Appendix E – Engagement with SaskPower

This appendix responds to part three of the referral motion in relation to item PPC20-9: Report on engagement with SaskPower or a plan to move forward without them – what generation potential does the City have through wind, solar and other renewable sources?

SaskPower's Future Power Supply

SaskPower's mandate is to provide reliable, cost-effective, sustainable electricity.

The Government of Canada has passed new laws that require the shut-down of all conventional coal-fired power stations by 2030. SaskPower is evaluating a range of power sources to replace conventional coal and meet its goal to reduce greenhouse gas (GHG) emissions by 40 per cent from 2005 levels by 2030.

To-date, SaskPower has added a combination of carbon capture and storage; natural gas-fired electricity generation; and, wind and solar projects. Northern hydroelectric facilities have been upgraded and SaskPower has increased the amount of hydroelectricity imported from Alberta, Manitoba and the United States.

These sources are supplemented by efficiency and conservation programs and major upgrades to the provincial power grid to improve reliability and enable more customer generation. Biomass and geothermal projects are also being evaluated.

After 2030, to cut GHG emissions by 80 per cent or even 100 per cent by 2050, SaskPower is exploring low or zero emissions sources, including nuclear power from small modular reactors (SMRs), adding more wind and solar combined with battery storage, carbon capture and storage; and, importing more low or non-emitting sources of electricity from Alberta, Manitoba and the United States.

These options would be supported by more upgrades to the province's power grid, which also supports the addition of more customer generation from renewable power sources.

In planning the power system, SaskPower must balance several seemingly competing priorities, including the impact on power rates, service reliability, regulatory risk, emissions, land use, other environmental impacts, as well as social and public acceptability.

Power Generation

Not all power generation methods can produce continual power, or base load power as it is commonly known. For example, 1kW of natural gas generation capacity can produce 1kW of electricity at any moment as long as the system is operational. 1kW of solar generating capacity has the potential to generate 1kW of electricity under optimal conditions but also has the potential to generate zero kW of energy under the most sub-optimal conditions.

SaskPower has adopted national reliability standards for utilities. These federal reliability standards require SaskPower to plan to always have enough electricity available to meet the full electricity demands of the province. This means when adding intermittent energy options such as wind and solar, SaskPower also needs to have enough dispatchable generation to reliably meet demand for electricity. SaskPower's dispatchable power has primarily come from conventional coal, natural gas or hydro. In support of its emissions reduction goal, and to comply with Federal regulations SaskPower continues to evaluate a range of low or non-emitting generation options as it transitions the power system from fossil fuels.

Section 38 of *The Power Corporation Act* gives SaskPower the exclusive right to supply, transmit, distribute and sell electrical energy in Saskatchewan. Only with SaskPower's permission can other parties supply, transmit, distribute or sell electricity.

SaskPower provides three methods for communities and businesses to generate electricity on the SaskPower grid. These are the:

1. Power Generation Partner Program
2. Net Metering Program
3. Unsolicited Power Proposals

The Power Generation Partner Program (PGPP) allows organizations to develop power generation projects to sell electricity to SaskPower. Projects are selected through a competitive procurement process. Generation options under the PGPP include solar, geothermal, hydro, flare gas, biomass/biogas, and waste heat recovery power.

Businesses and communities can submit applications for more than one project. But the total power generated from all renewable projects must be 1 MW or less.

In addition to the cost of the system, applicants are responsible for the following program costs as detailed on SaskPower's website:

Type	Cost
Application Fee (non-refundable)	$315 (GST included)
Interconnection Study Fee (non-refundable)	$1050 (GST included)
Interconnection Costs	$170,000/MW and $43,000/km
Operation and Maintenance Cost	1.25% of the project's total interconnection costs (2% annual escalation)
Electrical Inspection	Once accepted into the program, you are responsible for your own electrical inspection
Power Supply Rate	Electricity consumed by the Project's generation facility will be charged under the applicable rate code

A bid price must be submitted along with the project application. The bid price is the amount that will be paid for the energy generated by the project. For renewable projects, the bid price can't be more than $98.30/MWh.

Applications for 2020 are accepted from October 22 through October 30. In order to apply, a pre-application meeting must be booked with SaskPower prior to October 2. Not all applications will be successful. If the City applied under this program, it would be competing against applicants from the private sector. In 2019, the City applied for approval to install a second landfill gas-to-energy system under this program. Unfortunately, our application was denied because SaskPower did not have adequate grid capacity in the area.

SaskPower also offers a Net Metering program where customers can produce energy for their own consumption and then provide any excess power generated to the grid for credit on their bill which can be applied to future consumption of energy from SaskPower. Electrical generation can only be offset. If more electricity is generated than is consumed over the billing period, that difference is not paid out. Additionally, the excess generation provides credit only to the location where it is generated. The City would be unable to use credits from one facility towards other facilities' power consumption.

Under this program, the City of Regina can implement up to 500kW in Net Metering projects (per calendar year), but no one project can be more than 100kW. For context, 500kW of solar generation could power ~120 homes.

In addition to the specific customer generation programs outlined above, SaskPower also accepts one-off proposals for power generation projects intended to sell electricity to the grid. Proposals are evaluated on a case-by-case basis. Criteria for evaluation include the need for electricity on the system, the location of the project, cost and impact on customer rates, reliability, regulatory risk, environmental impact, and impacts to people. It is unlikely that SaskPower would pursue proposals that generate more electricity than is currently needed.

A fourth opportunity for power generation exists where electricity is generated for a customer's own consumption with nothing being put onto the grid. This is called Behind the Meter generation. In this scenario, there is no revenue associated with power generation. The installation would simply offset the amount of SaskPower electricity consumed. A Behind the Meter generation program still requires SaskPower involvement to help size and cost the interconnection between SaskPower and the customer generation facility. The interconnection is used to access electricity to back-up/supplement the customer generation. The recently announced solar generation project in Lumsden is an example of a Behind the Meter project.

When entering into a power production agreement with SaskPower, ownership of environmental attributes such as carbon offsets or credits become the property of SaskPower. This would mean that the City of Regina would not be able to attribute program participation as achieving its emission reduction targets.

In addition to the programs for communities and businesses outlined above, SaskPower is adding renewables to the grid using other providers. The First Nations Power Authority will be adding 20 MW of renewable generation and an additional 20 MW will be purchased through RFP tender.

10 MW of this latter category was awarded to Kruger Energy to develop the Foxtail Grove Solar Energy Project within the City of Regina borders. The City of Regina helped to make this bid successful by way of a tax exemption, as well as exemptions of the transportation, parks and recreation, and administration portions of servicing agreement fees. The project will generate enough electricity to power 2,600 Saskatchewan homes. The project supports Council's goal for Regina to become 100 per cent renewable by 2050 and promotes conservation of energy for long-term sustainability. The City can explore additional partnerships such as this moving forward.

Opportunities for the City of Regina

Within the generation programs available from SaskPower, the City has several opportunities to add renewable sources to the grid.

Opportunities for solar generation are detailed in *Motion 18-4 Solar Panels (Appendix D)*. In addition to solar generation, the City can investigate projects for additional green energy production. Such projects include additional Landfill Gas to Energy Generating capacity and installation of wind turbines at City facilities; renewable natural gas from the Wastewater Treatment Plant, landfill or other organic programs; geothermal heating at city facilities; and in the future possible waste to energy solutions. Opportunities for reducing energy consumption are also being considered as transitioning to non-conventional energy sources will be easier if the amount of energy required is reduced.

SaskPower is investigating new utility scale renewable solutions which may further support the City's objectives. Further discussions are planned between SaskPower and the City as SaskPower develops these new services.