

INVEST IN SOUTHWEST ALBERTA – ENERGY

Alternative,
Renewable &
BioEnergy



Envisioning a Landscape of Investment
Opportunities and Export Capacity

Invest in Southwest Alberta – Energy contains an analysis of the Alternative and Renewable Energy sector in the southwest region of Alberta from an investment perspective. This document contains information on the region's existing energy services, its capacity, its competitive edge and access to markets, opportunities, incentives and resources.



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Invest in Southwest Alberta – Energy

ENVISIONING A LANDSCAPE OF INVESTMENT OPPORTUNITIES AND EXPORT CAPACITY

AN UNLIMITED LANDSCAPE OF OPPORTUNITY

Southwest Alberta offers immediate opportunities to invest in existing businesses, start a new venture, or explore partnerships with established firms in the thriving renewable, alternative and bio energy sector.

This unique region is an ideal location to live, learn and invest in due to its:

- Low business costs - one of the most competitive tax environments in North America;
- Collaborative community - \$1.15 billion in new capital investment and alternative energy industry development is supported by a network of 38 municipalities in southern Alberta;
- Strategic location and access - \$845 million in major provincial projects have been announced for the Southern Alberta Transmission Reinforcement initiative; and
- Entrepreneurial spirit - a skilled, young and productive workforce populates this stunning area.



LAY OF THE LAND

The southwest Alberta Region includes 16 municipalities and covers an area of 15,446 square kilometers, larger in size than the state of Connecticut. The region accounts for 2.4% of Alberta's land mass. Its population of 36,700 residents, living in 16 vibrant communities and representing 1.0% of Alberta's population, call southwest Alberta home. The six major centres are Cardston, Crowsnest Pass, Claresholm, Fort Macleod, Nanton, and Pincher Creek.

This creates a region of wide open spaces that is very attractive to businesses and represents potential for continued growth. The communities in the region are within a 150 km radius and vary in size from full service centers of over 5,500 people to charming villages of 200-450 people. Communities work in partnership on initiatives to facilitate sustainable economic growth.

The region boasts one of the highest quality of life standards in the world, with recreational settings, strong community values and an average household income of over \$80,000 (2011). Southwest Alberta has significant geographic diversity; from prairie grasslands and foothills, to river valleys and the majestic mountain peaks of the Canadian Rockies.

Southwest Alberta has a vibrant recreational setting, containing multiple provincial parks, campgrounds, ski hills and hiking trails. Community values emphasize hard work and multiculturalism, due in part to the fact that one in six Albertans was born outside of Canada. Alberta's exceptional health care system, publicly administered and funded by the Alberta government, is dedicated to ensuring all Albertans have equal access to the best medical services.

A DIVERSE ECONOMY



With a vibrant and diverse economy, the southwest region of Alberta provides a number of investment advantages and opportunities. Over 1,900 businesses currently operate in this region of economic strength across the agriculture, natural gas, tourism, manufacturing and growing renewable energy sectors.

Businesses benefit from a young, highly skilled and educated workforce. In 2012, 48.3% of the labour force aged 25 and over reported holding a university degree or post-secondary diploma, and 2/3s of the region's population was aged between 15 and 64.

Southwest Alberta lies close to four of the most reputable post-secondary institutions in the province, The University of Lethbridge and Lethbridge College, the University of Calgary, and Southern Alberta Institute of Technology (SAIT).

The region enjoys close to 2,400 hours of sunshine and 264 dry days per year, and is ranked the second highest in Canada days per annum for wind speeds above 40 km/h (24.9 mph). With clean, fresh water, more hours of sunshine than anywhere else in Canada and a bounty of natural resources, Southwest Alberta proves an idyllic setting for living and a great location for commerce.

Annually, Southwest Alberta records approximately \$40 million in municipal construction value and has \$1.6 billion in recently completed or planned municipal/private sector construction projects. Current projects as they relate to the renewable energy sector include:

- \$150M **Windy Point Wind Farm** in Pincher Creek planned for 2015 – 2016;
- \$500M **Transmission Line** development - Southern Alberta Transmission Reinforcement (SATR) in Pincher Creek planned for 2017 – 2018; and
- \$345M **South Foothills Transmission Project** from Fort Macleod to High River. (Completed November 2015)

Click here for an up-to-date and complete inventory of Alberta’s major capital projects.

UNPARALLELED ACCESS TO MARKETS

HIGHWAYS

- Highway 2 (CANAMEX) accelerates the north-south flow of goods, connecting Alberta to the U.S.A. and Mexico.
- Highway 1 (TransCanada) is Canada’s major east-west trade corridor, spanning across all ten Canadian provinces, linking the east and west coasts.
- Highway 3 West connects Alberta to Vancouver, British Columbia and the Port Metro Vancouver deep-sea terminal, Canada’s largest sea port and the fourth largest tonnage port in North America. Highway 3 East links to the Trans-Canada Highway, all major eastern Canadian highways, as well as the Atlantic Ocean.
- Major Port of Entry to the USA: one hour south of Fort Macleod is Canada’s 9th busiest border crossing, Coutts/Sweet Grass, open 24 hours a day, seven days a week.

Distance to:	Kilometers	Miles
Lethbridge, AB	100	62
Calgary, AB	216	134
Fort McMurray, AB	952	592
Seattle, WA	956	594
Vancouver, BC	1166	724
Los Angeles, CA	2313	1437
Toronto, ON	3419	2125
Houston, TX	3389	2016
Montreal, QC	3499	2174
New York, NY	3854	2395
Halifax, NS	4735	2942

AIR

- One of Alberta's longest runways lies within the region, and is managed by the Municipal District of Pincher Creek. The runway is at 1190 meters (3,903 feet) elevation and is 2012 meters (6,600 feet) in length.
- Within an hour's drive is the Lethbridge airport, operating 24/7 with daily scheduled flights. There is also an on-site NAV CANADA Flight Services Station that operates 16 hours per day.
- Just a two-hour drive away is the Calgary International Airport, Canada's third largest. Connecting passengers through daily scheduled flights to 100 International destinations, the airport also serves as a major cargo hub for Western Canada.

RAIL

- Products can be shipped by rail on the Canadian Pacific Railway mainline. Lethbridge boasts a major freight handling facility, with tracks running in all four cardinal directions. Products are easily shipped north to Calgary, south to the U.S.A., east to large markets in southern Ontario, and west to Vancouver and beyond to the Pacific Rim.



A major freight mainline runs through the region linking British Columbia and Port Metro Vancouver to a major freight handling facility in Lethbridge.

ENERGY SECTOR EMPLOYERS

Examples of companies that contribute to the growth in this key industry are listed below:

- Vestas Canadian Wind Technology
- Enmax Corporation
- TransAlta Corporation
- Back To Earth Energy Inc.
- Top Hand Industrial Services Ltd.
- GrowTech
- SkyFire Energy

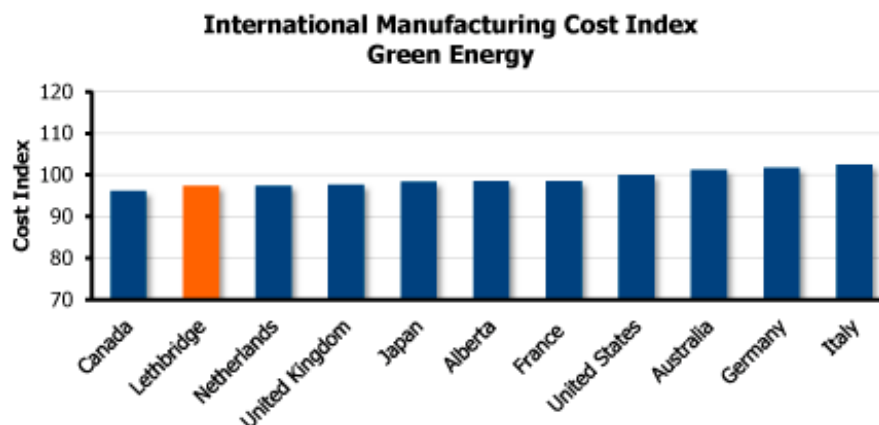
A GLOBAL CONTENDER IN BUSINESS COSTS

Work here. Live here. Do business here. Get more. Pay less. Alberta has one of the most competitive tax environments in North America and fosters innovation through its pro-business attitude. Investors continue to take advantage of its low property, corporate and personal income tax rates. Alberta is the only province that does not have a provincial retail sales tax. It has no provincial capital or payroll taxes, nor machinery and equipment taxes. Alberta has none of the taxes typical in many other provinces and in the U.S.A.

- Small business owners pay lower taxes (total of personal and business income tax, sales tax, gas tax, health premiums) in Alberta than in any other province in Canada.
- The combined federal/provincial corporate income tax rate is 27% for general businesses and 14% for small businesses.
- Alberta has the lowest gasoline taxes in Canada.
- Alberta Healthcare is the best funded in the country, representing one third of the annual provincial budget. Canada provides publically funded healthcare services, reducing the cost to private business.

Specifically, southwest Alberta's competitive advantage lies in its vast land resources, affordable cost of business and cost of living, as well as access to markets:

- Lower than provincial average labor costs
- Small business owners pay lower taxes (total of personal and business income, sales, gas taxes and health premiums) than they would in any other province
- Average house prices approximately 58% lower than the Alberta average
- Municipal commercial taxes are roughly \$1500/\$100,000 of assessment. This is roughly 25% lower than the Calgary Region for comparable enterprise operating space;
- Competitively low water, natural gas and electricity utility rates; and
- Internationally competitive manufacturing costs in green energy.



KEY RENEWABLE INDUSTRIES

Alternative and renewable energy sources are an integral part of the Government of Alberta's energy portfolio, with approximately 45% of Alberta's electricity generation stemming from wind, hydro, biomass and natural gas cogeneration. Demand for energy has risen and is projected to continue rising given Alberta's population growth of 1.4 million and an increase in peak demand of over 4,000 megawatts since 1996. The Alberta government has also recently announced a policy to compel the province to advance research, development and implementation of clean, renewable energy production.

In 2013, The Climate Change and Emissions Management Corporation (CCEMC) provided \$46 million in funding for eight projects in Alberta, which will reduce greenhouse gas emissions by more than 5 mega tonnes over 10 years.

Specifically, the southwest region of Alberta places value in its thriving reserve of natural resources. To capitalize on and encourage sustainable growth in the industry, 38 local communities collaborated in the creation of the **Southern Alberta Alternative Energy Partnership (SAAEP)**. SAAEP has supported more than \$1.15 billion in new capital investment and industry development, published research on alternative energy systems and raised awareness of the region both nationally and internationally.

SOLAR ENERGY

Exhibiting the highest amounts of sun across all of Canada, southwest Alberta has the potential to become a key driver in the supply of solar energy. With 2,400 hours of sunshine per year, and a mean winter temperature of -10 degrees celcius (ideal for solar technology efficiency), the region provides an optimal climate for the production of solar energy.

Opportunities in the region include the expansion of the manufacturing industry for solar equipment, creating new solar farms to supply electricity to the grid or partnering with research groups prominent in the area to craft new technologies.



9.36 kW Conergy 240 watt solar module, Lethbridge, Alberta, SkyFire Energy.

WIND ENERGY

Alberta has set the global stage as an example of excellence in incorporating wind generation into the power grid. Canada's first wind farm was built in the southwest region in 1993, making it the birthplace of the nation's wind industry. With the current development of the Southern Alberta Transmission Reinforcement Project, enabling up to 2,700 MW of new wind generation specifically in southern Alberta to connect to the grid, strong opportunities continue to attract investors to the region.

Local businesses depend on a highly skilled and specialized workforce to run and operate the many wind farms. Lethbridge College's International Wind Academy, the only post-secondary institution in Canada approved to deliver BZEE certified wind turbine programming, is only 100 to 150 kilometres away and sets the current world training standard.



Southwest Alberta wind turbines in action.

The force of the wind from the mountains in the southwest region led to the development of technology to measure wind velocity, now sold on the global stage. These advancements in wind monitoring technology have the potential to be developed with international partners.

BIO-FUEL

The Canadian biofuel industry has grown significantly over the past 15 years, however current yields account for only 2% of the global production of ethanol and bio-diesel. There is a tremendous opportunity for Canada, and particularly southwest Alberta, to become a global leader in the production of bio-diesel and bio-ethanol to meet global demand.

Bio-fuel plants produce either bio-ethanol or bio-diesel used as fuel additives to reduce carbon emissions. Currently in Alberta there are two renewable fuel plants in operation and three under construction (two of are in the south). Southern Alberta is home to the largest biodiesel plant in Canada, Kyoto Fuels, which produces 66 million litres of biofuel a year.

Alberta encourages growth in biofuels through its 2011 Renewable Fuel Standard, requiring five percent renewable alcohol in gasoline and two percent renewable diesel in diesel fuel. Opportunities include the investment in bio-diesel process equipment manufacturers.

Alternatively, investments may be made in the local manufacturing under license, of bio-diesel process equipment, local design, engineering and structural construction of plants, local design of process control systems and transportation related activities.

BIO-ENERGY (BIOMASS)

Bio-energy is derived from biomass, material made from living organisms. Further development will diversify the energy mix in Alberta providing significant carbon reduction, community development and environmental sustainability. The Alberta government is also supportive of the development of bio-energy infrastructure, having approved \$195 million in grants into its development.

Given Alberta's thriving canola, grains, livestock and forestry industries, there is no lack of consistent feedstock to supply processing facilities. Current biomass generating capacity is more than 300 MW. Opportunities exist for expanded capacity supplied by forest, agriculture and municipal waste, totalling 20 million tonnes annually. Partnership opportunities exist with established businesses and research organizations to develop new technologies.

Local companies taking advantage of the thriving bio-energy sector include:

- **Lethbridge BioGas:** This \$30 million facility has the capacity to generate 2.8 megawatts, enough to power 2,800 homes. Future expansion plans will increase the capacity to upwards of 4.2 megawatts. The innovative plant was the first of its kind to patent thermal hydrolysis technology for the destruction of prions that cause BSE in cattle.
- **GrowTEC (Grow the Energy Circle):** After a year in Lethbridge's tecConnect commercialization centre, GrowTEC secured \$3.5 million in funding from the Climate Change and Emissions Management Corporation. The \$8 million, multi-faceted bio-energy venture will offset 10,400 tonnes in CO₂ emissions on an annual basis.

INCENTIVES

Southwest Alberta supports existing, expanding and new businesses through its strategic network of 16 regional communities. Collaborative initiatives with each other, the City of Lethbridge, Lethbridge County, the University of Lethbridge and Lethbridge College encourage budding entrepreneurs while providing access to market and investment opportunities.

Scientific Research & Experimental Development (SR&ED) Tax Incentive: The SR&ED Program is a federal tax incentive program, allowing companies to deduct SR&ED

expenditures from their income and provides an investment tax credit (ITC) to encourage Canadian businesses of all sizes to conduct research and development (R&D) in Canada.

Industrial Research Assistance Program (IRAP): The National Research Council’s IRAP provides support and funding to small and medium-sized companies in Canada with the objective to undertake technology innovation.

Western Innovation Initiative (WINN): Western Economic Diversification Canada offers repayable contributions for small to medium-sized businesses operating in Western Canada to commercialize innovative technology-based products in later stage research and development. This is a federally driven, \$100 million, five-year initiative.

Alberta Innovates Micro Voucher, Voucher and Product Demonstration Programs: Alberta Innovates - Technology Futures Voucher Program supports early to late stage technology and knowledge-driven companies, operating in Alberta, in advancing technology innovation in growing markets including environmental technology.

The Climate Change and Emissions Management Corporation (CCEMC): Created in 2009, CCEMC supports climate change initiatives and has funded over 85 projects in areas like climate change adaption, renewable energy, clean energy production and efficiency.

BUSINESS RESOURCES

TecConnect: Southern Alberta is strategically located and positioned to foster growth in the Geospatial sector. This commercialization centre in Lethbridge acts as a facilitator for people, ideas and technologies in the high-tech industry to promote success for entrepreneurs, root existing businesses and attract new investment.

Connectica: A free Alberta-based service helping users connect to the vast research and innovation network in the province. Connectica serves as a platform to find innovation programs and services, a conduit to research organizations and a catalyst to connect businesses to the information they require.

Alberta Innovates: A provincial resource to help innovators partner with the research and programs they need for their business to succeed. This unique network includes a focus on bio solutions, health solutions, technology futures, energy, and environment solutions.

Department of Foreign Affairs, Development and Trade Concierge Service: This federally funded concierge service acts as a one-stop shop for small and medium sized enterprises seeking to grow through innovation. It offers free information on funding, expertise, facilities and one-on-one assistance.

Technology Alberta: Technology Alberta is an industry-led association of Alberta-based technology companies who facilitate the success of high-tech companies, grow public awareness and increase policy advocacy.

Alberta Clean Technology Industry Alliance: ACTIA is a membership based organization of clean technology companies focused on growing the business environment, creating a direct link to government and creating a network for information sharing.

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