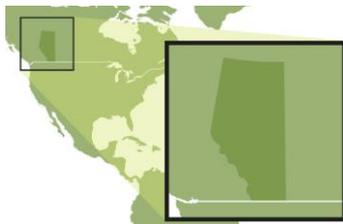




Partner region profile – Alberta

Energy Transition Platform | June 2016

Socio-economic facts



Alberta, Canada

Population: 4,230,000 (2016) | **Area:** 661,848 km²

Landscape: prairies, boreal forests and Rocky Mountains

GDP: US\$292 billion (2014) | **GDP/capita:** US\$69,031

Economic sectors: 66% services | 32% industry: energy (oil and gas), petrochemical manufacturing, biochemical, refining | 2% agriculture

Jurisdictional power: highly decentralized federation

Key departments: Alberta Climate Change Office, Ministry of Environment and Parks, Alberta Energy

At the beginning of the 20th century, the economy of Alberta was based on agriculture and manufacturing. The discovery of oil in the Leduc field in 1947 was the start of a new economic era¹. New oil fields opened, rapidly raising revenues and supporting the economic growth of the province. The production of crude oil more than doubled in the ten years that followed the opening of the first commercial oil sands operation in 1967².

This economic boom was followed by a population increase of one third in the 1970s, attracted by the wealth and working opportunities created by the oil industry. Today, 83% of the population is urban and concentrated in two main metropolitan areas: Calgary and the capital city of Edmonton.

After a significant recession in the 1980s, Alberta took steps to diversify its economy by developing its petrochemicals and forestry sectors. The natural gas industry has also been a major contributor to the economy of the province, and over the past few decades, Alberta's economy has remained one of the healthiest in Canada.

¹ <http://www.cbc.ca/history/EPISCONTENTSE1EP17CH3PA1LE.html>

² <http://www.thecanadianencyclopedia.ca/en/article/alberta/>



Alberta's primary economic driver is its energy industry – making up 18.3% of Alberta's GDP.³ After years of unprecedented growth, the drastic drop in oil prices that began in 2014 has resulted in thousands of job losses in the energy sector in Alberta and throughout Canada.

However, the province is expecting a 1.9% growth in economic activity in 2017 – after a forecasted decline of 1.4% in 2016.⁴

Energy system and energy policy

Alberta is home to 80% of Canada's oil production, with roughly three-quarters of this volume coming from oil sands in the Athabasca, Peace River and Cold Lake regions. Its oil sands are the third-largest proven crude oil reserve in the world. Additionally, the region's electricity system is primarily based on coal (55% of electricity generation in 2015).⁵

Energy resources (in ground & production)	<p>Reserves:</p> <ul style="list-style-type: none"> • Oil: 167.2 billion barrels • Gas: 31.3 trillion cubic feet • Coal: 33.2 billion tons <p>Production:</p> <ul style="list-style-type: none"> • Oil: 2.9 million barrels per day <ul style="list-style-type: none"> ○ Oil sands (marketable): 2.5 million barrels per day ○ Conventional: 528 thousand barrels per day • Gas: 9.5 billion cubic feet per day • Coal: 27 million tons
Energy mix: consumption by sources and sectors	<p>Sources: gas (39%), natural gas liquids (29%), crude oil (23%), coal (8.5%)</p> <p>Sectors: industry (45%); transport (21%); commercial (15%); residential (12%)⁶</p>
Renewable energy consumption	<p>9% of electricity generation</p> <p>Mainly hydropower, wind and biomass</p>
Imports/exports	<p>Exports mining and oil and gas (75% of Alberta's exports in 2014)</p>
Energy market structure (privatized/monopolized)	<p>Wholesale competitive electricity market since 1996</p>

Climate Leadership Plan 2015

Following recommendations from the Climate Change Advisory Panel, which led engagement between the public, Indigenous organizations and stakeholders, Alberta released its Climate Leadership Plan in November 2015.

³ <http://www.albertacanada.com/business/overview/economic-results.aspx>

⁴ <http://finance.alberta.ca/publications/budget/budget2016/fiscal-plan-complete.pdf>

⁵ <http://www.energy.alberta.ca/Electricity/682.asp>

⁶ <https://www.aer.ca/documents/sts/ST98/ST98-2014.pdf>



The plan sets out four areas of focus for the province:

- Economy-wide price on carbon:
 - Introduce a levy on carbon emissions equivalent to US\$20 per ton in 2017, and US\$30 per ton in 2018;
 - For large emitters, transition of the current system requiring emissions reductions from facility-specific historic baselines to product-specific performance standards to drive best-in-class performance;
 - Invest revenues from the carbon levy in initiatives to mitigate greenhouse gas (GHG) emissions and to help Albertans, businesses and communities transition to a low carbon economy.

- Coal pollution and renewable energy:
 - Phase out emissions from coal-fired power plants by 2030;
 - Replace two-thirds of Alberta's coal generating capacity by renewable energy and one third by natural gas;
 - Generate up to 30% of electricity from renewable sources by 2030.

- Limit oil sands emissions:
 - Emissions limit on oil sands of 100 Mt in any year, with provisions for cogeneration and new upgrading capacity to drive investment in innovation and technology;

- Methane reduction:
 - Reduce methane emissions from oil and gas operations by 45% from 2014 levels by 2025.

Renewable Fuel Standard Regulation 2010

The [Renewable Fuels Standard Regulation](#) requires commercial fuel producers to mix their usual fuels (gasoline or diesel) with renewables.

To meet the standard, gasoline must contain 5% bio-ethanol, and diesel 2% bio-diesel. Additionally, renewable fuels must generate 25% fewer GHG emissions than the equivalent petroleum fuel.

Energy transition experience

Its Climate Leadership Plan puts Alberta at the forefront of energy and environmental leadership. It will help the province build a greener and more sustainable economy and ensure responsible energy production.

The Alberta government is working to phase out coal emissions by 2030, with 30% of electricity generated by renewable sources. It will use a competitive process that works with its market-based system to drive this transition to cleaner generating sources.

Through its economic action plan, Alberta is taking significant steps towards diversifying the economy and ensuring long-term economic resilience. In addition to building on the province's existing economic strengths – such as the agriculture, forestry and energy industries – Alberta is driving research and innovation, supporting bioenergy producers and investing in the clean technology sector.

With more than 30 operating bioenergy plants in the province, companies in Alberta are already developing new clean technologies that are driving transformative change by reducing GHG emissions, creating energy efficient processes, converting waste to fuel, and promoting responsible and sustainable development.

Climate targets:

Generate 30% of the electricity from renewables by 2030;

Phase out all pollution from burning coal by 2030;

Limit emissions on oil sands to 100Mt in any year;

Reduce methane emissions from oil and gas operations by 45% by 2025.

Climate plan:

[Climate Leadership Plan](#)



The province also launched the Petrochemicals Diversification Program to encourage companies to invest in the development of new Alberta petrochemical facilities that will turn raw energy resources into value-added materials for products and other consumer goods in demand around the world. Going forward, Alberta will continue to look for strategic opportunities to diversify the economy in value-added industries.

But challenges will need to be overcome. For instance, Albertans might see an increase in their electricity and transportation bills with a carbon tax on fuels. The region is already tackling some of the challenges and is issuing rebates to consumers to offset higher heating prices.

Climate policy and instruments

The Province of Alberta recently positioned itself as an environmentally progressive, energy producing jurisdiction, with its new Climate Leadership Plan released in 2015, ahead of COP21 in Paris. The plan has been recognized as a significant step forward for Alberta.

Climate Leadership Plan 2015

As described above, the new ambitious climate plan is founded in applying an economy-wide price on carbon and sets out targets to reduce methane emissions, to phase out emissions from burning coal and limit emissions from oil sands.

By 2020, the implementation of the plan should reduce emissions by 20Mt from business-as-usual scenario (297Mt); and 50Mt by 2030 from business as usual scenario (320Mt)⁷.

Climate Change and Emissions Management Act 2003

This legislation was the first in Canada to address climate change and emissions reductions.

One key regulation associated with the act is the Specified Gas Emitters Regulation (2007), which requires all facilities producing 100,000 tons or more of CO₂ equivalent emissions per year to reduce their baseline emissions intensity by 15%, rising to 20% in 2017.

Contact

To find out more, please contact **Anne-Sophie Dörnbrack**, States & Regions Policy Manager (Energy Transition): adoernbrack@theclimategroup.org | +44 (0)20 7960 2977

Sources:

Climate Leadership report to Minister <http://www.alberta.ca/documents/climate/climate-leadership-report-to-minister-executive-summary.pdf>

Infographics on Carbon and GHG Legislation

<https://www.osler.com/en/resources/regulations/2015/carbon-ghg/carbon-and-greenhouse-gas-legislation-in-alberta>

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⁷ <http://www.ivey.uwo.ca/cmsmedia/2112500/4462-ghg-emissions-report-v03f.pdf>