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Saturday, November 4, 2017

His Worship Mayor Charlie Clark and Members of Council
222 3rd Avenue North
Saskatoon SK S7K 0J5

Your Worship and Members of Council,

On behalf of the Saskatchewan Environmental Society, I would like to ask for permission to address the Standing Committee On Environment, Utilities and Corporate Services with respect to agenda item 7.2.7 (Facilitating Solar Energy Opportunities in Saskatoon).

We have prepared written comments in response to the report from Environmental and Corporate Initiatives on this agenda item. We hope these are helpful to you.

Thank you for the opportunity to address members of the Standing Committee.

Sincerely,

Peter Prebble, Board Member



Saskatchewan Environmental Society Observations on the Administration Report: Facilitating Solar Energy Opportunities in Saskatoon

- 1. The Saskatchewan Environmental Society wishes to commend the Environmental & Corporate Initiatives staff for the report that has been prepared on facilitating solar energy deployment opportunities in Saskatoon.**
- 2. The report you have received from Environmental and Corporate Initiatives staff identifies that there is potential for rooftop solar installations on 70 City owned buildings, with best prospects including fire halls, the Farmers Market, the J.S. Wood and Mayfair libraries, and the Vic Rempel Yards. The Saskatchewan Environmental Society urges City Council to move forward with plans for solar installations on these 'best prospect' City owned buildings, either through direct City investment or through partnerships with energy service companies, local community co-ops or local small businesses.**
- 3. The Saskatchewan Environmental Society strongly supports the concept proposed in the report of deploying solar technology on rooftops, on vacant city land, and on undeveloped land that has little or no other ground development opportunities.**

We are also very enthusiastic about Saskatoon Light and Power's proposal to develop a 1 Megawatt solar power plant on undeveloped land adjacent to Circle Drive.

- 4. The Saskatchewan Environmental Society strongly supports suggested changes to municipal planning approaches identified in Attachment # 3, including policies to achieve maximum solar access through improved subdivision layout, and better street and building orientation, a temporary feed-in-tariff program, and pilot projects to enhance grid infrastructure to become more solar compatible.**
- 5. The Saskatchewan Environmental Society agrees with the 6 barriers to the adoption of solar installations that have been identified in the Environmental and Corporate Initiatives report (see page 3 of 6). We also support the suggestions made in the report for overcoming these barriers including a City-led public awareness program on the potential of solar energy, the waiving of building permit costs for solar installs (as Calgary and Toronto have done), the use of virtual net metering to overcome solar access problems, and the streamlining of grid interconnection times.**
- 6. We would like to draw Council's attention to two additional barriers to solar power adoption not identified in the report.**



The first is the **lack of protection of solar access for building owners in Saskatoon**. Ideally, solar access for all building owners who own solar systems would be protected through a new City bylaw.

However, we recognize that this will not always be easy to do. When protection of solar access is not feasible, then **at the very least our City needs a bylaw that provides fair compensation in circumstances in which one building owner blocks another building owner's solar power production**. (This will happen primarily because of new construction or major additions to existing buildings). We think the financial responsibility for compensation should rest with the building owner who has blocked their neighbour's solar access (and therefore sharply diminished their neighbour's ability to generate electricity from their solar panels), but **the City of Saskatoon needs to develop a bylaw on this matter and play an enforcement or mediation role to ensure fair compensation is paid. Without Saskatoon City Council putting some form of protection in place, many building owners will be hesitant to invest tens of thousands of dollars in a solar installation.**

The second barrier we wanted to draw Council's attention to is the problem of **insufficient rooftop strength to handle the additional weight of solar panels**. We have been surprised to be regularly running into situations in Saskatoon where roofs on brand new buildings cannot handle the additional weight of solar panels. **We encourage Saskatoon City Council to change the building code to ensure that in the future all new buildings constructed in Saskatoon have sufficient rooftop strength to handle a full solar installation.** In addition, it would be helpful if new buildings were wired to be able to easily accommodate rooftop solar in the future.

7. As Council plans for a scale-up of its own investments in solar power and tries to facilitate citizens investing in solar power, **we encourage Council to support the adoption of good environmental criteria for the selection of solar panels**. There are a wide variety of solar panels available in North America, and **there are very significant variations in panel quality**. For instance, some solar panels are not recyclable, whereas others are. Some are sourced with conflict minerals, whereas other manufacturers are very careful to avoid this practice. Some panels have unacceptably high levels of hazardous materials; in other cases manufacturers have diligently minimized the use of hazardous materials. Some panels are not manufactured in safe working conditions, whereas in other circumstances workplace conditions are of very high quality. We urge Council to be discriminating in its selection of solar panels and to encourage Saskatoon citizens to follow a similar practice. **There is usually a small additional marginal cost in making a good selection.**
8. We wish to return to the topic of addressing barriers to solar installations, and focus on **what we consider to be the two most significant barriers to widespread solar power installation: up-front capital cost and the structure of the current electrical rate**



classification system.

9. On the matter of addressing the problem of up-front capital cost, **the Saskatchewan Environmental Society supports the Environmental & Corporate Initiatives proposition that the City should help property owners with the financing of solar equipment purchases.** We endorse the report's suggestion that this could be done by way of a special assessment that property owners could have the option of adding to their annual property tax.
10. The Saskatchewan Environmental Society urges Saskatoon City Council to make strong representation to the Provincial Government to amend the Cities Act in such a way as to allow municipalities to levy a special property tax assessment to assist building owners with solar panel acquisition. If the Province does not act quickly on a legislative amendment, we hope Council will ask their Administration to explore another local financing option that would help facilitate solar installations.
11. **On the matter of the current electricity rate classification structure and the difficulties it poses to solar deployment, the Saskatchewan Environmental Society suggests that City Council use virtual net metering as one important tool to overcome this barrier.** As mentioned in the Environmental & Corporate Initiatives report (Attachment 2, page 3) the Saskatchewan Environmental Society is currently working with Saskatoon Light and Power, SES Solar Co-op, Radiance Co-housing, the Saskatoon Car Share Co-op, Sun Country Highways and the Saskatchewan Research Council on a demonstration project that is intended to explore virtual net metering. In doing so, the solar power produced will generate enough electricity to charge 4 electric vehicles – each at a different location. In this demonstration experiment, that is in the developmental stages, Saskatoon Light and Power would record the solar electricity produced at one site, and then retail the solar-generated electricity for use at each of the charging locations.

We are at an early stage of working through exactly how virtual net metering would work. However, from our organization's perspective – **if Virtual Net Metering is to be replicated on a large scale in Saskatoon – one of the key elements needed for success is that the rate paid by Saskatoon Light and Power for the solar generated electricity needs to be sufficiently high to cover the full capital costs of the solar installation, plus cover: the annual insurance costs on the panels, all permitting and financing costs, and all inverter replacement costs for the solar system. These costs need to be recovered in enough time to allow a small profit to be made in the final operating years of the system.**

To provide context, the life of solar panels is in the range of 25 years. **If the above mentioned costs are going to be covered at the 16-20 year mark on a moderately sized system, we estimate this would currently necessitate a base payment of at least 13 cents**



per kilowatt hour that then rises at the same pace that electricity prices in Saskatchewan rise (about 5% per year).

Under the current rate classification system in both the SaskPower district and the Saskatoon Light and Power district, businesses with bigger buildings and large institutional customers with bigger buildings tend to pay low rates for their electricity consumption at the margin (about 8 cents per kilowatt hour once their consumption drops into the lower electricity rate tier). These building owners are therefore not likely to install solar panels because under current net metering rules, their solar installation would only save them 8 cents per kilowatt hour, and they therefore cannot recover the costs associated with a solar installation. However, if these businesses and institutions could 'virtual net meter' they could potentially supply solar power to locations that pay a higher retail rate for electricity, and thus potentially get paid a better price for solar generated electricity – one that would allow them to cover their costs in a reasonable time period. Under such a scenario – and with an adequate pricing policy - solar power would take off in Saskatoon in a very substantial way.

In effect, we are recommending that a better minimum price be paid for solar-generated electricity in Saskatoon, so that all businesses and institutions can envisage full cost recovery on their solar systems. Virtual net metering – with the right set of pricing policies - would be one way of accomplishing this goal.

A feed-in-tariff – widely adopted in more than 70 countries, is another equally valid approach. Recognizing that a small rooftop or ground-mount solar system is more expensive than much larger scale solar installations, most feed-in-tariffs have categories of payments for solar-generated electricity that reflect the scale and nature of the installation. Feed-in-tariffs are again aimed at ensuring full cost recovery and a modest profit for those who invest in solar power. Feed-in-tariff rates are usually adjusted every 2-3 years to take account of changes in the costs of solar technology.

In our view, the important principle of paying enough to properly incent the widespread installation of solar power in our community is an important policy shift that needs to be considered if we are going to reduce community-wide greenhouse gas emissions by 15% below 2014 levels by 2023 – the target set by Council, and one which we strongly support.

One of the big benefits of solar is that the greenhouse gas pollutants associated with solar panels over their full life cycle are only 7% of the greenhouse gas pollutants associated with conventional coal-fired electricity production and about 10% of those associated with electricity production from burning natural gas. Solar also avoids the respiratory and health care costs associated with coal-fired generation. Conventional



coal accounts for 42% of the electricity we consume in Saskatchewan. When electricity that originates from SaskPower's coal-fired power stations is supplied to our city – it is supplied cheaply because none of the health and environmental costs associated with the use of coal are being paid for.

12. Both Saskatoon Light and Power and SaskPower also offer Saskatoon businesses who want to develop solar power that is fed into the grid the option of utilizing the Small Power Producers program. That program currently pays 10.8 cents per kilowatt hour for solar-generated electricity. In our view the program has the potential to become especially relevant for building solar installations on undeveloped land.

Once again however, for the time being at least, this program is likely to get very limited uptake on either undeveloped property or on rooftops because its starting rate is not high enough to properly cover the costs associated with most solar installations, and because it offers an inflationary adjustment of only 2% each year over the 25 year life of a solar installation. In contrast, power rates in Saskatoon are going up at approximately 5% per year. **If the City of Saskatoon wishes to use the Small Power Producer program to get substantial uptake on solar power development in Saskatoon over the next 3 - 5 years, we recommend that the annual inflationary adjustment under the Small Power Producers Program be increased to reflect the real annual increase in power rates.**

13. **In closing, we want to reiterate our strong support for the contents of the Environmental and Corporate Initiatives report.**

We also want to say how pleased we are to be one of the partners with the City of Saskatoon in the Solar Demonstration Project at the Landfill Gas Generation Station site. The City and its staff are a great partner to work with.

We hope the observations and additional suggestions in this submission are helpful to members of City Council and to City Administration. Thank you very much for the opportunity to make this presentation.