
Alberta Technology and Innovation Strategy (ATIS)

A strategy to strengthen Alberta's
technology and innovation sector



Alberta Technology and Innovation Strategy (ATIS): A strategy to strengthen Alberta's technology and innovation sector | Jobs, Economy and Innovation

© 2022 Government of Alberta | Published: April 12, 2022 | ISBN 978-1-4601-5397-0

This publication is issued under the Open Government Licence – Alberta (<https://open.alberta.ca/licence>). Please note that the terms of this licence do not apply to any third-party materials included in this publication



Contents

Message from the Minister	4
Technology and innovation in Alberta’s economy	6
· Alberta’s foundational strengths	7
· Better together	8
· What we heard from stakeholders	9
· Alberta’s research and commercialization priorities	10
Our strategy.....	11
Our vision	12
Supporting the vision: key goals	13
· Goal 1: Increase the depth of Alberta’s technology and innovation talent pool	14
· Goal 2: Increase access to private capital and public investments in Alberta’s technology and innovation sector	16
· Goal 3: Advance a system of supports that facilitate commercialization of Alberta research and innovations	17
· Goal 4: Optimize Alberta’s technology and innovation ecosystem	19
· Goal 5: Enhance Alberta’s reputation as a leader in technology and innovation	20
Conclusion.....	21
Appendix: Research and commercialization priorities.....	22

Message from the Minister

Minister of Jobs, Economy and Innovation Doug Schweitzer



The past two years have been challenging for all Albertans as we continue to face obstacles arising from the global COVID-19 pandemic and economic shocks. While we recognize that this has been a difficult time for all Albertans, we are committed to continuing to create the conditions that ensure our businesses can innovate, thrive and commercialize new solutions

and products that benefit all of us.

In June 2020 we launched Alberta's Recovery Plan. It's a bold plan to build, diversify and create jobs now. That means building on our strengths while diversifying our economy by harnessing innovation and new technologies. As part of Alberta's Recovery Plan, government announced the Investment and Growth Strategy to encourage investors to choose Alberta to create jobs, increase competitiveness and accelerate diversification. A key part of this included the commitment to finalize strategies for Alberta's key economic sectors, including technology and innovation.

Alberta has a long history of innovation. It is the ingenuity of Albertans that helped us unlock our energy resources, and that history of technology and innovation is helping us lead the way to a more diversified future. Alberta is a province of innovators in all industries, across all sectors.

Technology and innovation are essential for growth and success in all industries – from energy, clean-tech and agriculture, to health, emerging technologies and more. From world-class vaccine researchers to technology companies that are exploring applications in artificial intelligence and machine learning, our innovators are not only developing

products and solutions to benefit people here in Alberta and across the globe, but are also creating businesses that are transforming our industries, contributing to our vibrant communities and supporting good-paying jobs Albertans count on.

This is such an exciting time to be in Alberta. According to the Alberta Enterprise Corporation's 2021 Alberta Technology Deal Flow Study, the province is now home to more than 3,000 tech companies. Alberta also saw another record year for venture capital investment. The province surpassed 2020's record for venture capital dollars invested by 15.7 per cent in 2021¹. In terms of the number of deals, Alberta saw a 64 per cent increase in deal count in 2021 compared to 2020. Alberta's tech sector is maturing rapidly and it is now a real driver of employment and diversification.

Government has made significant investments to boost the sector, including the introduction of the Innovation Employment Grant and the funding of new accelerators to help entrepreneurs develop and grow their businesses.

Alberta is also supporting the foundation for economic growth through talent development and building key partnerships between post-secondary institutions, industry and employers. Alberta announced more than \$600 million in funding for the Alberta at Work initiative in Budget 2022. This funding will create new seats at our post-secondary institutions, increase work-integrated learning opportunities, and expand micro-credential course offerings. Alberta is preparing learners to succeed, now and in the future.

Through Alberta's Technology and Innovation Strategy, we have set out an ambitious path forward with clear actions that will help build on the momentum we're seeing in our tech and innovation sector and cement Alberta as a dominant player and innovation hub that attracts talent, business and job-creating investment from across Canada and around the world.

¹ Canadian Venture Capital Market Overview: 2021 Year in Review. CVCA_VC_Q4_2021-updated-030222.pdf

Through our strategy, we are taking action to:

- build a strong, future-ready workforce and enhance Alberta's pool of tech talent;
- attract the capital and investment our technology businesses need to get off the ground and grow;
- ensure the right supports are in place to help turn Alberta's innovative research and technology solutions into products and services that are needed by the world;
- optimize Alberta's technology and innovation ecosystem so that Alberta's groundbreaking companies can push the limits of what the future can be; and

- let our partners across Canada and the world know Alberta is open for business and has what it takes for technology and innovation to thrive.

Technology and innovation are essential to push us forward. With this strategy, Alberta's government is working hand-in-hand with partners across Alberta's innovation ecosystem to help unleash our province's research and innovation excellence so our innovators can continue to make groundbreaking discoveries and commercialize the solutions the world needs.



Technology and innovation in Alberta's economy

Innovation and technological advancements are driving rapid shifts in the global economy. As the world recovers from the COVID-19 pandemic and economic downturn, technology and innovation will play a significant role in diversifying Alberta's economy, increasing productivity and creating a more resilient economic future for all Albertans. To be a global leader, we must accelerate the growth of technology and innovation and take bold steps to transform industries while developing new opportunities for Alberta.

Alberta's technology and innovation sector is well-positioned to accelerate the province's economic recovery and create a new future for the province. The technology sector has been growing rapidly. The past four years have been record years for venture capital investment in Alberta. The province experienced a 15.7 per cent increase in venture capital dollars invested in 2021 compared to 2020², and in terms of the number of deals, Alberta saw a 64 per cent increase in deal count in 2021 compared to 2020. Between 2018 and 2021, the number of Alberta technology companies almost tripled from 1,238 companies to 3,083, with close to 40 per cent of those companies exceeding revenues of \$1 million – a 66 per cent increase since 2018.

While momentum is building, more work is needed to accelerate Alberta's leadership in the technology and innovation sector. Alberta is competing nationally with larger, more established technology and innovation centres in Toronto, Montreal and Vancouver. These jurisdictions have invested heavily in research and development and have incentivized investment and job creation. Their diligence has paid off with high-quality jobs and increased business activity. Between 2015 and 2020, Edmonton increased its total number of technology jobs to 34,500 (a 53 per cent increase), while Calgary increased its total number of technology jobs to 46,700 (an 18 per cent increase). However, over the same period, Toronto, Montreal and Vancouver saw an increase of 270,000 technology jobs (a 43 per cent increase), 161,000 technology jobs (a 31 per cent increase) and 91,000 technology jobs (a 36 per cent increase), respectively³.

While the province's sector growth is impressive, the reality is that Alberta remains behind our competitors. In order for Alberta to compete nationally and internationally, we have to continue to build our technology and innovation sector and better position the province as an attractive place to live, invest, and start and grow a business. This strategy is designed to drive the sector forward, increase our competitiveness, and position Alberta as a technology and innovation leader to advance our path to recovery and create a new economic future for the province.

² Canadian Venture Capital Market Overview: 2021 Year in Review CVCA_VC_Q4_2021-updated-030222.pdf

³ 2021 Scoring Tech Talent, CBRE, 14 July 2021 <http://cbre.vo.llnwd.net/grgservices/secure/2021%20Scoring%20Tech%20Talent.pdf?e=1645208962&h=ca4291d309380cbd60aefb919f92b762>

Alberta's foundational strengths

Alberta is home to some of Canada's top post-secondary institutions, which are leading research across multiple sectors including energy, agriculture and agri-foods, health sciences and more. The province also has a young, educated and skilled workforce with a self-starting entrepreneurial spirit.

In building our technology and innovation ecosystem, Alberta has developed a strong network of private and public organizations. These organizations play a significant role in supporting companies, attracting investment and growing the technology and innovation sector as a whole. Alberta Innovates is the province's largest research and innovation support organization, providing funding, programs, technical expertise, advice and networks to help stimulate research and innovation across the province. Alberta Innovates has been integral in supporting the use of artificial intelligence by providing funding for Amii, a globally recognized centre of artificial intelligence research and application, as well as supporting businesses such as AltaML and Attabotics to help them become commercial successes.

The Alberta Enterprise Corporation (AEC) is a significant part of Alberta's innovation ecosystem, driving economic diversification and supporting the development of an innovation-based economy. AEC invests in venture capital funds that have a track record of success, global reach and a commitment to Alberta. Since its inception, AEC has helped to attract more than \$779 million in investment to the province's technology sector, creating more than 2,080 Alberta jobs.

Alberta's technology ecosystem is supported by one of the most dynamic workforces in Canada. More than half of Alberta's labour force is under the age of 45, and the province continues to attract many new Canadians, making our population one of the fastest growing in North America. Among Canadian provinces, Alberta ranks among the best for the share of post-secondary educated workers in our labour force with expertise in the fields that will lead the way in future economic growth – (engineering, computer science, artificial intelligence, machine learning, business, and medicine). With the Alberta at Work initiative and Alberta 2030: Building

Alberta's Innovation Employment Grant encourages investment and economic growth by supporting small and medium-sized businesses that invest in research and development (R&D). The program offsets up to 20 per cent of eligible R&D expenditures for all industries.

This complements the Job Creation Tax Cut, which decreases the tax burden on job creators by reducing Alberta's corporate tax rate to the lowest in the country at eight per cent.

Together, these initiatives support companies of all sizes, at all stages of the business cycle.

Skills for Jobs strategy, Alberta is positioning the province for further growth. Not only is Alberta's workforce among the most productive in the country, but it is also among the most ambitious with the highest levels of entrepreneurship in Canada⁴.

Alberta is well-positioned to attract and grow technology and innovation businesses. Our province is an affordable, business-friendly jurisdiction that offers a low-cost business environment with affordable real estate. The province has the lowest corporate tax rate in Canada at eight per cent and has no provincial sales or payroll tax, lowering the cost of doing business. Alberta's government is also committed to reducing red tape to reduce costs and regulatory burden for businesses. A competitive and affordable business environment is complemented by programming that encourages business growth such as the Innovation Employment Grant, designed to support companies in their early stages of development.

As a forward-looking jurisdiction, now is the time to build on our successes and strive to enhance Alberta's position in the technology and innovation sector.

⁴ 2018 GEM Alberta Report, <https://www.gemconsortium.org/file/open?fileId=50327>

Better together

Our economy is stronger when there are equal opportunities for all Albertans to participate. Alberta has untapped potential when it comes to the inclusion of underrepresented populations that have faced systemic and historic discrimination including women, Indigenous people and people of colour. By fostering inclusion in all sectors of our economy, we strengthen our ability to realize economic, social and environmental gains. That is why we are integrating specific supports for women, Indigenous people and people of colour that will facilitate and enhance opportunities in science, technology, engineering and math (STEM), and entrepreneurship. Additionally, through Alberta Innovates' Ecosystem Development Program launched in 2021, an equity and diversity lens is being applied to start-up methodology and early-stage, angel investment best practices in order to advance supports that enhance the availability of diverse and inclusive programs for underrepresented Albertans.

The potential for economic growth that technology and innovation provides also extends far beyond our largest cities. Technology and innovation presents an opportunity to drive regional economic development throughout the province and provide new opportunities for all Albertans to participate more fully in our economy.



What we heard from stakeholders

The Government of Alberta engaged with a broad range of stakeholders, including industry and post-secondary institutions, to help inform the strategy. Engagement took place through a variety of forms, including through the work of the Innovation Capital Working Group. The findings of this group were validated through additional engagement processes and have helped inform current and recommended initiatives and programming to support the sector.

Through the engagement process, several themes emerged around talent, Alberta's investment environment and system coordination. Stakeholders agreed that although Alberta has many of the key attributes to support a vibrant technology ecosystem, awareness of these positive attributes among the national and international business and investment communities needs to be increased.

Talent

Stakeholders recognized that Alberta has many strengths in terms of talent. Alberta's high levels of entrepreneurship, vibrant start-up community, and internationally recognized post-secondary institutions were highlighted as successes. Alberta's livability and affordability were also viewed as key factors that attract and retain talent.

However, stakeholders felt more could be done to develop, attract and retain tech talent. This is driven by a variety of factors, such as a lack of awareness of opportunities and limited number of graduates in some key disciplines. Stakeholders also suggested that government needs to do more to change perceptions about the opportunities available in the province, the livability and lifestyle of Alberta's cities, towns and communities, and the Alberta government's support for non resource-based industries.

Investment environment

Stakeholders highlighted that Alberta's investment environment has several strengths, including well-functioning financial markets, venture capital support programs and a competitive tax system.

Stakeholders indicated that while the amount of early-stage investment by Alberta-based investors is increasing, investment remains challenged by perceptions that the province has a predominantly energy-focused economy and an incomplete understanding of the risk profile for the technology and innovation sector.

Many stakeholders noted the importance of consistent policies to incent early-stage investment and grow venture capital in the province. More opportunities are needed, such as business accelerators and scale-up programs, to allow successful entrepreneurs to mentor new entrepreneurs through the start-up lifecycle and on how to successfully engage investors.

System coordination

Stakeholders indicated that Alberta's technology and innovation ecosystem has many of the foundational components for a successful technology sector. This includes physical infrastructure, human capital, large pools of government data, and strategic strengths in clinical medicine, public health, agriculture and forestry, energy, engineering, information and communications technology, and emerging technologies.

Stakeholders saw system coordination and navigation as a challenge. Improved structures, policies, and data to help coordinate and support collaboration within the technology, research and innovation (TRI) system are regarded as possible solutions. Progress on technology development and commercialization can be enhanced by clarity on roles and responsibilities within the TRI system, as well as a better understanding of the capabilities and capacities of relevant TRI organizations.

Alberta's research and commercialization priorities

All orders of government play a critical role in supporting discovery and applied research, de-risking commercial opportunities, developing talent and driving innovation. By identifying key areas of research that are important to the province, the Government of Alberta can focus resources and foster collaboration to accelerate innovation and technology development. In 2017, Alberta's government released the Alberta Research and Innovation Framework, which outlined a suite of innovation targets in key sectors intended to inspire collective action and provincial alignment. Since then, the world has transformed as a result of the COVID-19 pandemic, changes in the energy industry and advancements in technology. This prompted the Government of Alberta to convene the Research Working Group (RWG) in 2020 to refresh the province's research priorities to align with Alberta's future economic opportunities.



With representation from government, industry and post-secondary institutions, the RWG considered priority areas for research as well as corresponding outcomes by overlaying economic opportunities with Alberta's post-secondary institutional research strengths. The RWG set out research and commercialization priorities in areas where innovative solutions are critically needed to support economic opportunities. With focused effort and sustained investment, Alberta can leverage these priority areas quickly to assume a global and national leadership role. The RWG identified the following research and commercialization priority areas:

- Energy, minerals and clean-tech
- Agriculture
- Health and disease prevention
- Emerging technologies

The appendix further details these priorities that Alberta will strive to achieve. By defining research priorities, government, industry and academia can focus research and innovation resources on overcoming the challenges that are most important to the province – and the world.

Building on the RWG's work, in August 2021, government convened the Research Commercialization Working Group (RCWG), which brings together representatives from industry, post-secondary and government to implement Goal 3 of the Alberta 2030: Building Skills for Jobs strategy that focuses on supporting innovation and commercialization. The RCWG priority areas are aligned with the RWG's.

Our strategy

Alberta is setting an ambitious vision to become an internationally recognized technology and innovation hub. By building on our strengths, working with system stakeholders, and addressing critical success factors for the sector, the strategy will catalyze a globally competitive and robust technology and innovation sector for the future.

As part of its commitment to recovery and Alberta's economic future, Alberta's government is supporting growth of the province's technology and innovation sector as a key sector to help diversify the economy.

By 2030, we aim to create 20,000 new jobs and see our technology companies generate \$5 billion more in annual revenue.

As the most ambitious economy in Canada, Alberta by nature understands the value of innovation as a tool to enhance competitiveness and productivity. This understanding, combined with ongoing leadership in technology and innovation, ensures Alberta will continue to be a leading economic driver in the country. The Alberta Technology and Innovation Strategy is the next step in growing Alberta's economy and reputation as a leading place to innovate.



Our vision

Alberta is an internationally recognized technology and innovation hub that develops and attracts talent, business and investment to grow the technology sector and diversify Alberta's economy.



Supporting the vision: key goals

The strategy identifies five goals that serve as focal points for the overarching vision and outlines objectives and initiatives that will accelerate the competitiveness, growth and reputation of Alberta's technology and innovation sector.





Goal 1:



Increase the depth of Alberta's technology and innovation talent pool

Building a strong workforce is critical to growing the province's technology and innovation ecosystem. Alberta's government continues to take bold steps to transform its post-secondary system through the Alberta 2030: Building Skills for Jobs strategy. The strategy is a transformational vision, direction and new way of working for Alberta's higher education system, which will develop a highly skilled and competitive workforce, strengthen innovation and commercialization of research, and forge stronger relationships between employers and post-secondary institutions. These efforts, along with the Alberta at Work Initiative, will ensure the province has a future-ready workforce with skills that support economic diversification and growth, including a robust innovation and technology talent pool. While attracting, developing and growing the province's talent pool is important, so is the retention of that talent. It is essential that quality employment opportunities, as well as opportunities to build relevant skills, are available.

In partnership with industry, employers and post-secondary institutions, Alberta's government has invested \$5.6 million in a pilot program creating 56 different micro-credential programs that respond to labour market needs in key priority sectors, including technology and innovation programs.

For example, the University of Calgary is offering the Foundations of Software Engineering program in consultation with key industry leaders such as VizworX and Hitachi. Almost 60 students have already been issued a badge for their successful completion of the program.

Objectives

- Expand Alberta's talent pool so our province continues to compete globally.
- Strengthen industry and academic partnerships to generate the knowledge and skills for Alberta's future workforce.
- Direct government funding to advance talent goals that align with Alberta's research priorities and drive commercialization in key sectors.

Initiatives

- Establish and fund initiatives to support short-term skills development and apprenticeship-style programs in a wide range of occupations, including emerging high-tech trades.
- Enhance entrepreneurship programs for science, technology, engineering and math graduates that provide mentorship, networks and seed funding for start-up technology companies that are building on discoveries made at Alberta universities.
- Expand work-integrated learning opportunities for students from across the province to develop skills in key economic sectors, including increasing placements in technology-related businesses.

- Develop micro-credential programs with the technology and innovation sector and post-secondary institutions to support Albertans in rapidly gaining the education and skills they need for high-demand jobs.
- Increase access to high demand post-secondary programs to address labour shortages in the province, such as computer science, information technology, computer engineering and data modelling.
- Explore opportunities to support the growth of the digital media sector in Alberta.
- Expand the Major Innovation Fund to advance post-secondary innovation and technology development that aligns with Alberta's research priorities and are market-oriented.
- Introduce an accelerated technology pathway under the Alberta Advantage Immigration Program to accelerate the growth of Alberta's talent pool.
- Establish a public sector artificial intelligence (AI) lab, with the Alberta government as the anchor tenant, to develop talent, produce new AI solutions for the government, and enable innovators to create commercialization opportunities.



Goal 2:

Increase access to private capital and public investments in Alberta's technology and innovation sector

Greater access to early-stage and start-up capital is vital to establishing Alberta as a place to innovate and grow a business. Experienced investors, particularly angel and venture capital investors, support companies in both the start-up and growth stages, as well as provide advice and mentorship to firms and entrepreneurs. The Alberta government's \$175-million recapitalization of Alberta Enterprise Corporation will help to establish a vibrant venture capital market and ensure Alberta's technology start-ups can continue to access the venture capital they need to succeed.

Attracting and leveraging public investment is also vital to the growth of the sector. Enhancing engagement with other public entities around Alberta's strengths and priorities will also enable better access to investments, particularly from the federal government. By attracting investment to Alberta's technology and innovation sector, we are creating the conditions to build an ecosystem that will further attract and retain talent in the province while creating quality opportunities and diversifying our economy.

Objectives

- Leverage public and private investments to enhance Alberta's investment and capital environment.
- Attract more private capital into Alberta's technology and innovation ecosystem.
- Leverage federal public investments to maximize support for Alberta's technology and innovation priorities.

Initiatives

- Explore options to address gaps in access to venture capital funding in Alberta.
- Advocate for Alberta's fair share of federal research and development funding.
- Continue to invest Technology Innovation and Emissions Reduction (TIER) proceeds in technologies that reduce emissions, create jobs and increase the value of Alberta's natural resources.



Goal 3:

Advance a system of supports that facilitate commercialization of Alberta research and innovations

Research is essential to advancing technology and innovation to ensure Alberta's priority sectors remain competitive. Alberta has a legacy of building and investing in this space. From our strong research and innovation system to the implementation of new and emerging technologies by industry, the province is moving forward to meet the evolving needs of the future.

Commercialization of research is the driver for generating economic value from knowledge and ideas. Businesses, entrepreneurs and spin-off companies from post-secondary institutions are all important players in turning knowledge into products and services. Having the right infrastructure in place to support the advancement of research to the commercialization phase is an essential part of the development process.

Goal 3 of the Alberta 2030: Building Skills for Jobs strategy identifies the need for innovation and commercialization support for post-secondary research. Goal 3 is intended to contribute to Alberta's innovation capacity by supporting post-secondary research and strengthening its commercialization potential to create new knowledge, develop future skills and diversify the economy. The key objectives of Alberta 2030 are reflected in this framework and are being advanced by the RCWG.

Objectives

- Convene institutions, industry and potential investors to advance cutting edge research and innovation collaborations and grow federal and industry investment in priority areas.
- Accelerate Alberta as a leader in the commercialization of technologies, including artificial intelligence, machine learning and quantum science.
- Enhance access to public data to support the creation of new products and services.
- Invest in fundamental infrastructure that enables Alberta's technology and innovation sector to thrive.

Initiatives

- Establish networks of research excellence to advance the commercialization of research in priority sectors.
- Introduce business accelerators to support local entrepreneurs to grow the province's technology start-up sector through Alberta Innovates.
- Work with ecosystem partners to establish and fund a central entity to build and provide first-rate commercialization and entrepreneurship capabilities system-wide.
- Support implementation of an intellectual property framework for Alberta, which will include fostering industry/institution collaboration, and adoption of faculty promotion and tenure policies to incentivize faculty to pursue entrepreneurial activities.
- Strengthen research and innovation planning, and work across entities to align provincial contributions for post-secondary research to promote commercialization to meet economic diversification priorities.

- Develop an Alberta Data Strategy to fully leverage the value of the data government creates and collects to allow for better access and analysis, and enhance the secure and open exchange of data while continuing to protect the privacy of citizens.
- Invest in technologies such as quantum science and artificial intelligence that have significant potential for commercial applications.
- Establish a clean hydrogen centre of excellence to leverage Alberta's existing expertise and infrastructure to become a world leader in hydrogen innovation.
- Leverage an agreement with the federal government to match the province's commitment of \$390 million, dollar-for-dollar, to make a total of \$780 million available to support the Alberta Broadband Strategy and improve internet speeds and connectivity in underserved rural, remote, and Indigenous communities.
- Explore opportunities for Alberta-based start-ups, small businesses and students to pitch innovative ideas and technologies that address a wide range of government issues.
- Engage with Alberta public agencies, as well as with Alberta-based private industry cybersecurity leaders and educational institutions, to establish an Alberta Cybersecurity Community of Interest that will be used to discuss common cybersecurity challenges with a goal to strengthen Alberta's overall cybersecurity, while encouraging development of new Alberta-based talent and solutions.

Goal 4:



Optimize Alberta's technology and innovation ecosystem

An effective and cohesive technology and innovation ecosystem is essential to attracting and retaining talent and supporting entrepreneurs to grow their companies. While many organizations are providing ecosystem supports, some entrepreneurs struggle to navigate the system and still report gaps.

Objectives

- Improve system efficiency and ensure supports are responsive and robust to entrepreneurial needs.



Initiatives

- Work effectively with Alberta's innovation agencies to ensure that entrepreneurs and innovators are receiving targeted and timely support.
- Maintain an ecosystem with strong communication and collaboration mechanisms between innovation agencies and the business community that enable seamless service delivery.
- Continue to monitor the ecosystem to identify gaps as well as opportunities to support the success of Alberta's entrepreneurs.

Goal 5:



Enhance Alberta's reputation as a leader in technology and innovation

Alberta's reputation is key to attracting talent, companies and investment. Alberta has a well-established reputation for innovation in the oil and gas sector. It took homegrown technology and innovative solutions to develop our unique oil and gas resources.

The advancement of the Alberta Technology and Innovation Strategy's goals will be a key part of building our reputation as an attractive location for innovators and entrepreneurs to invest, do business, work and live. Awareness will grow off the momentum we build here at home as Alberta's technology and innovation sector grows. Letting the world know that Alberta is open for business and has the foundation for technology and innovation companies to thrive is essential to our success in attracting even more innovators, technology companies and investment.

Promoting Alberta's technology and innovation sector, its story, and specific investment opportunities across Canada and abroad will further support growth of the sector's ecosystem.

Objectives

- Strengthen Alberta's reputation as a technology hub and the best place to start and grow a technology business.
- Attract investment by global anchor firms to Alberta to enhance the technology and innovation sector.

Initiatives

- Work with industry and ecosystem partners to build Alberta's international reputation as a place to innovate, invest and grow.
- Through the Invest Alberta Corporation, continue to tell Alberta's story, improve investor awareness and attract investment from global technology firms.
- Undertake a labour-related marketing campaign to attract technology and innovation talent to Alberta.
- Explore new investment incentives to attract anchor companies to build out Alberta's technology and innovation ecosystem.

Conclusion

As the overarching framework to guide Alberta's technology and innovation sector, the Alberta Technology and Innovation Strategy marks the beginning of a long-term approach to accelerate the province's economic recovery and future growth.

Looking ahead, the Government of Alberta will continue to consult with industry, investors, other governments, entrepreneurs, post-secondary institutions, innovation system agencies and others to build a future-focused and sustainable Alberta economy driven by technology and innovation. The strategy will remain a living document as we implement targeted initiatives that will allow Alberta to move forward on the Alberta government's objective of growing the province's technology and innovation sector.

Alberta's technology and innovation sector is well-positioned to lead the province's economic recovery and create a new future for Alberta. The province has built the fundamentals necessary for technology and innovation to thrive, including a strong innovation ecosystem and an ambitious, diverse population. The time for a new future in Alberta's technology and innovation sector is now.



Appendix: Research and commercialization priorities

Alberta's research and commercialization priorities serve to guide the Government of Alberta's investments in research across multiple agencies to ensure we build our capacity to pursue and commercialize areas of particular importance to our province. Setting priorities does not mean that other areas are not important – instead, the priorities highlight a selection of significant opportunities and challenges facing Alberta.

These priorities were established through an industry-post-secondary working group, the RWG, established in 2020 to develop recommendations for the Ministers of Jobs, Economy and Innovation and Advanced Education. The RWG in its work identified four key priorities for Alberta's future focus in research, economic development and investment. The RCWG is continuing to use these priorities as it conducts its work.

Energy, minerals and clean-tech

Alberta has abundant energy resources, but we need to improve efficiency of use, reduce emissions and integrate energy from all available sources into the electricity grid. A desirable energy future is one with a diversity of sources and suppliers that progressively reduce carbon emissions, and one that is economically attractive for consumers and other stakeholders. Research will support the development of reliable, low-cost, sustainable energy supplies to ensure Alberta succeeds in a lower emissions world.

Sector research and commercialization priorities include:

- New clean energy sources and storage technologies that are efficient, cost-effective and reliable
- Technologies to optimize effective and efficient resource extraction and processing
- Discovery, development and production of non-renewable and renewable energy resources, value-added and alternative products, the minerals value chain, and green technologies

- Emissions reduction and the sustainable production and use of Alberta's energy and natural resources
- The bio-economy, production of renewable energy, and rural development
- Innovative processes and technologies to advance and strengthen Alberta's geological, geoscience and geotechnical resources

Agriculture

Alberta has a proud history of resilient, innovative farmers, food processors and ranchers. In order to take advantage of opportunities and meet the challenges of the future, Alberta's agriculture and food industries need to accelerate the adoption of new technologies, products and services. To respond to increasing global demand, Alberta needs to develop internationally competitive, sustainable, profitable, high-intensity and high-production capacity in new and existing food products.

Sector research and commercialization priorities include:

- Enhanced food production through innovative technologies
- Responsible management of natural resources
- Sustainable production of safe, high-quality products
- Enhanced food safety and quality
- Investment attraction and increased value-added product development and commercialization
- Increased adoption of digital and technology solutions



Health and disease prevention

The COVID-19 pandemic has highlighted the importance of technology and innovation in the accelerated development of life-saving vaccines. Research will be essential to combating future disease outbreaks as well as building a resilient workforce and healthy communities throughout the province. Alberta must leverage its strengths to generate wider economic benefits through commercialization and partnerships with the health industry. To help combat rising costs, new innovative ways of delivering care and tackling disease prevention and treatment must be prioritized.

Sector research and commercialization priorities include:

- Increased application of digital technologies in health care and communities
- Accelerating leading-edge research and commercialization of vaccine treatments
- Enhancing commercialization of pharmaceutical and life sciences technologies
- Advancing novel diagnostics, medical devices and therapeutics

Emerging technologies

Emerging and advanced technologies drive innovation across all sectors. The discovery and application of these technologies remains a fundamental priority and a key ingredient to economic prosperity and job creation. The use of artificial intelligence and machine learning are transforming sectors across the economy, while conceptual technologies such as quantum systems have the potential to transform commercial products, advance cybersecurity and enhance global supply chains. In order for Alberta to remain competitive, our province needs to be at the forefront of research and commercialization of new and emerging technologies.

Sector research and commercialization priorities include:

- Advancing commercialization opportunities in areas of existing strength, including artificial intelligence, machine learning and quantum science
- Developing technologies to increase productivity, improve efficiency, reduce environmental impact, and achieve a low-carbon future
- Harnessing the digital economy across sectors, including infrastructure, broadband, and big and open data, to encourage digital adoption



Alberta ■