

# The Economic Impact of Alternative Energy Projects in Southern Alberta 2019 – 2022

Alberta SouthWest Regional Alliance

Economic Development Lethbridge

SouthGrow Regional Economic Development



Primary research by Renewable Randolph Consulting



# Introduction

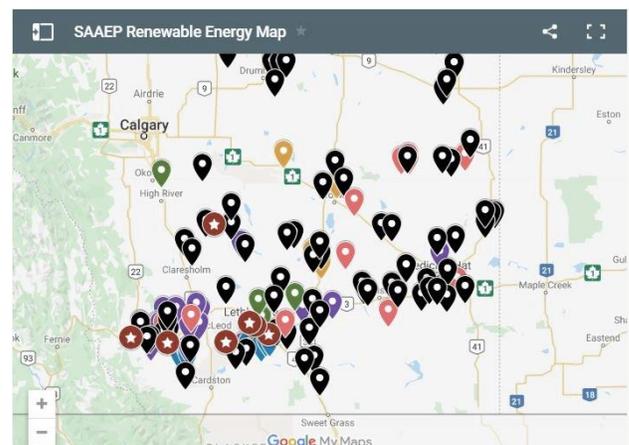
In 2007, the boards of three economic development agencies in southern Alberta signed a memorandum of understanding agreeing to work together for mutual purpose to promote the alternative energy assets of the region, inform and educate stakeholders about the opportunities in the development of new means of energy generation, and attract new investment in this industry. Every year, Alberta SouthWest, Economic Development Lethbridge, and SouthGrow committed dollars and drove the project forward together with shared messaging, marketing campaigns, research projects, training sessions and seminars, stakeholder forums, and more. The partnership that they formed is the Southern Alberta Alternative Energy Partnership (SAAEP), and the results of this effort have been one of the largest economic development successes that southern Alberta has seen.

Southern Alberta is well-served by high solar potential and some of the best conditions for wind generation in North America. On the strength of these natural resources, SAAEP's promotions took off to the point that everyone has adopted the core messaging that they began. Today, Southern Alberta is recognized globally as a top destination for new alternative energy projects, and investment is pouring into the region.

This report was commissioned in order to give stakeholders a sense of the scale of investment that is occurring, and the economic impacts that are accruing for Albertan's because of it. There are a few points that the reader should bear in mind while perusing the numbers below.

1. This report only profiles 9 fully approved projects slated for construction between 2019 to 2022. There are many more projects that have both preceded this window, or which are currently waiting for approval. A full list of alternative energy projects in southern Alberta can be found at [www.saaep.ca](http://www.saaep.ca)
2. Many industry experts regard 2017 as the 'break-even' year for alternative energy technology when the input costs fell low enough for large-scale projects to become profitable, without subsidies, on their own merits in Canada. Input costs continue to fall, and we anticipate that the rate of growth should accelerate.
3. It has clear that one of the only things holding back the growth of the industry is transmission capacity. This problem can be largely mitigated by the incorporation of emerging battery technology into generation projects in the coming years and a sustained effort in this direction should yield more integration capacity. Eventually, alternative energy generation in the province will hit a cap imposed by transmission capacity and thereafter grow at the rate of the grid's ability to integrate more.

With these facts in mind, the partners are pleased to present you with the primary data, which profiles over **1.5 Billion Dollars** in capital expense for the 9 profiled projects.



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# SAAEP Economic Impact Report

All numbers are estimates based on quoted sources in media reports on the projects, supported by direct consultations with proponents, and host communities where available.

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## CORE Assumptions: In Canadian Dollars

Per MW CAPEX assumption is \$1.3M/MW (wind and solar)

Acres required for solar farm construction equates to 6ac/MW

Landowner annual solar-farm land lease rate of \$600/acre

Landowner annual wind turbine land lease rate of \$10,000/turbine

Linear tax assessment revenues on solar energy facilities of \$10,000/MW (equivalency)

Linear tax assessment revenues on wind energy facilities of \$11,600/MW (equivalency)

Regional construction CAPEX percentage of spend is 10%

Average wages estimated at \$5,000/month (including overtime), multiplied by number of jobs, multiplied by project's estimated number of months under construction. Average wages for wind and solar energy skilled trades range from \$20-25/hour (construction and operations).

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## Research Methodology

In selecting "shovel-ready" alternative energy projects for inclusion in this report, those projects either entering construction, or with confirmed AUC approval, completed permitting, and/or with an executed Power Purchase Agreement in place were considered relevant.

Research sources for the information provided include company press releases, project web pages, industry news, and direct consultations with project developers and host municipalities. Notably, on the specific parameter of municipal land and linear tax revenues, consultation with Newell County, which hosts Alberta's first utility-scale solar facility adjacent to the Town of Brooks, was invaluable. By dividing the County's first year linear tax assessment revenues from this project (\$169,316), by the number of megawatts of project capacity (17 MW-ac), a benchmark value of \$10,000/MW was derived. A similar consultation was taken with Vulcan County, related to its tax revenues from the Blacksprings Wind Project (\$3,500,000 divided by 300MW = \$11,600/MW). Wind and solar worker average wage estimates have been sourced on payscale.com and indeed.com.

Land lease revenues for solar may be estimated by multiplying total project acreage under development by the average sample rate being contracted between project developers and land-owners (\$600/acre). Wind turbine

land lease payments are generally calculated on a per turbine basis, as the acreage under development is less uniform than with solar energy.

Regional construction expenditures include direct spending such as third-party contractors, building materials (concrete, fencing, etc), and indirect spending such as hotels, groceries, fuel, etc.

Estimates have been confirmed in consultation with a sample of the project developers listed, as being reasonable approximations of current industry economic impact benchmarks.

*Note: This report should be considered a high-level estimate of regional economic impacts of the most advanced-stage projects currently underway in the Southgrow and Alberta SouthWest regions, and is not necessarily a comprehensive inventory of all projects in the study area currently moving through permitting and towards construction. Other projects not listed here may be successfully developed and constructed, and not all projects included in this review may be successfully completed.*

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## Projects Evaluated

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1. Vulcan Solar Project (EDF-RE, Town of Vulcan)
  2. Stirling Wind Project (Greengate Power, Lethbridge County/Village of Stirling)
  3. Hays Solar Project (Canadian Solar, MD of Taber)
  4. Vauxhall/Hull Solar Projects (Innogy, MD of Taber)
  5. Riverview/CRR2 Wind Projects (Enel North America, MD of Pincher Creek, Town of Pincher Creek)
  6. Vulcan Solar Energy Centre Project (EDF-RE, Vulcan County)
  7. Travers Solar Project (Greengate Power, Vulcan County)
  8. Claesholm Solar Project (Perimeter Solar, MD of Willowcreek)
  9. Windrise Wind Project (TransAlta, MD of Willowcreek)
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## Construction Underway or Pending

### 1. EDF Vulcan Municipal Solar Project (10MW-ac)

Project Footprint: 60 acres

Overall Project CAPEX: \$15M

Local/regional construction spend: \$1.5M

Annual land lease revenues: \$45,000

Municipal linear assessment taxes levied (Town of Vulcan): \$100,000

Construction jobs: 50

Operations jobs: 1-2

Community Dev Fund:

Estimated year 1 regional economic impact: \$3,645,000

Main Contact: David Warner, [david.warner@edf-re.com](mailto:david.warner@edf-re.com), 647-523-3035

Sources: [Vulcan Advocate](#), Direct consultation

## 2. Greengate/Potentia Renewables Stirling Wind Project (113MW)

Project Footprint: 17,000 acres  
Overall Project CAPEX: \$160M  
Local/regional construction spend: \$16M  
Annual land lease revenues: \$150,000  
Municipal linear assessment taxes levied (Lethbridge County at 15 turbines): \$696,000  
Construction jobs: 200  
Operations jobs: 5-15  
Community Development Fund: Yes  
Estimated year 1 regional economic impact: \$22,846,000  
Main Contact: Dan Tocher, [dant@greengatepower.com](mailto:dant@greengatepower.com), 855-219-7207  
Sources: [Stirling Wind newsletter](#)

## 3. Canadian Solar Hays Solar Project (23MW-ac)

Project Footprint: 174 acres  
Overall project construction CAPEX: \$34.5M (estimated)  
Local/regional construction spend: \$4M (quoted)  
Annual land lease revenues: \$105,000  
Municipal linear assessment taxes levied (MD of Taber): \$230,000  
Construction jobs: Up to 200  
Operations jobs: 1-2  
Community Dev Fund:  
Estimated year 1 regional economic impact: \$11,835,000  
Main Contact: Ryan Tourigny, [ryan.tourigny@canadiansolar.com](mailto:ryan.tourigny@canadiansolar.com), 403-462-1882  
Sources: [Hays Solar newsletter](#) [www.haysolar.com](http://www.haysolar.com)

## 4. Innogy/Belectric Solar Canada Vauxhall and Hull Solar Projects (57MW-ac)

Project Footprint: 350 acres  
Overall Project CAPEX: \$60M (quoted)  
Local/regional construction spend: \$6M  
Annual land lease revenues: \$211,800  
Municipal linear assessment taxes levied (MD of Taber): \$570,000  
Construction jobs: 200  
Operations jobs: 2-4  
Community Development Fund:  
Estimated year 1 regional economic impact: \$12,781,800  
Main Contact: Christine Lewington, [christine.lewington@belectric.com](mailto:christine.lewington@belectric.com), 403-393-0204  
Sources: [Innogy website](#)

## 5. Enel North America CRR2/Riverview Wind Projects (146MW)

Project Footprint:

Overall Project CAPEX: \$170M

Local/regional construction spend: \$17M

Annual land lease revenues: \$360,000

Municipal linear assessment taxes levied (Pincher Creek and MD of Pincher Creek): \$1.69M

Construction jobs: 200

Operations jobs: 8-10

Community Development Fund: Yes

Estimated year 1 overall economic impact: \$25,000,000

Main Contact: Shaun Andrews, [shaun.andrews@enel.com](mailto:shaun.andrews@enel.com), 587-432-7650

Sources: [Enel NA](#)

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## Construction-Ready (AUC Approved)

### 6. EDF Vulcan Solar Energy Centre Project (78MW-ac)

Project footprint: 960 acres

Overall project CAPEX: \$155M (source)

Local/regional construction spend: \$16M

Annual land-owner lease revenues: \$576,000

Municipal linear assessment taxes levied (Vulcan County): \$780,000

Construction jobs: 200

Operations jobs: 1-2

Community Dev Fund:

Estimated overall economic impact: \$23,356,000

Main Contact: David Warner, [david.warner@edf-re.com](mailto:david.warner@edf-re.com), 647-523-3035

Sources: [EDF-RE website](#)

### 7. Greengate/Potentia Renewables Travers Solar Project (400MW-ac)

Project Footprint: 4,700 acres

Overall Project CAPEX: \$520M

Local/regional construction spend: \$52M

Annual land lease revenues: \$2,820,000

Municipal linear assessment taxes levied (Vulcan County): \$4,000,000

Construction jobs: 300

Operations jobs: 10-12

Community Dev Fund: Yes

Estimated year 1 regional economic impact: \$76,820,000

Main Contact: Daniel Cunningham, [danc@greengatepower.com](mailto:danc@greengatepower.com), 403-471-1428

Sources: [Calgary Herald](#) [Greengate Power website](#)

## 8. Perimeter Claresholm Solar Project

Project footprint: 780 acres

Overall project CAPEX: \$169M

Local/regional construction spend: \$17M

Annual land-owner lease revenues: \$468,000

Municipal linear assessment taxes levied (MD of Willowcreek): \$1,300,000

Construction jobs: 200

Operations jobs: 1-2

Community Dev Fund:

Estimated year 1 overall economic impact: \$18,768,000

Main Contact: Daniel Andres, 306-654-7790, [dandres@perimetersolar.ca](mailto:dandres@perimetersolar.ca)

Sources: [Perimeter Solar website](#)

## 9. TransAlta Windrise Wind Project (207MW)

Project Footprint: 11,000 acres

Overall Project CAPEX: \$270M

Local/regional construction spend: \$27M

Annual land lease revenues: \$430,000

Municipal linear assessment taxes levied (MD of Willowcreek): \$510,400

Construction jobs: 300

Operations jobs: 10-12

Community Dev Fund: Yes

Estimated overall economic impact: \$42,940,000

Main Contact: Jeff Trynchy, [projects@transalta.com](mailto:projects@transalta.com), 877-547-3365, ext 1

Sources: [TransAlta website](#) Company consultation

## Summary

Total CAPEX	\$1,553,500,000
Regional Construction Spend	\$156,500,000
Annual Land Lease Revenues	\$5,165,800
Municipal Linear Assessed Taxes	\$9,044,400
Construction Jobs	1,850
Operations Jobs	52
Regional Cumulative Fiscal Impact	\$237,991,800

## Appendix: Additional Notes on Estimates

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### Notes on Wind Energy Economic Impact Estimates (Delphi Group, 2017)

Note, the below estimates rely on a per MW CAPEX of approximately \$1.8M per MW installed, based on available industry data from 2015-2016. Based on our current year research (2019) installed cost of both wind and solar have fallen to an average of \$1.3M per MW of installed capacity.

**Table ES2:** Total cumulative economic impacts from the installation of 4,500 MW of wind power in Alberta under the two REP policy scenarios versus the Base Case scenario.

Total Impacts	Base Case	REP Scenario 1	REP Scenario 2
<b>MW of Wind Power Installed by 2030</b>	<b>1,496</b>	<b>4,500</b>	<b>4,500</b>
<b>Installed Project Cost</b>	<b>\$2,724,639,315</b>	<b>\$8,274,983,345</b>	<b>\$8,274,983,345</b>
Local Spending (Project Development – Alberta)	\$837,959,855	\$2,682,043,826	\$3,602,613,311
<b>Total Annual Operational Expenses</b>	<b>\$418,130,842</b>	<b>\$1,371,988,895</b>	<b>\$1,372,019,945</b>
Direct Operating and Maintenance Costs	\$42,257,535	\$140,587,870	\$140,587,870
Local Spending (O&M – Alberta)	\$41,109,909	\$136,579,475	\$136,579,475
Property Taxes	\$7,787,340	\$25,542,000	\$25,542,000
Land Lease Payments	\$4,115,930	\$13,506,750	\$13,537,800

Source: Delphi Group and NREL JEDI Model

The base case scenario from the [2017 Alberta Wind Energy Supply Chain study](#), provided by Delphi Group, offers a useful projection of the economic impacts of the wind projects contracted under the AESO Renewable Electricity Program from 2016-2019. Approximately 1,363MW of wind energy were contracted across southern Alberta through REP rounds 1-3.

Of these, the \$200M, 113MW Stirling wind project is located in the heart of the Southgrow region. Benefits from this project will be felt throughout the Lethbridge area, with Lethbridge County, County of Warner, and the village of Stirling to see the most direct impacts in terms of local jobs, suppliers, land lease payments and municipal tax revenues.

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### Notes on Linear Tax Assessment

Reference Cases: Old Man 2 Wind Project  
Assessment Value (2015): \$51.9M  
Linear Tax Revenues to MD of Pincher Creek: \$550k

Reference Case: Blacksprings Wind Project

Assessment Value (2015): \$319M  
Linear Tax Revenues to Vulcan County: \$3.5M

Reference Case: Bull Creek Wind Project  
Assessment Value (2017): \$42.9M  
Linear Tax Revenues to MD of Provost: \$450k

Reference Case: Brooks Solar Project  
Assessment Value (2019): \$18,182,770  
Linear Tax Revenues to Newell County: \$169,316

For information on assessment and taxation, please refer to: <https://www.alberta.ca/municipal-property-assessment-and-taxation-reports.aspx#toc-1>



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## Contact Information

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**Alberta SouthWest Regional Alliance**

Bev Thornton  
Executive Director  
[bev@albertasouthwest.com](mailto:bev@albertasouthwest.com)  
(403) 627-3373

**Economic Development Lethbridge**

Trevor Lewington  
Chief Executive Officer  
[trevor@chooselethbridge.ca](mailto:trevor@chooselethbridge.ca)  
(403) 331-0022

**SouthGrow Regional Economic Development**

Peter Casurella  
Executive Director  
[peter.casurella@southgrow.com](mailto:peter.casurella@southgrow.com)  
(403) 394-0615