



SASKATCHEWAN
CHAMBER *of* COMMERCE

BACKGROUND

Current State of Renewable Energy in Saskatchewan

June 15, 2018

Core Issue

In 2015, the Government of Saskatchewan announced its long-term objective of generating half of the province's electricity through renewable sources by 2030. The goal will include increased reliance on wind, solar, as well as some geothermal power and biomass. The impact on greenhouse gas emission (GHG) reductions is expected to be 40% below 2005 levels by 2030. There has recently been some skepticism expressed about whether SaskPower can achieve such an ambitious target over the next 12 years.¹ This is in light of the fact that the Crown utility must not only double the renewables percentage of its total generating capacity (which is also anticipated to grow substantially) in 12 years, but also backfill the generating capacity currently provided by conventional coal with other sources in response to conventional coal's gradual phase out.

Developing new renewable energy sources requires large, up-front investments to design, build, and commission the required infrastructure. Such investment decisions will have substantial impacts on businesses large and small, including changes in electricity rates, interconnection costs, supply chain considerations, as well as significant opportunities for private sector procurement and employment. The objective of this report is to offer an overview of the renewable energy sector in Saskatchewan.

Saskatchewan's Electricity Generating Mix at a Glance

As Saskatchewan's primary electricity supplier, SaskPower faces some challenges in relation to its generating capacity. The first challenge it faces is meeting the increased demand for power throughout the province. According to SaskPower's

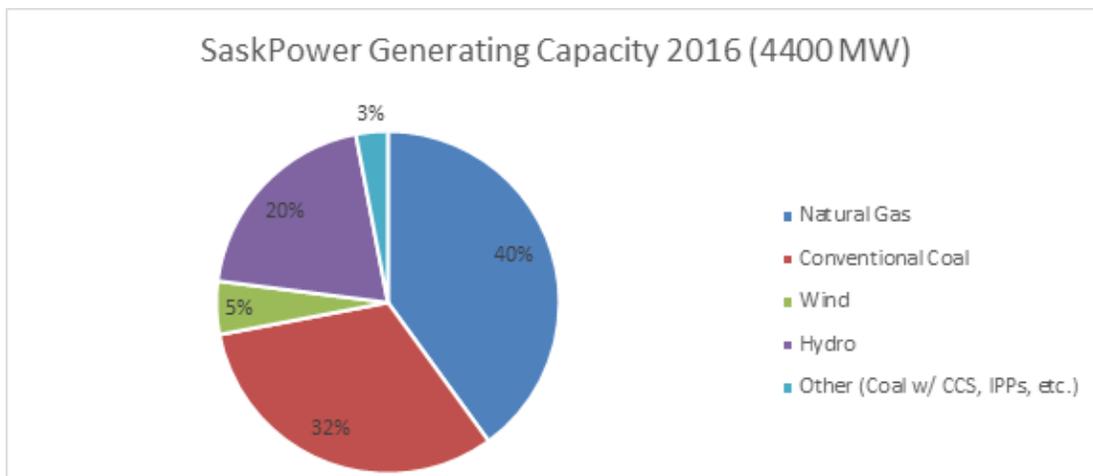
¹ Note: In an April 16, 2018 article by David Baxter of Global News, Saskatchewan Minister of Environment Dustin Duncan acknowledged to the media that the province's goal of doubling its renewable capacity in 12 years is very ambitious in response to questions that the plan was not on-track.

own data, by 2019 the Crown utility will need to supply enough incremental electricity to power a city equivalent to the size of Saskatoon.² SaskPower's new peak load record for summer with 3470 MW in August 2017 is illustrative of this larger trend.³

The second challenge facing SaskPower is that recent amendments made to federal-level emissions regulations will eliminate the utility's primary source of power – coal-fired plants.⁴ As part of the Pan-Canadian Framework, Environment and Climate Change Canada will accelerate the phase-out of coal by 2030.⁵ SaskPower will need to consider alternatives, including coal with carbon capture and storage (CCS), natural gas, hydro, imported power from Manitoba Hydro, wind, solar, and geothermal to fill the gap left by conventional coal-fired plants.

SaskPower maintains over 156,000 km of power lines, serves over 522,000 customers in the province, and has a total electricity generating capacity of almost 4500 megawatts (MW).⁶ According to 2016 figures, SaskPower's generation mix today consists of natural gas (40%), conventional coal (32%), wind (5%), and hydroelectricity (20%), with the remaining 3% comprised of coal with CCS, electricity purchased through independent power producers (IPPs) and other sources.⁷

Figure 1:



Fast-forward to 2030, SaskPower estimates that its total generating capacity will increase to 7000 MW, with the non-renewable share accounting for 50%, or 3500 MW, of the total amount.⁸ The remaining 50% of generating capacity will consist of wind (30%), Hydro (15%), with solar, biomass, geothermal, and other sources rounding out the remaining 5%.⁹

2 SaskPower. *Plans for a Sustainable Power Future: Saskatchewan Renewable IPP and Supplier Information Session Regina, Saskatchewan*. November 27, 2016.

3 SaskPower. *Saskatchewan Breaks Power Use Record During Holiday Cold Snap*. News Release. January 2, 2018. <https://wcms.saskpower.com/about-us/media-information/news-releases/2018/03/saskatchewan-breaks-power-use>

4 SaskPower. *Plans for a Sustainable Power Future: Saskatchewan Renewable IPP and Supplier Information Session Regina, Saskatchewan*.

5 Ibid.

6 Ibid.

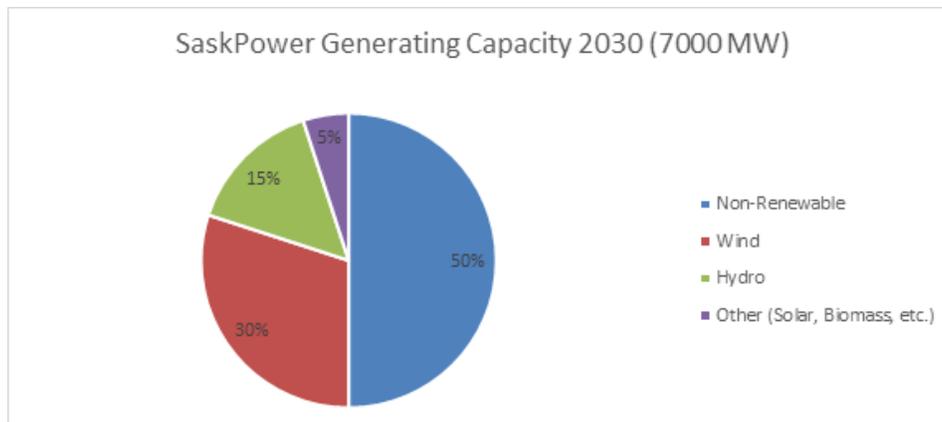
7 Ibid.

8 Ibid.

9 Ibid.

As of April 2018, approximately 25% of the province's 4491 MW of generating capacity comes from renewable sources, with hydro and wind generating 889 MW and 221 MW respectively. ¹⁰

Figure 2:



As more renewables get brought online, natural gas will play a larger role in the non-renewable mix. This is because the intermittent nature of both wind and solar energy means that power is not available all the time and SaskPower does not possess adequate power storage technology yet. As a result, more natural gas will be required as a backup source to green technologies.¹¹ Some advantages of natural gas generation include lower carbon emissions compared to conventional coal, and shorter build times for combined cycle gas plants. One challenge for the province moving forward is that TransGas' transmission infrastructure has to be revamped in light of the anticipated increase in the ramping up and down of gas plants as more intermittent sources go online. ¹²

SaskPower Renewables Roadmap

SaskPower has plans to add a total of 60 MW of solar by 2021. From then the total will jump to 120 MW in 2025 and then to 300 MW by 2030.¹³ In terms of wind energy, SaskPower has an additional 207 MW of wind power currently in development that is scheduled to go online by 2020. SaskPower is expected to generate a total of 1800 MW of electricity through wind sources by 2030. The development of wind and solar projects will be accomplished primarily through independent power producer builds. Biomass and geothermal will play an important, albeit much smaller role, in SaskPower's renewables strategy.

SaskPower has chosen to bring renewables online in a staggered approach to

¹⁰ Ibid.

¹¹ Saskatchewan Rate Review Panel. *2013 SaskPower Rate Application Report*. Retrieved from: <http://www.saskratereview.ca/docs/saskpower2013/saskpower-rate-application-report.pdf>

¹² Note: TransGas Limited is a wholly-owned subsidiary of SaskEnergy. It is responsible for operating the natural gas pipeline infrastructure that collects gas from well sites in the province and delivers it to SaskEnergy, who then delivers it to the end-user.

¹³ National Energy Board. *Canada's Renewable Power Landscape 2016 – Energy Market Analysis*. Retrieved April 17, 2018. <https://www.neb-one.gc.ca/nrg/sttstc/lctct/rprt/2016cndrnwblpwr/prvnc/sk-eng.html>

ensure the grid has time to adapt to new intermittent sources of power.¹⁴ Doug Opseth, Director of Generation Asset Management and Resource Planning for SaskPower, says adding renewable sources to the electrical grid in a slower, more measured approach was designed to minimize rate increases, as it was estimated that the current plan costs \$1.5 billion more than growing generating capacity through purely non-renewable means.¹⁵

Figure 3:

Renewable Source	Reliability	Cost Ratings (\$)	Environmental Impact
Wind	Low	Low	Low
Solar	Low	High	Low
Hydroelectricity	High	Medium	Low
Geothermal	High	High	Low
Biomass	Medium	High	Low

RFQ/RFP Process

Informing SaskPower’s procurement process around renewables are three overarching principles:

- Economics – Renewable power is to be procured at the best possible value on behalf of ratepayers, while simultaneously reducing greenhouse gas emissions.
- Environment – Projects must be environmentally sound and low-risk.
- System Approach – Renewables being brought online must be accommodated with existing distribution and transmission capacity and operating capabilities. Interconnection costs are factored in.¹⁶

Other important considerations include:

- A fair, open, and transparent procurement process.
- Ensuring good value for money is obtained.
- That projects make sense to stakeholders.
- That projects are a good fit for the communities in which they are located.
- That projects help contribute to SaskPower’s goal of greening the electrical grid.¹⁷

¹⁴ David Baxter. “SaskPower Says 50 Percent Renewable Capacity on Track for 2030”. *Global News*. Retrieved April 16, 2018. <https://globalnews.ca/news/4148480/saskpower-not-expected-to-reach-50-percent-renewable-generation-by-2030/>

¹⁵ Ibid.

¹⁶ SaskPower. *Wind and Solar RFQ/RFP Process: Saskatchewan Renewables IPP And Supplier Information Session Saskatoon, Saskatchewan*. November 17, 2016.

¹⁷ Ibid.

During pre-procurement consultations, SaskPower reached out to a wide array of stakeholders throughout 2016, including ratepayers, rural municipalities, project proponents, vendors and service providers, Indigenous groups, environmental organizations, industry associations from both the wind and solar sector, as well as the Government of Saskatchewan.¹⁸

SaskPower's renewables strategy consists of a two-stage IPP competition process. The first stage is a Request for Qualifications (RFQ). In the RFQ stage, proponents are screened against specific criteria so as to provide a shortlist for the Request for Proposal (RFP) stage. The RFP stage is where projects from prospective proponents are thoroughly vetted based on competition-specific criteria. Proponents are offered an opportunity to ask questions after each RFQ and RFP. To ensure fairness, the evaluation of potential projects is carried out by a multidisciplinary team within SaskPower.¹⁹

Wind Energy Procurement

The competition for up to 200 MW of utility scale wind capacity is currently underway. To place this figure into context, 200 MW is enough energy to power roughly 80,000 homes and is the equivalent of removing 100,000 cars from Saskatchewan roads. In 2016, SaskPower originally scheduled the RFQ and the RFP to be issued in January 2017 and mid-May 2017 respectively. SaskPower's goal was to award the project by the end of 2017 with a targeted in-service date by Q2 of 2020. The criteria for the competition as of late 2016 specified that it would consider the following:

- Accepting proposals broken down into 25, 100, or 200 MW separate projects.
- A maximum of two proposals are allowed per proponent.
- Proposed projects must be located in Saskatchewan.
- Projects must be designed, sited, built, commissioned, and operated by the successful proponent on proponent-chosen sites.²⁰

Other important criteria addressed in the wind RFQ was the proponent should have prior experience with utility-scale wind projects, have the financial capability to carry out the project, be required to maintain a minimum level of equity, and show proof of site control.²¹ For the RFP portion of the wind competition, other factors to be taken into consideration by SaskPower included pricing²², demonstrated community engagement, consultations with Indigenous communities, compliance with Ministry of Environment site suitability guidelines, and considerations around sustainability.²³

18 Ibid.

19 Ibid.

20 Ibid.

21 Ibid.

22 Note: Evaluated pricing will be based on the bid price plus the interconnection costs into the grid. On SaskPower's competition scorecard, pricing is the factor weighted the heaviest.

23 SaskPower. *Wind and Solar RFQ/RFP Process: Saskatchewan Renewables IPP And Supplier Information Session Saskatoon, Saskatchewan.*

The Power Purchasing Agreement (PPA) for the wind competition features a 25 year contract window with pricing and escalation outlined in the agreement. The major advantage of this kind of PPA for the successful project proponent is stability – a predictable cash flow is realized throughout the entirety of the contract, making these kinds of projects highly favourable to financing.

Solar Energy Procurement

The current competition for solar aims to procure a total of 60 MW of capacity by 2021. Both the RFQ and RFP for the solar competition were announced in September 2016 and December 2016 respectively.²⁴ The successful project is scheduled to be awarded for Q4 2017 with an in-service target date of Q4 2018. The procurement process for 60 MW of utility-scale solar is comprised of three parts. The first part is a competitive bid process for the first 20 MW of capacity. This will take the form of two, 10 MW projects. The successful proponent will design, build, commission, and operate the 10 MW fixed-panel photovoltaic facility. There is some room for flexibility in this phase, as the project proponent may suggest their own site for development, along with SaskPower. SaskPower will also cover some of the associated grid interconnection costs for the IPP up to a defined maximum amount.

The second phase for the subsequent 20 MW will see SaskPower source power from the First Nations Power Authority (FNPA). Similar to the first phase, the SaskPower – FNPA partnership will feature two separate 10 MW projects, with FNPA defining the approach taken. Both SaskPower and the FNPA can recommend their own project sites, identical to the approach taken in the first phase. SaskPower agreeing to pay up to a defined maximum amount to connect FNPA projects to the electrical grid will also be maintained in this round.²⁵

The third and final round of planned procurement for the last 20 MW of solar will see SaskPower procuring power from community-based projects. This phase of the solar procurement process contains the most details that still need to be determined – both in terms of the overall approach and the project size. Unlike the arrangement in the first two phases, the project proponent in this case will propose the site and related interconnection costs will be determined as the program is developed.²⁶

Much of the same criteria found in the wind RFQ/RFP process (previous experience with utility-scale projects, financial capacity, minimum equity levels, proof of site control, etc.) are required in the solar competition, along with competitive pricing, demonstrated engagement with the community, consultations with Indigenous peoples, and compliance with existing environmental regulations.

Some criteria specific to the solar competition include an emphasis on optimal solar intensity, the availability of infrastructure, low risk to the environment, low land values, and a requirement that the proposed project be 200 metres away from an occupied residence.²⁷

24 Ibid.

25 Ibid.

26 Ibid.

27 Ibid.

Luckily, satisfying the significant solar component of the competition should not be that difficult for developers, as the southern portion of the province is a photovoltaic hotspot that enjoys some of the sunniest days in Canada.²⁸

Price and escalation terms are also addressed in the solar competition PPA, but the contract window is only 20 years. Successful developers will also enjoy stable, predictable cash flow, which lends itself to favourable financing arrangements. Another advantage for developers is the costs associated with solar have decreased significantly in recent years, making it a more cost-effective option than ever before. In some cases, solar projects can also be a better fit for smaller, less experienced developers compared to wind. This is because solar projects tend to be less operations and maintenance-intensive, have lower regulatory hurdles, with better site availability.

In addition to the RFQ/RFP process for solar, SaskPower also offers programming available to Saskatchewan businesses and residents. The Net Metering Program is available to all customers of SaskPower capable of generating up to 100 kW (dc) of capacity. Essentially SaskPower will apply a credit for the electricity that is self-generated against the amount of electricity drawn from the grid. Program participants can bank unused power in their SaskPower account for up to one year. Any credits left over are reset to zero in March of the calendar year.

Offered in tandem with the Net Metering Program is a one-time only rebate worth 20% of up-front equipment and installation costs, up to a maximum of \$20,000. The rebate expires on November 30, 2018. Participants cannot earn money through this program. In addition to solar panel projects, wind, biogas, biomass, flare gas heat recovery, and low-impact hydro projects are also eligible. SaskPower is planning to undertake a review of this program. As of June 2018, almost 400 residences and another 400 rural acreages have switched over to self-generation.²⁹

Status of Wind and Solar RFQ/RFP Process Today

In February 2017, SaskPower issued its RFQ to identify prospective IPPs for the first stage of the wind competition. Twenty-three IPPs participated in the RFQ stage for wind. Initially, eight of the twenty-three IPPs were shortlisted for the RFP stage. However, in August 2017 the shortlist for the RFP stage was expanded to include fifteen. The rationale provided by SaskPower was to expand its pool of qualified suppliers. As of June 2018, the shortlist of 15 developers from the RFQ stage has not changed. The response from developers to the first stage of wind procurement was very strong. The deadline for proponents to submit bids for the RFP stage is May 28, 2018.

The RFQ/RFP stage for wind is now closed. Remaining proposals will be reviewed by SaskPower's board of governance. It is then reviewed by Crown Investments Corporation and will finally go before the provincial Cabinet. As of June 2018, the proposals have been evaluated and SaskPower is working through the process toward a power purchase agreement.

²⁸ According to a study by Natural Resources Canada (NRCan) entitled, *Canada's Sunniest Cities: Ranking of Photovoltaic Potential*, Regway, SK was the highest ranking municipality in terms of annual photovoltaic (PV) potential with 1384 kWh/kW. Regina was the highest ranking of Canada's major municipalities with 1361 kWh/kW.

²⁹ Jenn Sharp. "Solar Powering Saskatchewan." *Industry West Magazine*. Spring 2018. Issue 1 Vol 2. P. 32-33.

Information on the number of submissions and the number of IPPs that submitted proposals will be available when the announcement of the successful proponent is made. The successful proponent will be announced by SaskPower in September 2018 with an anticipated in-service date starting early 2021.

For the competition around the first 10 MW of solar, SaskPower issued its RFQ in September 2016 to identify qualified IPPs. Thirty-four proponents moved onto the RFP stage when it was announced in February 2017. The window of time for proponents to submit bids in the RFP stage closed in September 2017. The winning bid is expected to be announced at the end of June 2018. The competition for the next 10 MW of solar is scheduled to commence sometime in early 2019.

Hydro Procurement

Hydro generally has high up-front costs and is more expensive to build than natural gas plants, but on the upside has the longest lifespan, lowest operating costs of all power generations sources, and is not exposed to volatile fuel price risks that affect natural gas. Currently SaskPower operates five hydroelectric stations that generate a total of 889 MW of capacity.³⁰ Aside from the existing hydroelectric facilities in operation, there were plans on the part of SaskPower to build a hydroelectric project in the northern part of the province on the Black Lake First Nation near Stony Rapids.³¹

In July 2017, the 50 MW, \$630 million project was put on hold indefinitely due to lower-than-expected demand for electricity in the region. The anemic demand was a result of decreased mining activity in the North. The project was structured as a joint venture between SaskPower and the Black Lake First Nation and was expected to generate \$1.3 billion over the asset's 90-year lifespan. SaskPower is currently in the process of reevaluating the economic case for the project.³²

SaskPower continually assesses its various generation options throughout the province, including hydro options. According to information provided by SaskPower, the Crown utility is not actively working to develop any new hydro generation assets in the south of the province. In 2015, SaskPower signed a 20-year deal with Manitoba Hydro to purchase a minimum of 100 MW of electricity starting in 2020.

Aside from the 80 km long, 230,000-volt transmission line scheduled to be built between the two provinces, Manitoba Hydro is reluctant to build additional transmission interties. Another issue for SaskPower is that an increased reliance on electricity purchased from Manitoba Hydro undermines the self-sufficiency component of SaskPower's overarching mandate.

30 Note: A breakdown of SaskPower hydroelectric stations and their capacity – Athabasca Hydroelectric System (23 MW), Island Falls Hydroelectric Station (111 MW), Manitoba Hydro Northern Power Purchase Agreement (25 MW), Nipawin Hydroelectric Station (255 MW), E.B. Campbell Hydroelectric Station (289 MW), Coteau Creek Hydroelectric Station (186 MW).

31 Thomas Pillar. "SaskPower Puts Northern Saskatchewan Hydroelectric Project on hold." Global News. September 25, 2017. Retrieved Online From: <https://globalnews.ca/news/3768355/saskpower-hydroelectric-northern-saskatchewan-black-lake-first-nation/>

32 Ibid.

Geothermal Procurement

Geothermal power generation is a natural power source that harnesses energy from pools of heated water called geothermal reservoirs deep below the Earth's surface. Geothermal facilities pass heated water through an exchanger that produces steam, which drives a turbine that in turn produces electricity. In May 2017, SaskPower signed a PPA with Deep Earth Energy Production (DEEP), a geothermal developer as a part of the utility's efforts to double its renewable generating capacity.³³ This is the first PPA ever issued in either Saskatchewan or Canada for a geothermal facility. DEEP is hoping to build a 5 MW, zero-emissions power plant in southeastern Saskatchewan near Estevan.

This portion of the province was chosen because it sits on an aquifer that is sufficiently deep (3.5 km) for the water to be hot enough to process.³⁴ This particular aquifer can support up to 200 MW of capacity. One of the advantages of geothermal power compared to intermittent sources like wind and solar is that it can become a baseload power supply providing energy 24 hours a day, seven days a week.³⁵ On the downside, geothermal projects also face large up-front costs and much longer payback periods for potential investors, which may dissuade interest. DEEP's first geothermal project is estimated to be completed in two years.

Flare Gas Capture and Use

While flare gas capture and use is not a renewable energy source in and of itself, it does fit into SaskPower's larger decarbonization strategy and should be included in this discussion. SaskPower continues to evaluate and implement flare gas capture projects as an option for small to medium-sized oil and gas producers to utilize their waste gas in alignment with the S-10 Directive under the Oil and Gas Conservation Act and the related Oil and Gas Conservation Regulations.³⁶

As of June 2018, SaskPower has successfully interconnected two projects to the electrical grid for a total of 1.75 MW capacity. The initial contract base rate is \$41.28 per MWh in 2017 pricing with an escalation rate of 2% per year. A fee of \$1,725 plus GST, along with an application is required to participate in the program. Changes to the existing Flare Gas Power Generation Conservation program are currently underway. This will likely generate more interest in flare capture and use projects moving forward.

33 Adam MacVicar. "SaskPower Exploring Geothermal Power Plant in Efforts to Reach 2030 Targets." *Global News*. December 9, 2017. Retrieved from: <https://globalnews.ca/news/3905709/saskpower-geothermal-power-plant-renewable-electricity-deep-corp/>

34 Ibid.

35 Ibid.

36 Directive S-10 is known as the *Saskatchewan Upstream Petroleum Industry Associated Gas Conservation Directive* and provides regulatory requirements for reducing, flaring, incinerating, and venting of associated gas in the province.

Overview of Wind Projects: In-Service and In-Development

In-Service Projects

SaskPower's five existing wind farms account for 5% of generating capacity today with the expectation that it will grow to 30% of the province's total generating capacity by 2030.³⁷ Today this translates into a total of 221 MW of capacity spread across 143 turbines.

The five operational wind projects in Saskatchewan include the following:

Cypress Wind Power Facility

- Located near Gull Lake, SK; Commissioned in 2002; Net generating capacity: 11 MW; Owner: SaskPower³⁸

Sunbridge Power Facility

- Located near Gull Lake, SK; Commissioned in 2002; Net generating capacity: 11 MW; Owners: Suncor and Enbridge³⁹

Centennial Wind Power Facility

- Located near Swift Current, SK; Commissioned in 2006; Net generating capacity: 150 MW; Owner: SaskPower, developed under the Green Portfolio Program⁴⁰

Morse Wind Facility

- Located in Morse, SK; Commissioned in 2015; Net generating capacity: 23 MW; Owner: Algonquin Power

Red Lilly Wind Energy Facility

- Located near Moosomin, SK; Commissioned in 2011; Net generating capacity: 26 MW; Owner: Concord Pacific⁴¹

37 SaskWind. *Location of Sask Wind Farms*. Retrieved Online From: <https://www.saskwind.ca/location-of-sk-wind-farms>

38 Ibid.

39 Ibid.

40 SaskPower. *Powering Saskatchewan: Centennial Wind Power Facility*. <https://www.saskpower.com/our-power-future/our-electricity/electrical-system/system-map/centennial-wind-power-facility>

41 SaskWind. *Location of Sask Wind Farms*.

Partial List of Proposed or In-Development Projects

Riverhurst Wind Project

- Located Southwest of Riverhurst SK; Targeted in-service date: 2020; Net generating capacity: 10 MW; Owner: Capstone Infrastructure, proponent was awarded 20-year PPA from SaskPower through the Green Options Partners Program.

Western Lily Wind Energy Project ⁴²

- Located in the R.M. of Wolseley, Southwest of Grenfell, SK; Targeted in-service date: early 2019; Net generating capacity: 20 MW; Owner: Gaia Power Inc., proponent was awarded PPA from SaskPower under Green Options Partners program.

Blue Hills Energy Project

- Located near Blue Hills, SK; Targeted in-service date: N/A; Net generating capacity: 177 MW; Owner: Algonquin Power
- The project was initially supposed to be sited near Chapin, SK but upon further review by the Saskatchewan Ministry of Environment in 2016, the Chaplin Wind Energy Project did not go ahead on the site planned due to concerns that the project would interfere with a migratory bird path and would contribute to habitat destruction.
- Algonquin Power and SaskPower proposed the current site near Blue Hills instead.⁴³

The Yotin Wind Project

- Located on the Beardy's and Okemasis Cree Nation near Duck Lake; Currently in the initial stages of development; Net generating capacity: 100 MW or 200 MW; Owners: limited partnership with Innergex and Beardy's & Okemasis Cree Nation.
- Currently awaiting announcement of successful proponent for wind competition for fall 2018.⁴⁴

Montmartre Wind Project

- Located near Montmartre SK; Net generating capacity: 175 MW; Owners: WestSource Solutions and Veresen.
- Currently awaiting announcement of successful proponent for wind competition for fall 2018.

⁴² Ibid.

⁴³ "Wind Power Project Proposed in Blue Hills, Sask." *CBC News*. January 5, 2017. Retrieved Online From: <http://www.cbc.ca/news/canada/saskatchewan/wind-power-blue-hills-1.3922509>

⁴⁴ Innergex. *The Yotin Wind Project*. Retrieved Online From: <http://www.innergex.com/en/the-yotin-wind-project/>

Environmental Regulations

Federal Regulatory Process

Under the current Canadian Environmental Assessment Act, 2012 (CEAA), wind energy projects do not fall under the “designated project” category as defined in the section around regulations designating physical activities.⁴⁵ However, less complex or lower-risk projects on federal lands, including First Nation reserve lands must comply with all applicable federal laws, requirements, and permits per the Responsible Resource Development Plan. This is a five-step process that first asks whether an environmental review applies and if so, compels the proponent to write a project description that identifies the level of environmental review necessary, as well as an analysis of potential environmental effects before receiving any authorization.⁴⁶

The Government of Canada is currently proposing new legislation around environmental assessments that will seek to broaden the scope of the assessment process from focusing squarely on the bio-physical environment to consideration of larger socio-political concerns, including climate change, gender-based issues, and impacts on Indigenous peoples.⁴⁷ As of June 2018, draft legislation is currently before the House of Commons. In terms of project permitting at the Federal level, wind projects being considered for development will likely require the proponents to obtain permits under the Aeronautics Act, the Canadian Aviation Regulations and Radiocommunications Act, and the Fisheries Act. The degree of permitting required will vary on a case-by-case basis depending on the renewable energy source being developed.⁴⁸

Provincial Regulatory Process

The Government of Saskatchewan through the Ministry of Environment is responsible for administering the approval and permitting regime for renewable energy projects.⁴⁹ The Environmental Assessment (EA) process is formalized through its enacting legislation, The Environmental Assessment Act. An EA requires the project proponent to comply with a series of legislated policy steps and provides an opportunity for both technical experts and the general public to review and scrutinize the project’s specifics.⁵⁰

In order for a project to receive approval, a submission must go through a series of steps. A proponent must determine early on if their project is classified as a “development” as defined in Section 2(d) of The Environmental Assessment Act.

45 Innergex. *Development Opportunities in Saskatchewan*. Retrieved Online From: <http://www.innergex.com/en/development-opportunities-in-saskatchewan/>

46 Ibid.

47 Wm. Christopher Porter. “Professional Perspectives: Make Legal a Breeze in Renewable Energy Projects.” *Industry West Magazine*. Spring 2018. Issue 1 Vol. 2. P. 34-35.

48 Christopher J. Masich. “Renewable Energy Development in Saskatchewan.” *McKercher LLP*. October 2016. P. 21

49 Government of Saskatchewan. Ministry of the Environment. *Environmental Considerations for Renewable Energy Projects in Saskatchewan – SaskPower IPP Renewable Energy Meeting*. November 17, 2016.

50 Ibid.

Individual components of the definition include:

- Effects on unique, rare, or endangered features of environment.
- Substantial use of provincial resources.
- Causes emission of unregulated waste or pollutant.
- Causes widespread public concern because of environmental changes.
- Involves new forms of technology.
- Has a significant impact likely on the environment or necessitate further development likely to have significant impact.⁵¹

After the proponent has determined whether their project meets the definition of “development” as set out in Section 2(d), the proponent must develop a Technical Project Proposal (TPP) and submit it to the Environmental Assessment Branch at the Ministry of Environment. The purpose of a TPP is to provide a detailed overview of the project that includes the various components, activities, and site location, as well as the findings of engagement activities and field surveys, along with the potential effects of the project on the environment. Proponents must also include mitigation strategies, and a post-commission wildlife monitoring mechanism.⁵² The approval process for a utility-scale, commercial wind project would require the completion of a TPP.

Once the proponent submits their TPP to the Environmental Assessment Branch for review, the Ministry will determine if the project fits the definition of development as found in Section 2(d). If the project is not deemed a development, it can proceed to permitting and eventually the construction phase. If the project is deemed a development, it will be subjected to a full environmental assessment. In addition to the environmental assessment portion, there are also permitting requirements that proponents need to be aware of.

This would include:

- Permits surrounding hazardous substances and dangerous goods, as well aquatic habitat protection found under The Environment Management and Protection Act, 2010.
- Permits related to species detection and activity restrictions for sensitive species under The Wildlife Act, 1998.
- Permits pertaining to development and land-use regulations as found under both The Heritage Property Act and The Planning and Development Act, 2007.
- Relevant municipal zoning permits as issued under bylaw.⁵³
- Permits for nearby roadside development for wind projects required under the Highways and Transportation Act, 1997.

In response to concerns raised by both the public and environmental groups around some of the potential negative impacts of wind energy projects, the Ministry of Environment has recently published additional wind project siting guidelines to help

51 Ibid.

52 Innergex. *Development Opportunities in Saskatchewan*.

53 Ibid.

wind energy producers identify and avoid development in environmentally sensitive areas.⁵⁴ The Canadian Wind Energy Association, (CanWEA) offered its expertise to the Ministry of Environment to assist the Ministry in crafting those guidelines.⁵⁵

Saskatchewan Public Opinion on Renewable Energy

In May 2015, a survey was conducted by Oraclepoll Research on behalf of CanWEA to determine Saskatchewan peoples' perception of renewable energy development in the province. The survey entitled, Omnibus Survey Report Saskatchewan, sampled 750 voting age residents throughout the province using telephone interviewing originating from a call centre facility. The survey was conducted using random phone number selection and was inclusive of both new landline-based phone numbers and cell phone-only residents. Surveys were conducted from May 19 – May 25, 2015. The survey contains a margin of error of $\pm 3.6\%$ 19 out of 20 times.⁵⁶

Below are some important observations from the survey results:

- When asked which electricity generating technologies (wind, natural gas, hydro, coal, nuclear power) should be the highest priority for Saskatchewan, **51%** of respondents said that wind was the preferred technology of choice.
- When asked how important it was that Saskatchewan improve on reducing its carbon emissions given its reputation as a high per capita emitter, **77%** of those surveyed said that was important to reduce related emissions.
- When asked whether they thought the Government of Saskatchewan has done too much, enough, or not enough to develop renewable energy source in the province, **75%** of those surveyed stated that the province has not done enough. This was consistently expressed across all age demographics, income-levels, gender, and transcends the urban-rural divide.
- When participants were asked what their opinion was of wind energy as a source that will provide large amounts of electricity for Saskatchewan, **two-thirds** of respondents have a favourable opinion of wind energy in this context.
- Support for developing renewable energy sources (particularly wind energy) is widespread across the Saskatchewan political spectrum. Respondents were asked about their provincial political party preferences.
- 61% of those surveyed were Saskatchewan Party voters, with 26.7% for the NDP, 4.8% for the Saskatchewan Liberal Party, 4.1% for the Green Party, and 3.7% for the Progressive Conservative Party.⁵⁷

After the Oraclepoll was conducted in May 2015, a poll surveying Saskatchewan's general voting population was carried out by Vote Compass, a civic engagement platform from March 7 – 11, 2016 in advance of the provincial election on April 4th. Vote Compass was developed by a team of social and statistical scientists from Vox Pop Labs and included a sample size of 5,253 respondents. The data was derived

⁵⁴ Government of Saskatchewan. Ministry of the Environment. *Environmental Considerations for Renewable Energy Projects in Saskatchewan – SaskPower IPP Renewable Energy Meeting.*

⁵⁵ Robert Hornung. "The Path Forward for the Wind Energy Industry in Saskatchewan." *CanWEA*. April 6, 2016. Retrieved from CanWEA website.

⁵⁶ Oraclepoll Research. *Omnibus Survey Report Saskatchewan*. May 2015. Commissioned by CanWEA.

⁵⁷ Ibid.

from a non-random sample of the population and was weighted by geography, age, gender, education level, occupation, and religion to ensure that the sample was reflective of the province's population makeup based on census data. When asked about renewable energy, 68% responded that there should be more investment in renewable energy, 5% stated there should be less, while the remainder said they were neutral or unsure.⁵⁸

Challenges and Opportunities for Saskatchewan Businesses

Opportunities to Improve Upon the RFQ/RFP Experience for Proponents

In comparison to Alberta's extremely deregulated (and sometimes chaotic) electricity market, Saskatchewan has a regulated, vertically integrated market in which SaskPower as a Crown utility manages generation, transmission, and distribution. Saskatchewan also has extensive experience dealing with third-party IPPs through long-term PPAs where both parties are aware of their rights and responsibilities. This can offer an enhanced level of certainty for businesses when submitting bids to SaskPower on renewable projects.⁵⁹ SaskPower should be commended for undertaking such an ambitious roll-out of utility-scale renewable power through its active engagement with the private sector.

However, there are opportunities to improve the RFQ/RFP experience based on feedback received by the Chamber from a number of private sector stakeholders. For example, some developers have commented that the administrative paperwork on the front-end can be overwhelming, especially for smaller, Saskatchewan-based proponents who often do not have adequate capacity in terms of time and staffing to provide the kind of reporting required.

This puts small, homegrown bidders at a competitive disadvantage relative to larger companies with large portfolios coming from outside the province to bid. When smaller, homegrown developers are unable to gain the requisite experience developing renewable projects in their own backyard, it makes it difficult for those companies to expand and successfully bid on projects in other provinces, notably Alberta.

In addition, some developers have expressed frustration with the lack of clarity around the non-Indigenous, local sourcing and procurement component in the scorecard that SaskPower uses as part of their RFQ/RFP process. Stakeholders have commented that some of the criteria by design, eliminates developers not of a sufficient size and/or scale. There is also no credit given to a bidding proponent who partners with a local developer. And while it is generally understood by many that SaskPower weighs the pricing component the heaviest, it is not known generally by how much relative to other factors.

58 Kevin O'Connor. "Vote Compass: Sask. Cool on Carbon Pricing, High on Renewable Energy." *CBC News*. March 12, 2016. Retrieved Online From: <http://www.cbc.ca/news/canada/saskatchewan/vote-compass-carbon-pricing-regulations-renewable-energy-environment-1.3487941>

59 Chad Eggerman. "Renewable Opportunities, Risks and Rewards in Alberta and Saskatchewan." *Canadian Clean Energy Conferences*. P. 4. Retrieved Online from Miller Thomson LLP website: <http://www.millerthomson.com/wp-content/uploads/2017/05/ChadEggermanThoughtLeaderQA.pdf>

There is a real opportunity here to provide additional clarity around the weighting for each component in the scoreboard. SaskPower should also clarify with project proponents whether shortlisted developers in the current competition have to go back to the starting line or are offered preferential treatment in the next phase of competition.

Post-Secondary Education and Vocational Training Programs for Green Collar Jobs

One of the challenges expressed by several private sector developers is the dearth of educational and vocational training credentials and programs provided by post-secondary institutions that promote industry-specific skills, such as a solar or wind technician. For Saskatchewan developers to grow and succeed, they must have access to a pool of highly-skilled labour who possess the required competencies. Post-secondary institutions in Saskatchewan should actively reach out to the renewable energy industry in Saskatchewan with the goal of creating or tailoring existing programs and credentials around the skills required by employers in the renewable sector. Access to talent is critical.

Exploring Business Opportunities in Smaller, Alternative Renewable Energy Sources

While both wind and to a lesser extent, solar have attracted the lion's share of attention in relation to the renewables procurement process, developers should not forget about exploring investment opportunities in smaller, less visible forms of renewable generation like biomass. Prospective developers should be encouraged to explore opportunities to partner with pulp and paper mills or indigenous communities in Northern Saskatchewan on biomass development projects. Less visible markets such as these could have untapped potential.⁶⁰

Utility-Scale Projects and Regulatory/Permitting Hurdles in Rural Areas

Until recently, Saskatchewan for the most part does not have much experience dealing with utility-scale renewable energy projects. As more projects get developed over the next decade, current restrictions around who can and more importantly, who cannot own farmland under Part VI of The Saskatchewan Farm Security Act might pose substantial challenges for developers. Under the Act, a non-Canadian entity is prohibited from possessing aggregate land holdings in excess of 10 acres.⁶¹

Because large, utility-scale projects are typically situated on rural acreages. Such restrictions can limit the number of acres that can be held by a prospective developer who is a non-resident.⁶² The Farm Land Security Board is a quazi-tribunal body that meets regularly to carry out its duties under the Act. The board does have the authority to grant exemptions around farm ownership restrictions for non-

60 Ibid.

61 *The Saskatchewan Farm Security Act*. Statutes of Saskatchewan, 1988, P. 80 – 85. <http://www.qp.gov.sk.ca/documents/English/Statutes/Statutes/S17-1.pdf>

62 Wm. Christopher Porter. "Professional Perspectives: Make Legal a Breeze in Renewable Energy Projects." P. 35.

resident entities and has done so in the past.

Equally, if not more challenging to prospective developers attempting to acquire rights to Saskatchewan farm land for renewable energy projects are subdivision restrictions outlined in the Planning and Development Act. Under the Act, those attempting to lease or acquire rights to a portion of a parcel of land are required to obtain approval from the Saskatchewan Director of Community Planning. While there are several exemptions around the requirement to obtain permission, there are currently none pertaining to renewable energy development.⁶³

Developers need to do their homework around which permits are required under which act, as well as seek appropriate legal counsel that have specialization in this field of law. Not doing so could mean the difference between a developer realizing returns on a successful project versus a project being disqualified or declared invalid. The Chamber also recommends that developers engage early on with local stakeholders, such as landowners, Indigenous communities, and rural municipalities to gain their trust and earn their buy-in.

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⁶³ Christopher J. Masich. "Renewable Energy Development in Saskatchewan." P. 18.