations difficult to access and only after hours. There were added complications due to the presence of asbestos in the ceiling in many of the areas which was planned for removal in the summer, so approximately 50% of the anchoring work will only be done at a later date, after the system is operational, thereby causing additional cost impacts due to the temporary placement of additional ballasts and the additional work related to installing the anchors on an operational system (temporarily disconnecting parts of the system and removing panels and racking) during the peak energy generation period.

It is estimated that the total cost for the materials and labour for the anchoring plan is upwards of \$42,000 (out of a \$415,000 project). This excludes the time and money spent by the EPC developer, structural engineering firm, contracted racking/panel installer and the school board to help develop a solution to meet the anchoring requirements. This also excludes all of the extra costs (not accounted for yet) related to circumventing the asbestos issue, the extra costs for the anchoring work on an operations system nor the energy generation lost during this estimated 2-week period.

It is also important to note that NO other municipality in the region is requesting anchors to be included in the design of flat rooftop solar systems. In fact, throughout the world, the vast majority of flat rooftop solar systems rely on ballasts alone to hold down the equipment.

Finally, one of the largest impediments to the adoption of solar systems for landlords is the thought of their roof being pierced in multiple locations, thereby increasing the likelihood to have issues with the roof system which can not only cause leaking issues but will also void the warranty from the roofing contractor. In most parts of the world including all municipalities surrounding the City of Ottawa, solar energy developers can reassure landlords that their roof systems will not be damaged (no piercings) and that their roofing contractor will maintain their warranty. Unfortunately, this is not possible in the City of Ottawa and this is the second most popular reason, after a poor return on investment, for a landlord deciding not to move forward with an investment in a solar energy system on his or her rooftop.

Eliminating this requirement would therefore eliminate this roofing liability concern and significantly reduce the capital costs thereby increasing the return on investment to be in line with the rest of the region which, one should note, has seen a higher penetration rate of rooftop solar energy projects.