

# Bavaria - Alberta Relations



*This map is a generalized illustration only and is not intended to be used for reference purposes. The representation of political boundaries does not necessarily reflect the position of the Government of Alberta on international issues of recognition, sovereignty or jurisdiction.*

## PROFILE

**Capital:** Munich

**Population:** 12.8 million (2015)

**Language:** German

**Government:** *Landtag* (legislative assembly of a German state)

**Head of State:** Minister-President Horst Seehofer (since 2008)

**Currency:** Euro, CAD \$1.00 = €0.67, €1.00 = CAD \$1.49 (August 2017)

**GDP:** €568 billion (2016)

**GDP per Capita (PPP):** €44,566 (2015)

**GDP Growth Rate:** 2.1 per cent (2016)

**Inflation:** 1.7 per cent (March 2017)

**Unemployment:** 3.5 per cent (2016)

**Key Industry Sectors:** Automotive, heavy engineering, electro-technology, food, tourism and advanced technology

## DID YOU KNOW?

- Bavaria is Germany's largest, and oldest, state and leading location of innovation, spending approximately 3 per cent of its GDP on research and development. 15,867 patent applications were registered in 2016, a third of German patent applications.
- The headquarters of many international firms are located in Bavaria (e.g. Siemens, Airbus, MTU, BMW, Audi, MAN, Adidas and Allianz).
- The major European transport routes converge in Bavaria, facilitating trade between Eastern and Western European countries.
- Germany's most prestigious research societies have centres in Bavaria (Max Plank, Fraunhofer and Helmholtz).
- Bavaria is Germany's top tourism destination, welcoming over 24 million visitors every year.
- More than half of the state's total land is used for agriculture.

## RELATIONSHIP OVERVIEW

- Alberta and Bavaria have mutual economic interests, particularly in the aerospace, health technology, advanced manufacturing and nanotechnology sectors.

- In June 2013, the Alberta and Bavarian governments renewed and extended a Memorandum of Understanding (MoU) in Research and Technology. The MoU supports collaboration, such as Alberta-Bavaria Interdisciplinary Research Network (ABBY-net) and Alberta/Technical University of Munich International Graduate School for Hybrid Functional Materials (ATUMS).

## TRADE AND INVESTMENT

- In 2016, Bavaria's exports were €183 billion. The state's main export markets were EU-28 (55.3 per cent), the U.S. (12.7 per cent) and China (8.1 per cent).
- Approximately 88.5 per cent of Bavaria's exports were finished goods, the remainder included food products (4.9 per cent), semi-finished goods (3.5 per cent) and raw materials (0.5 per cent).
- The state's largest exports were vehicles (€59.4 million), electrical equipment (€30.5 million), machinery (€28.1 million) and chemical products (€16.8 million).
- Bavaria's imports in 2016 were €166 billion. Main import markets include Austria, China, Czech Republic, the United States and Italy.
- Every year, Bavaria attracts about €50 billion in foreign investment.

- Bavaria's economy relies on its vibrant industrial and financial sector. Approximately one-fourth of German Stock Index (DAX)-listed companies are headquartered in Bavaria. A large concentration of automakers, media, technology, engineering, fashion and international finance sectors are located in Bavaria.

## ENERGY

- Bavaria is a leader in hydropower, geothermal energy, solar energy and ambient heat.
- Under the 2015 Bavarian Energy Program, the government has committed to a number of renewable energy, energy efficiency and carbon dioxide emission reduction goals for 2025. This includes a target of 70 per cent share of renewable energies in electricity generation.
- Forty per cent of Germany's solar energy capacity is installed in Bavaria. Completed in 2005, the Bavaria Solarpark consists of 57,600 solar panels and covers a total area of 40 hectares. It generates enough solar energy to power 9,000 homes and is among the world's largest photovoltaic power stations.
- Hydroelectricity from Bavaria generates 15 per cent to 18 per cent of Germany's overall power production.
- Geothermal energy is available across almost all of Bavaria. Munich is located in the Molasse Basin which is characterized by geological formations that are well suited for extracting geothermal heat.
- Wind energy is expected to cover 10 per cent of the state's energy consumption by 2021. This could lead to the installation of 1,000 to 1,500 wind turbines.
- Although Bavaria is located inland where wind strength is relatively weak, the construction of wind power plants has grown considerably in the past few years. In 2016, Bavaria had the sixth largest wind energy capacity, totalling 340MW.
- Bavaria is a key part of the oil processing and supply network in Germany. There are two oil refineries and two crude oil pipelines located in Bavaria.
- Among its many projects in Alberta, Munich-based Siemens was awarded a contract for 37 pumping stations and 19 substations to supply the TransCanada Keystone Pipeline project, estimated at CAD \$200 million. The pipeline will transport crude oil from Northern Alberta's oil sands to the U.S.

## EMERGING OPPORTUNITIES

- Bavaria has taken a leading position in the advanced industry sectors in Germany, including nanotechnology, information and communication technology, new materials, life sciences, aerospace and environmental technology. Over 12 per cent of all employees in the state work in the high technology sector, more than anywhere else in Europe.
- There are 17 innovation clusters spread across Bavaria covering digitalization, energy, healthcare, materials and mobility.
- Bavaria is the top media location in Germany with 23 of the top 100 German media companies located in the state. It also has the country's second largest newspapers and magazines industry.
- **Advanced Manufacturing and Advanced Materials:** With over 1000 manufacturing plants, mechanical engineering contributes over €43.1 billion in sales and is Bavaria's largest sector.
- Strong Bavarian industries across many verticals provide opportunities for Alberta's advanced manufacturing, advanced materials, nanotechnology and microsystems companies.
- With a strong process engineering sector, there are many opportunities for Alberta companies from the conventional and unconventional oil and gas industry. This is particularly the case for high valued-added technologies required in the supply chain management of upgraders.
- **Aerospace:** Bavaria's aerospace industry is a leader in Europe and home to 150 satellite navigation companies and 550 aerospace companies. Several top industry players, including Airbus and MTU Aero Engines, are located in Munich.
- Annual industry turnover was approximately €7 billion in 2015.
- The Bavarian Ministry of Economic Affairs has supported the bavAIRia e.V. cluster since 2006, supporting the state's core competencies in aviation, aerospace and space flight applications.
- **Digital Industries:** Munich is an ideal location for technology founders with several DAX companies, 15 universities, more than 10 start-up and technology centers, and thousands of companies from the high-tech sector.
- The Digital Hub Initiative in Munich was launched in 2017 by the German Government and the ICT industry association Bitkom e.V. with the goal of strengthening Germany's

position as an innovation location for mobility solutions.

- The government provides €500 million in support for business-related projects, €1.5 billion in infrastructure for broadband expansion and €377.3 million on research projects in the digitalization field.
- **Life Sciences:** The medical technology sector is expected to grow at least 7 per cent per year.
- With over 600 members from 13 countries, the Bavarian MedTech Pharma e.V. is the largest health sector network.
- Two of the major European life sciences clusters are in Bavaria: BioM in the Munich region with a focus on biotechnology and pharmaceuticals and the Medical Valley in the Nuernberg/Erlangen region with a focus on medical devices and engineering.
- A number of innovation centres, business incubators, research institutes and universities have established themselves in Nuernberg.

## EDUCATION

- Two of the top five German universities are located in Bavaria: Ludwig-Maximilians-Universität (LMU) and Technische Universität München (TUM).
- The Bavarian Research Alliance (BayFOR) manages the state's programs supporting research collaboration with Quebec and Alberta. The program assists researchers and PhD students with networking, funding and multilateral expansion.
- Since 2007, BayFOR has been engaged in developing research cooperation with Alberta. Key sectors include energy, information and communication technologies and life sciences.
- ABBY-Net is an interdisciplinary network of researchers from Albertan and Bavarian universities, striving to jointly address research topics that are of essential importance for the sustainable development of Alberta and Bavaria.
- The University of Alberta (U of A) has established partnerships with with LMU, TUM and Friedrich-Alexander-Universität Erlangen-Nürnberg,
- The U of A and the LMU offer a Jointly Delivered Doctoral Degree program for students enrolled in arts, education and science programs.
- ATUMS is an innovative joint training initiative of the U of A and the TUM where student

undertake international cross-disciplinary coursework.

- Mount Royal University has established a partnership with Munich University of Applied Sciences.
- Alberta Education co-operates in both teacher and secondary student exchange programs with Bavaria.

## VISITS

- June 2016: The Bavarian Parliamentary Committee on Environment and Consumer Protection conducted a fact-finding mission in Banff and Calgary. Topics discussed included park and ecosystem management, veterinary medicine, climate change and energy policy.
- June 2013: The Bavarian Minister of State for Science, Research and Arts met with the Deputy Premier of Alberta to renew an MOU on research and technology.
- May 2012: German Consul General, Mr. Hermann Sitz visited Edmonton and met with the Deputy Premier to highlight research initiatives underway between German institutions and the University of Alberta and to discuss opportunities for improving research, technical collaboration and commercialization activities between Alberta and Germany.
- March 2011: Bavaria's Vice Minister of Economic Affairs, Katja Hessel, and a delegation of 28 Bavarian politicians, business people, academics and government officials visited Alberta. The purpose of the visit was to increase trade and investment, and scientific cooperation between Alberta and Bavaria.

## DIPLOMATIC REPRESENTATION

- The German Ambassador to Canada is Her Excellency Sabine Sparwasser.
- Mr. Stéphane Dion is the Ambassador of Canada to Germany and Special Envoy to the EU and Europe.
- Mr. Andrew Haswell is the Canadian Consul based in Munich, Bavaria.
- The Honorary Consul of Germany in Edmonton is Mr. Harald Kuckertz.
- The Honourary Consul of Germany in Calgary is Mr. Hubertus Liebrecht.
- Mr. Benjamin Emans is the Director of the State of Bavaria office in Montréal, Québec, with responsibility for Alberta.



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