



2017

# Powering Opportunities

**The SAAEP Regional  
Strategic Advantage  
in Renewable  
Energy**



Solar Optix Energy Services

6/29/2017

# Southern Alberta Alternative Energy Partnership



## Regional Strategic Overview 2017

Southern Alberta's Alternative Energy Partnership is an economic development initiative between SouthGrow, Economic Development Lethbridge, and Alberta SouthWest, encompassing forty member municipalities

[www.SAAEP.ca](http://www.SAAEP.ca)

### **SAAEP's Key Pillars:**

Track the development of renewable energy technologies and markets

Support communication and collaboration between regional communities, businesses, key industry partners and senior levels of government

Provide community partners with credible information, sustainable strategies, and motivation for incremental change

Build capacity for our communities and businesses to grow and attract new investment in alternative, renewable and clean technologies

### **#1 Regional Strategic Advantage:**

*Established history of success in regional renewable energy development, strong industry partnerships, and excellent education & training capacities*

## Historical Development

Since the construction of Canada's first wind farm in 1993, the South-west and South-central areas of Alberta have continued to experience strong development interest from various sectors of the renewable energy industry. Over the past 25 years, a robust **wind energy** sector has arisen, with a total installed capacity of 1,017MW at the end of 2016 (out of 1,500MW province-wide).

Approximately 60 service technicians and managers are employed to maintain this fleet of turbines. During construction, a 100MW wind facility will typically employ about 200 workers.

Extrapolated from economic impact indicators published by CanWEA (Canadian Wind Energy Association, 2014), the wind industry currently contributes over \$23 million per year to our region's municipalities, land-owners, and employees, which increases substantially during active construction years.



*The award-winning 166 turbine Blacksprings Ridge Wind Project, near the SAAEP-region community of Carmangay*

The City of Lethbridge hosts three of Canada's most significant **bio-energy** production facilities. Lethbridge Biogas is the country's largest biogas power-plant, collecting agricultural waste and generating clean energy. Invigor Bioenergy owns and operates a 71 million litre-per-year facility, currently raising capital to implement upgrades that would allow the plant to process a wider range of feedstocks. Grow-TEC, in Coaldale, run a sophisticated bio-gas facility, enhanced with Solar PV, to provide for the energy needs of their potato operations.

**Solar energy** is in the beginning stages of establishing a market presence in the SAAEP region. Featuring some of the best annual sun-hours in Canada, about 50% the AESO-listed proposed solar projects are in the SAAEP region. The 77MW Vulcan Solar Project, proposed within the perimeter of the Blacksprings Wind Project, would create one of the largest wind/solar hybrid projects in North America.

Numerous **run-of-river** hydro plants also dot the landscape, tapping into the region's extensive irrigation canal network, with an aggregated capacity of approximately 80MW.

## Current Market Outlook

### The AESO REP

The Alberta Electricity Systems Operator (AESO) officially began accepting applications to Round 1 of its new Renewable Electricity Program (REP) in May of 2017. Qualified developers are expected to be notified by September, with a RFP being issued immediately thereafter, and winning bids to be announced by December. Selected projects will be required to be operational by December 1, 2019. Subsequent rounds of procurement are to follow.



[Click here to learn about the AESO REP](#)

### AESO Interconnection Queue

A database of projects applying for interconnection to Alberta's electricity grid can be accessed at the AESO website. Updated monthly, the majority of projects listed are now in renewable energy (wind and solar). Proposed projects listed in the SAAEP region total 1,683 MW of wind energy (including unlisted Enmax Zephyr project near the Taber), and over 900 MW of solar energy. Based on estimated capital costs of \$2M per megawatt, this equates to approximately \$5B in potential new investment, if all projects were to be approved and constructed.

### Provincial Solar Rebate Program

Alberta has launched an exciting, yet prudent solar electricity rebate program. It offers opportunities for residential, commercial, agricultural, and municipal customers to install solar PV on sites and buildings across the province. The program has been allocated initial funding of \$36M, and could lead to 900 new solar jobs by 2019. The industry, already enjoying a 90% a year growth rate in the province over the past five years, is expected to experience heightened growth starting in Q3-2017.



## **The SAAEP Region's Strategic Renewable Energy Advantage**

### ***Established history of success in regional renewable energy development***

A robust wind energy industry is based in the region, one of North America's first. Since 2007, over \$1.25B has been invested in the construction of six wind-farms totaling 628MW of capacity (calculated at an average of \$2M per MW CAPEX). And it is now common knowledge that Southern Alberta has some of the best wind and solar energy resources in North America.

### ***Strong industry partnerships***

From 2006 to 2010, SAAEP worked with members of the bio-energy industry to assess the feasibility of development in the region, such as Lethbridge Biogas and Invigor Bio-energy. In addition, SAAEP partner Alberta SouthWest has engaged with Vestas and TransAlta to enable wind-farm tours for potential investors, government, and the public.

### ***Excellent education & training capacities***

Lethbridge College has unveiled a major new Trades & Technology facility, which includes dedicated spaces for its world-class Wind Turbine Technician program. Its Corporate and Continuing Education department is exploring solar education offerings for the public, as well as a solar installation course. Lethbridge University has become a leading Canadian post-secondary institution, celebrating its 50<sup>th</sup> anniversary. With the construction of a major new, 36,000 square metre science & innovation facility now underway, the university is well-positioned to develop future leaders in Alberta's renewable energy sector.



## Selected Key Contacts

### Alberta SouthWest

Bev Thornton, Executive Director  
403.627.3373  
[bev@albertasouthwest.com](mailto:bev@albertasouthwest.com)

### Southgrow Regional Initiative

Pete Lovering, Advisor  
403.394.0615  
[pete.lovering@southgrow.com](mailto:pete.lovering@southgrow.com)

### Economic Development Lethbridge

Trevor Lewington, Executive Director  
403.331.0022  
[trevor@choosethbridge.ca](mailto:trevor@choosethbridge.ca)

### Lethbridge College

Colin Wynder, Interim Chair, School of  
Construction Trades and Renewable Energy  
403.320.3202 ext 5490  
[colin.wynder@lethbridgecollege.ca](mailto:colin.wynder@lethbridgecollege.ca)

### University of Lethbridge

Dr Greg Vilk, Director, Industrial Relations  
Liaison Office  
403.317.2860  
[greg.vilk@uleth.ca](mailto:greg.vilk@uleth.ca)

### Environment Lethbridge

Kathleen Shepherd, Executive Director  
403.330.6241  
[info@environmentlethbridge.org](mailto:info@environmentlethbridge.org)

### TransAlta

Jorges Aviles, Manager, Stakeholder  
Relations  
403.267.2556  
[jorge\\_aviles@transalta.com](mailto:jorge_aviles@transalta.com)

### Alberta Economic Development & Trade

Linda Erickson, Manager, Regional Economic  
Development Services  
403.381.5842  
[linda.erickson@gov.ab.ca](mailto:linda.erickson@gov.ab.ca)  
Holly Driscoll, Manager, Renewable Energy  
780.427.6643  
[holly.driscoll@gov.ab.ca](mailto:holly.driscoll@gov.ab.ca)

### EDF-EN

Kimberli Kenna, Community Relations  
Blacksprings Ridge Wind Project  
403.671.4000  
[kimberli.kenna@edf-en.ca](mailto:kimberli.kenna@edf-en.ca)

### Canadian Wind Energy Association

Evan Wilson, Western Regional Director  
403.891.8640  
[evanwilson@canwea.ca](mailto:evanwilson@canwea.ca)

### Canadian Solar Industries Association

1.866.522.6742  
[info@cansia.ca](mailto:info@cansia.ca)

### Solar Energy Society of Alberta

Rob Harlan, Executive Director  
780.443.7788  
[office@solaralberta.ca](mailto:office@solaralberta.ca)

### Lethbridge Biogas Ltd

Ed Mulder, Plant Manager  
403.328.1429  
[ed@ecbna.com](mailto:ed@ecbna.com)

# ALBERTA'S

Renewable  
Energy  
Opportunity



5,000MW of Power



900-2500 New Jobs per  
Year (Pembina Institute,  
2016)



\$10B in New Investment

*Est. 2006*

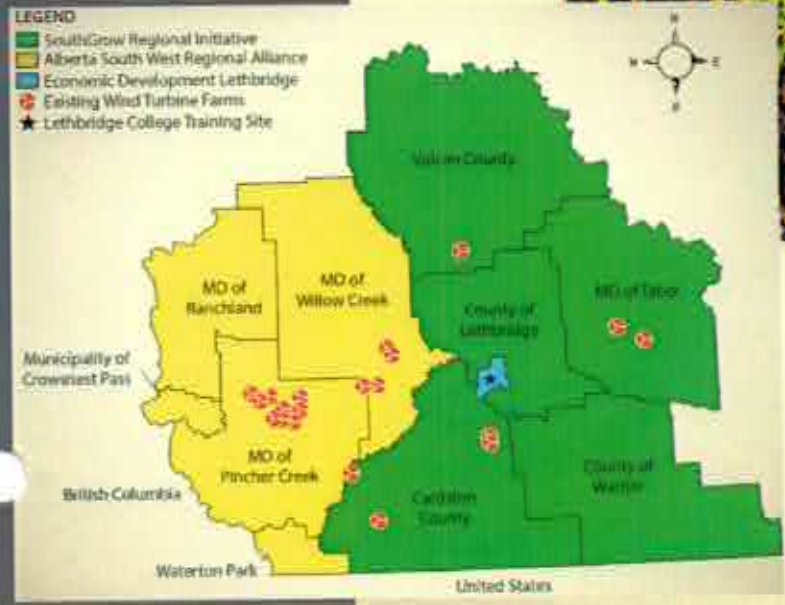
# SAAEP

Southern Alberta's  
Alternative Energy Partnership

## The SAAEP Region Hosts:

- Operational Wind: 1,017MW
- Proposed Wind: 1,748MW
- Proposed Solar: 900MW
- 3 Top-tier Bioenergy Facilities

World-class Wind Turbine  
Technician Program



**ALBERTA'S RENEWABLE ENERGY  
DEVELOPMENT STRATEGY:**



5,000MW of New  
Renewable Energy  
by 2030



\$10 Billion in New  
Investment



900-2500 New Jobs  
per Year (Pembina, 2016)

# SAAEP

Southern Alberta's  
Alternative Energy  
Partnership

[www.SAAEP.ca](http://www.SAAEP.ca)

**READY TO GO!**

## THE SAAEP REGION:

Operational Wind: 1,017MW

Proposed Wind: 1,683MW

Proposed Solar: 00MW

3 Top-tier Bio-energy Facilities

World-class Wind Turbine

Technician Program



# SAAEP

[Southern Alberta Alternative Energy Partnership](#)

## Investor Fact Sheet

In 2017, the Alberta renewable energy market progresses from ambitious change mandate to a solid electricity diversification program. The government's overall target is the phase out of all coal power in the Alberta electricity mix by 2030, while gradually developing approximately 5,000MW of new renewable energy projects.

### The Alberta Electricity System Operator's Renewable Energy Program (AESO REP Round 1):

- An auction for 400MW of renewable energy (wind, solar, hydro, and to a more limited degree, biomass). Selected projects are required to be operational by 2019. Additional power calls will be conducted annually
- Is primarily scored on a competitive price per MWh basis. Winning proponents will be awarded a "contract-for-differences", which complements the floating power pool price with a long-term contract at a fixed bid price. [More information](#)
- Projects must be equal to or greater than 5MW, and meet the Natural Resources Canada [definition](#) of renewable energy
- AESO is developing a new [Capacity Market](#) for electricity, through which it will procure future rounds. A Capacity Market combines a long-term contract at a fixed price with the floating demand-based power pool price
- Auction moves through three stages: Request for Expressions of Interest, Request for Qualifications, Request for Proposals
- 20 year fixed-term contracts, to be awarded by December 2017
- The [Alberta Carbon Levy](#), and related renewable energy development, is expected to generate \$5.4B over three years, and attract approximately \$10B in investment



## **SAAEP Region Projects Sampler**

Alberta's South-west region contains 1,683MW of proposed wind projects, and over 900MW of proposed solar projects. Some example projects potentially seeking investment are listed below.

### **Renewable Energy Services Ltd**

#### [McLaughlin Wind Project](#)

Project Type: Wind

Location: Pincher Creek

Capacity: 75MW

Investment Offering: More information by request

#### **Phase 2 Solar Expansion**

Project Type: Solar PV

Location: Pincher Creek

Capacity: 40MW AC

Investment Offering: More information by request

Contact: Kevin Doucette, 902.401.8869, [kdoucette@resl.ca](mailto:kdoucette@resl.ca)

### **Invigor Bioenergy Corporation**

#### [Lethbridge Biodiesel Plant](#)

Project Type: Processing Refinery

Location: Lethbridge County

Capacity: 71M litre/year

Investment Offering: More information by request

Contact: Dan Kerridge, VP of Finance: Office 403.243.4584, [dan@invigor-energy.ca](mailto:dan@invigor-energy.ca)

## Optimist Wind Energy

Project Type: Wind

Location: Pincher Creek

Capacity: 1MW, with expansion potential to ~3MW

Investment Offering: Outright Sale

Contact: Joanne Elves, Co-owner, 403.819.5954, [jeleves@telus.net](mailto:jeleves@telus.net)

## TERIC Power Ltd.

### **Whitla PV Solar Project**

Project Type: PV Solar

Location: Whitla, AB

Capacity: 25MWac

Investment Offering: More information by request

### Cavendish PV Solar Project

Project Type: PV Solar

Location: Cavendish, AB

Capacity: 25MWac

Investment Offering: More information by request

### Dunmore PV Solar Project

Project Type: PV Solar

Location: Dunmore, AB

Capacity: 15MWac

Investment Offering: More information by request

Contact: Craig Barnes, 403-660-5236, [craig.barnes@tericpower.com](mailto:craig.barnes@tericpower.com)

## ***Upcoming Key Industry Event***

### **The Alberta-Saskatchewan Renewable Energy Finance Forum**

**June 5-6 2017**

[Full Agenda link](#)

"With the launch of the first round of competitive bids for renewable energy projects underway, Alberta and Saskatchewan are moving forward steadily with their ambitious renewable energy goals for 2030.

Developers and lenders are now looking for clarity on current and future competitions and a deeper understanding of the regulatory and market changes shaping renewables success in these crucial markets which together represent over 7,000 MW in project potential over the next 13 years."

-Canadian Clean Energy Conferences



# SAAEP; Powering Opportunities

## Project Mid-Term Report: April, 2017

Randyn Seibold, Project Lead (250) 505.6553 [randyn@solaroptix.ca](mailto:randyn@solaroptix.ca) Office 403.360.8235

Beginning in late December, the project's scope of work to date has been focused on four areas:

- Review of existing SAAEP website and document library, including hard copies of project materials, press, email correspondence from the 2006 to 2010 phase of the initiative, and in communication with the SAAEP steering committee;
- Sourcing and review of current (2015 to Present) industry, NGO and government publications related to renewable energy market and policy development, nationally, globally, and in Alberta specifically, and through direct communication with members of industry;
- Attending and representing SAAEP at industry-related events
- Beginning construction of a new website, using the Wordpress platform

## Project Team

Randyn Seibold – Research, networking, web content development

Bryce Allred – Master electrician, solar expert, life-long area resident

Erika Grintals – Administration, research

## **Defining Primary Objective of SAAEP**

SAAEP's primary purpose in representing the Southgrow/Lethbridge/SW Alliance region in relation to the renewable energy industry is economic development, as opposed to education or demonstration per se. However these aspects are important planks supporting the success of the economic development agenda.

This helps to define the role of the SAAEP partnership as a representative stakeholder vehicle, able to provide communities and industry with an informed, supportive voice at the table when projects are proposed in the region.

## **SAAEP Region Renewables in Focus**

There are seven primary forms of renewable energy, including energy efficiency. Within the SAAEP region, three in particular are most prevalent: Wind, Solar, and Bio-energy. Opportunities to develop Geothermal may exist in specific locations, especially in relation to repurposing oil and gas wells.

### **Wind Energy**

The following statistics are from the CanWEA Vision 2025 (2014) publication.

"Wind energy development pays significant economic dividends. Every 150 MW of new capacity represents:

- \$316 million in investment
- 140 full-time equivalent jobs in construction
- 10 permanent jobs in operations and maintenance

- \$17 million in lease payments to landowners over 20 years
- \$31 million in property tax payments to municipalities over 20 years”

**Based on these estimates, extrapolated across a regional installed capacity of 1,179MW (as of 2016), wind energy contributes approximately \$23,264,000 annually to the local economy.**

As a rule, wind energy represents a positive source for diversified economic activity, with productive, easy-to-access sites from the Crowsnest Pass to Taber, and beyond the SAAEP region to the Cypress Hills.

At the end of 2016, Alberta had 900 turbines, providing 1,500MW of capacity, representing about 7% of total electrical generation capacity in the province’s energy mix (with actual output providing for about 5% of the province’s needs). The majority of these facilities are located in the SAAEP region.

The AESO queue presently lists over 8,000MW of proposed wind projects, with 1,082MW (across ten projects) sited in the SAAEP-represented region. The 2017 AESO power call is for 400 megawatts of new renewable energy, with similar calls to occur in subsequent years. This clearly demonstrates there is now greater regional competition for wind development in Alberta.

In January, introductory discussions by the project lead were held with two representatives from CanWEA; Evan Wilson of the Western Regional office, and Phil McKay from the new Operations & Maintenance branch. The association is hosting an Alberta Summit, May 9, in Edmonton, which we are scheduled to attend.

## **Solar Energy**

The city of Lethbridge receives, on average, 333 days of sunshine per year, making it one of the best region’s in North America for solar energy. The growth rate of solar in Alberta over the past several years is approximately 80%, even in the absence of broad financial incentives. With the provincial government’s introduction of rebates for municipalities (AMSP) and agricultural producers (Growing Forward 2), the rate of solar installation has climbed even higher. The

most pronounced impact should to come from the newly-announced Solar rebate for homes and businesses, expected to begin accepting applications in June.

Utility-scale solar power facilities are a new development for Alberta. The largest installation to date is the 2 MW Green Acres Hutterite Colony project near Brooks. 2018/2019 will see the construction of the first true utility solar projects, exclusively for electricity export to the power pool.

One of the front-runner project is the 77MW-AC EDF Vulcan solar facility, integrated into the Blacksprings Ridge Wind Project. When completed, it will be among the largest wind/solar hybrid power plants in North America. The construction of at least one solar farm in response to Infrastructure Alberta's call that solar power be contracted for up to 50% of provincial operations is expected to occur in 2017.

The AESO project queue (March) currently lists 1,737 MW of solar proposed solar projects. A total of 692.6 MW are being proposed in SAAEP-region areas.

## **Bio-Energy**

From liquid fuels like ethanol and biodiesel, to biomass wood pellets, to bio-methane steam turbines, significant opportunities exists in bio-energy. This includes both for regional producers, as well as potential refineries or manufacturers. A key criterion for both the cost-effectiveness and carbon values of bio-energy is the utilization of waste resources, such as B-grade seed, maize residuals, manure, carcasses, and other agricultural or municipal waste-streams.

Attempts to develop bio-refineries in the SAAEP region were launched, with limited success. This was due in large part to the short-term support for the industry, regulatory hurdles, and uncertainty around blending mandates.

The former Kyoto Fuels plant south of Lethbridge has been acquired by Invigor Bioenergy Corporation, which is currently raising \$5M in working capital to re-start the facility.

Lethbridge Biogas, constructed in 2013, is generating 2.8 MW of electricity, and providing a competitive, sustainable waste disposal option for the region's farmers, while returning to them improved fertilizer by-product. Following the



German model, an increased presence for on-farm biogas digesters and energy production in Southern Alberta should be encouraged and explored further.

### **Some Specific Actions to Date**

- ✓ Thorough review of community consultation, wind, solar, and bio-energy documentation on current SAAEP website
- ✓ Consultation call with Doug Hooper, Waterfall Group, re: new Bio-Energy policy development in AB, and Stefan Michalski, Lethbridge Biogas, and Dan Kerridge, Invigor Bioenergy
- ✓ Consultation calls with CanWEA directors (Western Region and O&M)
- ✓ In-person meeting with John Kolk, former chairperson of SAAEP initiative
- ✓ Attendance at Alberta AgSociety Expo & Convention
- ✓ Attendance at SEEDS Energy Symposium at Medicine Hat College
- ✓ Build Excel spreadsheet of current companies and resources in renewable energy, based or active in the SAAEP region. Includes companies AB-wide
- ✓ Review of CanWEA's Best Practices for Community Consultation guide
- ✓ Begin new website design and construction on Wordpress platform
- ✓ Register for attendance at CanWEA Alberta Summit, May 9, and SolarWest Conference (partial), May 9-11, in Edmonton
- ✓ Review of Farmer's Advocate Office land-owner lease negotiation guide

- ✓ Participate as panelist with the Farmer's Advocate Office information local sessions (Taber and Lethbridge County), on negotiating land-leases for wind and solar projects
- ✓ Review of AESO Renewable Energy Support Agreement provisions

## Provincial Interim Report Q&A Format

### 1. *Are the project timelines still in alignment with the Project Proposal?*

The project timeline has been accelerated, with final report expected by end of July at latest

### 2. *What milestones did you achieve (with reference to the original grant proposal)?*

- Completed full review of all archived SAAEP research and data
- Compiled industry database of renewable energy companies with offices or operations (current or planned) in the SAAEP region
- Designed and developed new website, with soft-launch and hand-over for May 1
- Communicate with all SAAEP community representatives and issue survey regarding renewable energy readiness and their desired outcomes
- Participated as a "industry expert" alongside the Farmer's Advocate Office, during its land lease negotiation sessions for wind and solar in southern Alberta.

### 3. *What interactions with industry partners took place?*

- Conference call with TransAlta Renewables stakeholder relations staff Kristen Warder and Jorge Aviles
- Presentation and follow-up email Q&A with Ryan Dick, Terrapin Geothermics. Communication on-going
- Introductory call, Stefan Michowski, Lethbridge Biogas
- Introductory call, Doug Hooper, Waterfall Group (bio-energy)
- Introductory call, Dan Kerridge, Invigor Bioenergy Corp
- Introductory call, Chris Perry, GrowTEC Bioenergy
- Introductory call, Evan Wilson, CanWEA Western Director
- Introductory call, Sherry Poole, Coordinator for SAEWA (Southern Alberta Energy-from-Waste Association)
- Introductory call, plus presentation and on-going communication with Ryan Dick, Terrapin Geothermics, regarding well-head geothermal
- Introductory call, David Heyboer, Enbridge/Blacksprings Ridge Wind
- Introductory call, Dan Tocher, Greengate Power/Stirling Wind
- Phone interview, Phil McKay, CanWEA O&M Director
- Introduction and on-going communication with Cornelis Koster, Western Business Manager, GP-Joule Inc

- Introduction and on-going communication with Ryan Tourigney, Western Canada Business Manager, Canadian Solar/C&B Solar
- Introduction and on-going communication with Ian Sanchez, Managing Director, Bowmont Capital Inc
- Introduction and on-going communication with Joan Cannon, coordinator for the Alberta Green Economy Network (AGEN)
- Introduction calls and on-going communication with David Warner, EDF Development Manager, and Catherine Morin, Project Manager (Vulcan Solar project)
- Attend and participate in Capital Power/Pembina Institute best practices consultation session for wind energy

4. *Please report any commercial outcomes (may include direct outcomes such as training of new skilled personnel, development of intellectual property, or indirect outcomes such as products or processes, Alberta companies generated, new linkages to additional industry partners, added impact to Alberta industry partners, such as increased revenues, investment attracted, etc.)*

- New SAAEP website built and launched (May 1)
- Proposal received from Decentralized Energy Canada for training and capacity-building in distributed renewable energy for municipal staff and elected officials
- C&B Alberta Solar Development and Teric Power to present to Universal Energy, a Chinese investment delegation visiting the SAAEP region on April 28. SAAEP Partners coordinating with Provincial staff to organize tour

5. Have there been any revisions to the project's funding model, as stated in the Project Proposal?

- No

6. How has IAE funding been spent?

- Wages
- Website registration and subscription
- Event ticket purchases
- Travel (mileage, accommodation, meals)
- Administration

7. Other Comments

Two significant events remain to be organized and executed within the constraints of the budget balance:

- Attendance at CanWEA/CanSIA industry conference, Edmonton, May 9-10
- Plan and host SAAEP Energy Mixer, Lethbridge, May 26

## EXCERPT FROM PROJECT PLAN

### **1. Conduct research to support opportunity development**

#### **Review SAAEP website and regional reports, documents and maps; identify required updates.**

Website reviewed

Hard copy records of SAAEP Green Growth Plan, biofuels feasibility study etc reviewed

#### **Conduct primary and secondary research, as needed.**

Canadian renewable energy industry, Alberta electricity sector, reports sourced and reviewed.

Ongoing

#### **Liaise with research agencies/industry associations; conduct community/business consultations.**

Telephone consultations engaged with all SAAEP region members

Online survey issued to 39 member municipalities

Telephone consultations with industry stakeholder representatives (bioenergy, wind, solar, geothermal)

Attendance at German/Canadian Industry Chamber wind & solar event

Participate with Farmers' Advocate Office information sessions on land lease negotiation for wind/solar

Attend and network at Southeast Alberta SEEDS event at Medicine Hat College

Participate in Capital Power/Pembina Institute wind energy best practices consultation session

#### **Compile inventory of businesses in the region related to alternative/renewable/clean tech.**

Significant progress to date on inventory database

Expanding format to include Alberta-based companies

Additional businesses and final formatting pending

#### **Identify baseline measures for business activity and economic impact of alternatives/renewables.**

Wind energy is the most significant renewable energy contributor to the local economy at this time. Wages, land-owner lease payments, and municipal taxes totals approximately \$23,264,000 annually (based on CanWEA estimates of revenues and jobs per 150MW, and regional installed capacity of 1,179MW)

Estimated bio-energy economic impact from three facilities (Grow-TEC, Lethbridge Biogas, Invigor Bioenergy):

#### **Identify gaps, issues, barriers related to investment in renewables: regulations, procedures, zoning.**

Biggest barrier is local community inertia, opposition towards new development

MCCAC funding model precludes aggregated sites for municipal solar development (micro-gen)

Difficulty in accessing suitable land for solar, without impacting either productive agricultural land or native prairie. New "solar zoning" needed?

AESO Renewable Energy Program being rolled out "piecemeal", clarity required regarding on-going procurement schedule (Industry concern)

**Identify regional assets and opportunities, including those that may be underutilized.**

**Identify industry cluster opportunities as may be related to tourism agriculture, manufacturing, consulting, etc.**

**Identify and define competitive advantages of SAAEP region.**

*Key Advantage: Established track-record of regional renewable energy development, industry partnerships, and education/training capacity*

## **2. Re-build website to accommodate updated and new content and functionality**

**Recommend web content plan and functionality needed to accommodate updated content and messaging.**

Beta completed. Wordpress engine. Presented to municipal membership for initial feedback (Issued April 13), and submission of community profile content, to be received and uploaded during balance of contract

## **3. Develop messaging and implement communications plan**

**Communications Part 1: Re-vitalize SAAEP and engage regional stakeholders and partners.**

Robust attendance and networking presence at numerous events related to renewable energy taking place in the region and in Calgary/Edmonton. Actively raising profile of SAAEP and its mandate with key stakeholders

**Communications Part 2-Establish SAAEP as a resource for communities/businesses/government**

Website's public launch set for May 1, with media engagement and related public event in Lethbridge May 25, to follow

**Develop key messages to promote regional awareness and competitive advantage**

*Main Strategic Advantage: Established track-record of regional renewable energy development, industry partnerships, and education/training capacity*

**Secondary Strategic Advantage:** *Exceptional convergence of wind, solar, and bio-energy productivity profiles through-out region*

Define SAAEP audiences; develop media plan (newspapers, social media, newsletters, events, etc.)

Conduct necessary relationship-building activities: networking, presentations, events, consultations.

Develop strategies and information to support work of sponsor organizations and regional EDOs to identify and develop opportunities in rural and urban communities.



**SOUTHERN ALBERTA ALTERNATIVE  
ENERGY PARTNERSHIP  
Municipal Training Session**

Submitted to:  
Randyn Seibold, SAAEP Project Development Lead

Proposal Prepared by:



**March 2017**

## Objectives

The scope of this work includes three training components:

1. Technology performance and project feasibility for solar, wind and bioenergy,
2. Quantifying carbon offsets and participating in carbon markets, and
3. Project valuations, financing strategies and partnership opportunities.

## Completion Criteria & Metrics

Criteria	Metric
<p><b>WP1 Technology Performance &amp; Project Feasibility</b></p> <p>Introduction to Project Feasibility Analysis, focuses on three streams of alternative energy:</p> <ul style="list-style-type: none"> <li>• Solar</li> <li>• Wind</li> <li>• Bioenergy – (specific technology to be determined)</li> </ul> <p>Course content includes four components:</p> <ol style="list-style-type: none"> <li>1. Solar project analysis               <ul style="list-style-type: none"> <li>• An introduction to solar energy technology</li> <li>• Analysis of solar projects</li> <li>• Analysis of alternative solar technology projects</li> </ul> </li> <li>2. Wind project analysis               <ul style="list-style-type: none"> <li>• An introduction to wind energy technology</li> <li>• Analysis of wind projects</li> <li>• Analysis of alternative wind technology projects</li> </ul> </li> <li>3. Bioenergy project analysis               <ul style="list-style-type: none"> <li>• An introduction to bioenergy technology</li> <li>• Analysis of bioenergy projects</li> <li>• Analysis of alternative bioenergy technology projects</li> </ul> </li> <li>4. Tracking the ongoing performance of an energy project               <ul style="list-style-type: none"> <li>• An introduction to linear regression</li> <li>• Application of cumulated sum of deviations</li> <li>• An introduction to control charts</li> <li>• Importing consumption data and accessing NASA data</li> <li>• Producing reports</li> <li>• Portfolio analysis</li> </ul> </li> </ol>	<p><b>DEC Lead: Michael Ross</b> Training manual, course delivery and project case studies selected by SAAEP</p>
<p><b>WP2 Quantifying Carbon Offsets &amp; Participating in Carbon Markets</b></p> <p>Course content includes four components:</p> <ol style="list-style-type: none"> <li>1. Regulations               <ul style="list-style-type: none"> <li>• An overview of different types of regulations – Traditional/Market/Innovation</li> <li>• Thinking like a regulator – when and where different</li> </ul> </li> </ol>	<p><b>DEC Lead: Christine Schuh</b> Training manual, course delivery and emission offset calculations for basic projects selected by SAAEP</p>

<p>types of regulations are applied</p> <ul style="list-style-type: none"> <li>o Objectives</li> <li>o Demographics</li> <li>o External Influences</li> </ul> <p>2. Taxes</p> <ul style="list-style-type: none"> <li>• An overview of different types of taxes</li> <li>• Application of carbon taxes in Canada</li> <li>• Analysis of tax revenue in different provinces</li> <li>• Implications of carbon taxes to consumers and business</li> </ul> <p>3. Carbon Markets</p> <ul style="list-style-type: none"> <li>• A discussion of Cap and Trade and Baseline and Credit systems</li> <li>• Implications of the style of market for large final emitters</li> <li>• Designing markets: the factors, pre-requisites, typical rules</li> <li>• Market participants: their roles, responsibilities, and opportunities</li> </ul> <p>4. Quantification of Carbon Credits/Offsets</p> <ul style="list-style-type: none"> <li>• Policy and Science: an overview of the basic elements in estimating emission reductions: <ul style="list-style-type: none"> <li>o Sources/Sinks/Removals</li> <li>o Emission Factors</li> <li>o Life-Cycle Approaches</li> <li>o Baseline Selection</li> <li>o Functional Equivalence</li> <li>o Boundaries</li> <li>o Uncertainty</li> </ul> </li> </ul>	
<p><b>WP3 Project Valuations, Financing Strategies &amp; Partnership Opportunities</b></p> <p>Course content includes three components:</p> <p>1. Project Valuations</p> <ul style="list-style-type: none"> <li>• Clean energy equity hurdle rates applicable to owner based on timing of sell-down, remaining risk profile of the project <ul style="list-style-type: none"> <li>o At bid ready stage</li> <li>o Upon notice to proceed (award in hand, construction risk remains)</li> <li>o At commercial operation date</li> </ul> </li> <li>• Buyer categories <ul style="list-style-type: none"> <li>o Strategics</li> <li>o Financial investors - infrastructure funds, pension plans</li> <li>o Life insurance companies</li> </ul> </li> </ul> <p>2. Financing Alternatives</p> <ul style="list-style-type: none"> <li>• Project versus corporate level financing</li> <li>• Holdco term B debt</li> </ul>	<p><b>DEC Lead: Jeff Vergouwen</b> Training manual, course delivery and sample project valuations selected by SAAEP</p>

<ul style="list-style-type: none"> <li>• Project attributes required to enable project level debt</li> <li>• Lender risk mitigation techniques</li> <li>• Typical financing terms in clean energy             <ul style="list-style-type: none"> <li>○ Amount of debt</li> <li>○ Interest rate and step-ups</li> <li>○ Fees</li> <li>○ Amortization term</li> <li>○ Debt service coverage ratio requirements</li> </ul> </li> <li>• Lenders active in clean energy in Canada</li> </ul> <p>3. Partnering in Clean Energy</p> <ul style="list-style-type: none"> <li>• Strategic rationale for partnering</li> <li>• Common partnership structures in Canada</li> <li>• Risk allocation techniques</li> <li>• Potential for incumbent developer to create value pre-partnership</li> <li>• Examples of potential partners in Canadian clean energy space</li> </ul>	
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### Project Acceptance

A SAAEP contact must be identified as the primary lead on this work and will decide if the project is completed and successful.

### Project Milestones and Deliverables

DEC is proposing a start date of June 1<sup>st</sup> 2017. The value of the full scope of work is \$19,500 plus GST assuming 13 days of work including course design, case study identification and delivery. Each of the three components of this proposal can be treated as independent projects if preferred.

### Milestone Payment Dates and Amounts

Deliverable	Amount (exc. GST)
WP1	\$7,320
WP2	\$6,090
WP3	\$6,090

DEC will perform the schedule of work outlined in this Contract, and provide the milestones and deliverables as stated above. Upon completion of milestones and deliverables, DEC shall submit invoices and supporting documentation and will provide electronic invoices to the SAAEP lead contact. DEC is federally registered under the Corporations Act of Canada and does charge GST on services.

### Assumptions

It has been assumed that SAAEP has a selection of priority projects under consideration, and the details of these projects will be provided in a timely manner.

## Project Team

For the purposes of this proposed project, DEC will draw upon the efforts and expertise of the following DEC team members for this scope of work. If needed, DEC may use additional members of the team with direct industry experience to complement the core team.

### Anouk Kendall, President, DEC

Anouk was appointed President of Decentralised Energy Canada (DEC) in 2003 and is one of North America's leading authorities on decentralised energy.

Her continuous engagement with members and industry partners has contributed to the development of a national network of over 10,000 DE practitioners. She has over 20 years of experience in the energy and the environment fields with a unique combination of industry, government, academic and non-profit sectors.

She lived and worked in the UK for seven years where she conducted post-graduate research in bioenergy at the University of Leeds. She then worked for Leeds City Council as a Senior Energy Conservation Officer reporting under the UK's Home Energy Conservation Act (1995) which called for quantification of residential energy consumption and empowered local authorities' to improve residential energy efficiency.

Anouk holds several board professional positions including: Peer Reviewer for the Federation of Canadian Municipalities Green Municipal Fund and Municipalities for Climate Innovation Program, Member of the Board for the Green Building Technology Access Centre (GBTAC) at SAIT, Fellow of the Alberta Energy Futures Lab, Advisor on the Renewable Energy Committee at Calgary Economic Development, Advisor on the Renewable Energy and Conservation Committee at Lakeland College and member of the Marketing Committee of the Ontario Sustainable Energy Association.

She was born and currently resides in Calgary, Alberta and holds a B.Sc. in Geography from the University of Calgary.

### Danny Way, Project Manager, DEC

Danny Way holds an Engineering degree from the University of Calgary and has focused his career on sustainability in the energy industry. Danny has been involved in a number of entrepreneurial ventures while building a successful consulting career. Danny is experienced in energy projects including Nuclear Power, specifically Small Modular Reactors (SMRs), SAGD, conventional oil and natural gas, energy and emission strategies, operational management systems, operational risk assessments, solar integration planning, wind power forecasting, wind power impact studies, project feasibility studies, electricity market analysis, and a variety of Smart Grid projects, providing him with a solid knowledge base of the Calgary environment.

### Michael Ross, Technical Analyst, DEC

Michael has been with DEC since 2010 and brings over 20 years of experience working with energy systems and energy technologies. He has held research positions with CanmetENERGY and the Advanced Energy Systems Group of the Department of Technical Physics and Mathematics at Alvar Aalto University, Finland's premier engineering university. Since 2001, in addition to consulting extensively for RETScreen® International, Michael has provided his expertise for contracts in building energy modeling and energy efficiency, combined heat and power system evaluations, research on photovoltaic systems, wind energy resource assessment and site selection, assessment of icing losses and mitigation methods for wind turbines, quantification of greenhouse gas

emissions associated with various energy technologies, and inspection of residential solar thermal systems.

Michael has a Bachelor of Applied Science degree in Systems Design Engineering from the University of Waterloo.

#### **Jeff Vergouwen, Financial Analyst**

Jeff joined the DEC team in 2015 to provide economic modeling and financial evaluations for DE projects and businesses. He is a finance professional with over 20 years of experience focusing primarily on financial valuation, risk assessment and deal structuring for renewable energy, conventional power generation and power infrastructure. Responsibilities currently include project valuations for Suncor's renewable energy group and commercial valuation support to several renewable energy and infrastructure companies in Canada and the United States.

Jeff has provided expert testimony in the area of wind energy financial evaluation before the Nova Scotia Utility and Review Board. Jeff is also an experienced instructor, having developed and taught renewable energy financial modeling courses to several clients across Canada. He holds a Bachelor of Commerce from the University of Lethbridge and an MBA from the University of Calgary.

#### **Christine Schuh, GHG Quantification and Verification, DEC**

Dr. Schuh joined the DEC team in 2016 and brings over 20 years of national and international experience. She led the Canadian climate change practice for PricewaterhouseCoopers (PwC) for a decade. During that period she was responsible for developing the greenhouse gas assurance (verification) services, including training, infrastructure development and delivery. She developed and tested the verification methodology in Canada and assisted in extending the structured verification approach for multiple climate change systems (including ETS, WCI, Australian and Alberta) using an accounting based framework for PwC US and Global. She developed one of the first greenhouse gas verification standards for the Aluminum industry in early 2003. She is the co-facilitator for ISO 14064-3 on greenhouse gas assurance and authored the bulk of that standard. She was one of three experts that assisted in crafting the accounting standard on GHG assurance (ISAE 3410). She currently sits on the ISO international working group developing a standard on carbon capture and storage. She assisted in the verification content for the WRJ/WBCSD greenhouse gas standards on corporate and project accounting. She has worked with several governments (including Alberta, Quebec and British Columbia) in establishing greenhouse gas quantification methodologies that are consistent with science and general accounting principles and assisted with the design of policy elements. Recently, she has extended her knowledge of carbon trading systems to other applications and assisted Alberta Environment and Sustainable Development in developing a trading system for wetlands.

Dr. Schuh currently advises the Climate Change Emissions Management Corporation (CCEMC) on the integrity of offset projects (carbon credits). She has recently authored the Greenhouse Gas Verification Guidance at Reasonable Level of Assurance for Alberta Environment and Sustainable Development. Her unique blend of engineering and assurance theory, knowledge, and experience position her as one of the leading experts in the world on greenhouse gas verification.

#### **Ana Medina, Director of Stakeholder Relations and Communications**

Ana specializes in microfinance and small business operations with more than 10 years of experience providing training, technical assistance, research, marketing and communications

services to financial institutions and microfinance networks in Mexico and to non-profit energy associations in Canada.

She has a B.A. (Hons) in Economics from the National Autonomous University of Mexico, and a M.Sc. in Sustainable Energy Development from the University of Calgary. She completed a Master's Degree Research Project entitled: "Assessing Energy Consumer Behavior for the Healthy Homes Calgary Program", conducted on 40 homes in the City of Calgary. She found the HHCP might help the city to achieve its goals to reduce energy and water consumption and to reduce the GHG emissions in the atmosphere.

After graduating, Ana worked at the University of Calgary helping other researchers to build a Transparency Index for the oil and gas industry.

### Project Change Control Procedure

The following process will be followed if a change to this Scope Of Work (SOW) is required:

- A Project Change Request (PCR) will be the vehicle for communicating change. The PCR must describe the change, the rationale for the change, and the effect the change will have on the project.
- The designated Project Manager of the requesting party (Contractor or Client) will review the proposed change and determine whether to submit the request to the other party.
- Both Project Managers will review the proposed change and approve it for further investigation or reject it. Contractor and Client will mutually agree upon any charges for such investigation, if any. If the investigation is authorized, the Client Project Managers will sign the PCR, which will constitute approval for the investigation charges. Contractor will invoice Client for any such charges. The investigation will determine the effect that the implementation of the PCR will have on SOW price, schedule and other terms and conditions of the Agreement.
- Upon completion of the investigation, both parties will review the impact of the proposed change and, if mutually agreed, a Change Authorization will be executed.
- A written Change Authorization and/or PCR must be signed by both parties to authorize implementation of the investigated changes.

### Charter Approval

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Project Lead, Southern Alberta Alternative  
Energy Partnership  
Date:

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Anouk Kendall, President  
Decentralised Energy Canada  
Date:



Miistakis  
Institute

Proposal:  
Wind and Solar  
Decision Support  
Tools for Rural  
Municipalities in  
Alberta

Tracy Lee  
Kelly Learned



**Proposal: Wind and Solar Decision Support  
Tools for Rural Municipalities in Alberta**

January 2017

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## Contents

BACKGROUND.....	4
PROJECT PLAN.....	5
Project assumptions.....	5
Project objectives.....	5
Project outcomes.....	5
Potential Benefits.....	5
Phase 1: Baseline Research, Analysis, Engagement.....	6
Step 1: Understanding the Context.....	6
STEP 2: Baseline Research.....	6
STEP 3: Stakeholder Engagement.....	6
Engagement objectives:.....	7
Phase 2: Tool Development.....	7
STEP 1: Tool Development.....	7
STEP 2: Test the Tools.....	8
STEP 3: Tools Distribution and Training.....	8
STEP 4: Tool Evaluation.....	8
PHASE 1 DELIVERABLES SUMMARY.....	8
Summary Report.....	8
Stakeholder Engagement.....	8
Engagement Outcomes Report.....	8
PROJECT PROCESS OVERVIEW: PHASE 1.....	9
PROPOSED PROJECT BUDGET.....	10

## BACKGROUND

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"By 2030, renewable sources like wind and solar will account for up to 30 per cent of electricity generation," says Alberta's Climate Leadership plan.

The Government of Alberta's Strategic Plan lists "demonstrated leadership on climate change" as one of the five key priorities between 2016 and 2019. To do this, the Government is committing to expanding the use of alternative energy sources including wind and solar to improve both the environment and the health of all Albertans.

In 2016, the Government of Alberta will begin working to implement the climate plan and develop the details of its renewable electricity policy and relevant regulations. This will have direct impacts for municipalities, particularly rural jurisdictions that have the land base to support large scale wind and solar development. In discussions with several municipal staff, it has become apparent they are uncertain how renewable electricity regulations or development will affect them. What is their role in the regulatory and approvals process? How do we balance competing interests between agriculture, ecology and renewable development?

This project proposes to work with municipalities to understand their environmental, social, economic concerns and opportunities, and what support tools they may need to process applications for solar and wind development in their municipality. We will collaborate with various organizations (such as the Pembina Institute) and individuals to ensure we are providing the most up to date technological and regulatory information regarding wind and solar development. Miistakis will engage municipalities to identify support tools that would help them prepare for the approvals process of large scale wind and solar developments in their jurisdictions.

Our team is currently seeking funding for Phase 1 of this project: engagement with municipalities to determine issues and opportunities relating to wind and solar development and identification of the most appropriate approval process support tools.

# PROJECT PLAN

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## Project assumptions

- a. It is most likely that agricultural areas and grasslands will be the most desirable lands for development of large scale renewables such as wind and solar.
- b. Rural municipalities do not have mechanisms in place to address these types of applications for development.

## Project objectives

- a. Rural municipalities are able to proactively address applications for large scale wind or solar development in their jurisdiction.
- b. Understand the opportunities and barriers relating to development of wind and solar farms from a rural municipal perspective.
- c. Enable municipalities to proactively address the opportunities and barriers relating to development of wind and solar farms.

## Project outcomes

- a. Identified benefits and barriers are analyzed to recommend appropriate support tools to assist the municipal approvals process for large scale wind and solar projects.
- b. Rural municipal representatives understand and identify opportunities and barriers relating to the development of wind and solar farms.
- c. Support tools are developed.

## Potential Benefits

- Decision making at the municipal level regarding large scale wind and solar projects will be considered proactively and not reactively.
- Potential for less conflict between stakeholders (municipal, industry, conservation, provincial, landowners) by using an inclusive, transparent approach to identify and develop decision support tools.
- Decisions regarding large scale wind and solar projects will likely have reduced costs to developers due to decision tools being implemented and resulting in a quicker approvals process.
- Economic benefits may occur for rural municipalities as a result of large scale wind and solar development.

## Phase 1: Baseline Research, Analysis, Engagement

This phase will focus on working with municipal representatives (staff and Councils) to understand opportunities and barriers and potential support tools related to wind and solar development applications in their jurisdiction.

### STEP 1: UNDERSTANDING THE CONTEXT

We first need to ensure we are able to provide the municipal participants with the most relevant background information. Project partners will work together to inform the following:

- What is the current situation regarding solar and wind development in Alberta? Regulatory context, production, industry.
- What is the proposed/expected solar and wind production in the next 5, 10, 20 years?

### STEP 2: BASELINE RESEARCH

a. **Regulatory Review.** Pembina is undertaking a regulatory review of wind and solar development in Alberta. This research will be used to inform discussions with municipalities regarding opportunities and barriers for wind and solar development related to the municipal approvals process and help frame those discussions within the regulatory realities.

b. **Best Practices – Municipal Support Tools for Wind and Solar Applications.** Miistakis will work with partner organizations to complete a review (may include case studies) of best practices regarding municipal support tools related to wind and solar development applications from proponents. Some of the questions that may be explored include: how do other municipalities process development applications for wind and solar development; what are the requirements; are there common land use designations for renewable energy projects; are there guiding documents that are used to inform decisions?

### STEP 3: STAKEHOLDER ENGAGEMENT

Rural municipal representatives (staff and Council) comprise what we identify as key stakeholders for this project. We propose to use various tactics with municipalities to:

- Complete pre-engagement interviews to understand:
  - Are solar/wind energy development applications an issue they are addressing or may need to address in the future?
  - How familiar are they with the existing process and regulation regarding wind and solar approvals process in Alberta?
  - What questions do they have regarding wind and solar energy development in their municipality and on the landscape?
  - What would help them address the issues and opportunities of wind and solar energy?

- Would the inclusion of wind and solar industry representatives benefit the proposed process?
- What is the best way to engage municipalities to reach the project objectives (listed above)?
- Depending on the outcomes of the pre-engagement interviews, engage municipal representatives and other stakeholders as identified in previous step on potential items such as:
  - The relationship between the current regulatory framework and municipal decision making.
  - Potential barriers and opportunities of wind and solar development from their perspective.
  - Potential barriers and opportunities of wind and solar development from industry perspective.
  - Interest in identifying least conflict locations.
  - Identifying tools and/or products to address wind and solar development in their jurisdiction.

#### *Engagement objectives:*

- Key stakeholders are informed of the current regulatory framework regarding wind and solar development.
- Key stakeholders are informed of where they have influence in, or fit into, the regulatory process.
- Key stakeholders identify a suite of tools and/or products that would be most helpful to address wind and solar development applications and development in their area.

At the conclusion of this first phase of stakeholder engagement, a 'what we heard' report will be completed and distributed to stakeholders for feedback.

## Phase 2: Tool Development

This is a preliminary Phase 2 outline: to be refined at the conclusion of Phase 1.

### STEP 1: TOOL DEVELOPMENT

Based on the outcomes of the workshop in Phase 1, tools will be developed. A municipal toolkit for wind and solar development **could** include:

- Fact sheets
- Bylaw templates
- A methodology or guide for analyzing least conflict locations for wind and solar development
- Municipal case studies.

#### STEP 2: TEST THE TOOLS

The tools developed will be tested with partner organizations and stakeholders. Initial feedback will result in refinements of the tools prior to them being finalized.

#### STEP 3: TOOLS DISTRIBUTION AND TRAINING

This step will involve ensuring the tools are provided to and used by municipalities. Depending on what the tool is, we will develop a tailored outreach and training program. This could be as simple as providing a bylaw template and walking through the elements and approach to populating the template to an in person training session with staff to learn how to develop mapping for least conflict areas.

The details of this stage will be determined once the tools are known.

#### STEP 4: TOOL EVALUATION

Approximately six months after the tools are distributed and training has occurred, Miistakis will issue a survey to check in on tool use, questions or improvement suggestions. This may result in further refinement of the tools developed.

## PHASE 1 DELIVERABLES SUMMARY

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### Summary Report

Phase 1 will result in a summary report that outlines:

- The regulatory context for wind and solar development in Alberta;
- Best practice research and analysis on existing municipal support tools related to wind and solar decision making.

### Stakeholder Engagement

The intended outcomes for the engagement step in Phase 1 are to confirm with municipalities what support tools or toolkits would be the most helpful to them in order to support their decision making for wind and solar applications and development in their rural jurisdictions.

### Engagement Outcomes Report

Miistakis will develop a 'what we heard' report to outline recommendations resulting from the stakeholder engagement. This report will be distributed to stakeholders and feedback opportunities will be provided to ensure the next phase will develop what is needed and what will be the most helpful for them.

## PROJECT PROCESS OVERVIEW: PHASE 1

<b>Phase 1: Baseline Research, Analysis, Engagement</b>	
<i>Process Item</i>	<i>Benefit(s)</i>
<b>Step 1: Large Scale Wind and Solar Context</b>	
Context Discussion Paper	Municipalities will be up-to-date on the provincial goals and strategies related to renewable energy in Alberta: the regulatory context, what that may look like on the ground, potential benefits to municipalities and industry interests. Municipalities will also be informed on what the estimated solar and wind production in the next 5, 10, 20 years is in Alberta.
<b>Step 1: Baseline Research</b>	
Regulatory review	Stakeholders will be informed of the existing context and what that means for the local decision making/approvals process.
Existing municipal support tools	Stakeholders will have an understanding of the types of tools available to municipalities (for wind/solar development). This information may be used to inform the type of tools rural municipalities in Alberta will find most helpful for their decision making.
<b>Step 3: Stakeholder Engagement</b>	
Pre-engagement interviews and preparation	Project team will be enabled to tailor engagement to the needs of stakeholders and ensure the scope of the project is defined.
Engagement workshops	Stakeholders are better informed of current regulatory and solar/wind energy context.
	Stakeholders empowered through co-design of least conflict framework.
Provide recommendations on tool development	Project team is given mandate to develop specific support tools.
	Project team provides an outcomes report of phase 1 to stakeholders to ensure learnings are captured and process remains transparent. Information (report format) is shared with interested parties and opportunity to provide feedback.



# PROPOSED PROJECT BUDGET

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<b>Phase 1: Baseline Research, Analysis, Engagement</b>	
Project management	\$3,250.00
<b>Step 1: Setting the Context</b>	
Context discussion paper	\$2,950.00
<b>Step 2: Baseline Research</b>	
Regulatory review	\$3,250.00
Best practices: support tools	\$3,900.00
<b>Step 3: Key Informant Engagement</b>	
Pre-engagement interviews and preparation	\$7,060.00
Engagement/Workshop(s)	\$7,150.00
Outcomes report	\$2,340.00
	<b>\$29,900.00</b>

Phase 2 Budget will be determined based on outcomes from Phase 1 and is currently estimated to range between \$50,000 and \$100,000 depending on the tool(s) identified.

Project timeline will depend on when funding is secured.

## **Proposal contact information:**

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