

PUBLIC ACCOUNTS COMMITTEE – July 7, 2020

Economic Development and Trade

Written Responses

Table of Contents

Energy diversification initiative – Mr. Bilous – (PA – 281 to 282) 2

Alberta top trading partners – Mr. Gotfried – (PA – 286)..... 3

Alberta air cargo growth – Mr. Bilous – (PA – 287) 5

Interactive Digital Media Tax Credit – Ms. Rosin – (PA – 290 to 291)..... 5

Market and Product Diversification – Mr. Dach – (PA – 291) 7

Companies that moved to Alberta – Mr. Bilous – (PA – 293) 8

Artificial Intelligence, machine learning and tech sector – Mr. Bilous – (PA – 293) 9

Technology Investment work with Advanced Education – Mr. Bilous – (PA – 293)..... 10

Research Investment – Mr. Bilous – (PA – 293) 11

Challenges in extractive industries – Mr. Gotfried – (PA – 293)..... 12

Success in the government sector – Mr. Gotfried – (PA – 293) 12

Start-ups Licensing University Technology – Ms. Rosin – (PA – 293) 13

Alberta Investor Tax Credit Program – Ms. Rosin – (PA – 293)..... 14

Energy diversification initiative – Mr. Bilous – (PA – 281 to 282)

Q1. Mr. Bilous: I'd like to begin with a few questions about the ministry's energy diversification initiative and some of the details found on page 24 of the annual report. The report notes that the investment made by the Canada Kuwait Petrochemical Corporation was \$4.5 billion. Now, this follows on a number of investments like Inter Pipeline's \$3.5 billion facility in the Industrial Heartland. How much was put forward in terms of royalty credits and how much investment was leveraged? Do you also have an estimated number of jobs that were created from at least those two projects as they move forward? (PA - 281) Do you folks have an estimated impact on the Alberta GDP when these two facilities are up and running? (PA - 282)

Answer:

Leverage

- The Canada Kuwait Petrochemical Corporation (CKPC) was awarded \$300 million in royalty credits for a propylene and polypropylene facility, leveraging up to \$4.5 billion in investment.
- Inter Pipeline was awarded \$200 million in royalty credits leveraging a \$1.85 billion investment (at time of the announcement).

Jobs

- According to the company's own statements, the CKPC's petrochemical facility in Sturgeon County will provide highly skilled, educated and well-paid jobs with more than 50,000 person-years of employment anticipated over the life of the project. At the peak of construction, more than 3,000 workers will be on site, with the project expected to create more than 200 full-time operations and head office jobs upon completion. (Source: <https://morinvillenews.com/2019/02/05/sturgeon-county-petrochemical-upgrading-facility-moves-forward/> - Feb 9, 2019 article)
- According to the company's own statements, more than 13,000 direct and indirect jobs are expected to be created for Canadians during the construction period of Inter Pipeline's Heartland Petrochemical Complex. (Source: <https://www.interpipeline.com/investor/investor-presentations.cfm> - (Project Fact Sheet – Heartland Petrochemical Complex)

GDP Impact

- The EDTT Ministry does not have an estimated GDP impact beyond the investment made in the construction phase.

Alberta top trading partners – Mr. Gotfried – (PA – 286)

Q2. Mr. Gotfried: Again to the department, continuing a little bit on the export market line of questioning here, performance indicator 3(b) shows how reliant we are in Alberta on the American economy and our trade with the United States. Can the department share the ranking of our largest non-American trading partner so we might understand who we're trading with, what we're trading, and how we're transporting our largest export products outside of the U.S.? (PA – 286)

Answer:

- The table below provides a summary of Alberta's top 20 trading partners. The United States was Alberta's biggest export market in 2019 accounting for 87.82 per cent of total provincial exports. Alberta's non-American trading partners in 2019 are shown in the table below with China being our largest non-American partner at 3.59 per cent, followed by Japan at 1.46 per cent, Mexico at 0.93 per cent and South Korea at 0.53 per cent.

Alberta's Top 20 Trading Partners in 2019 (exports in millions)		
1	United States	\$103,415.11
2	China	\$4,186.57
3	Japan	\$1,710.58
4	Mexico	\$1,077.06
5	Korea, South	\$624.87
6	Bangladesh	\$334.27
7	Australia	\$312.66
8	Indonesia	\$310.85
9	Netherlands	\$264.66
10	France	\$258.04
11	Taiwan	\$247.64
12	United Arab Emirates	\$239.72
13	Hong Kong	\$222.20
14	Italy	\$213.82
15	Colombia	\$181.96
16	India	\$180.71
17	United Kingdom	\$175.95
18	Singapore	\$175.82
19	Germany	\$136.77
20	Pakistan	\$129.14

- All major export types from Alberta are shown below for the top 4 non-American trading partners. The largest 3 product categories per country are highlighted. Year 2018 is the latest year with data available on the export.alberta.ca website (exports in billions):

Export Type	China	Japan	Mexico	South Korea
Food & Agriculture	\$2.66	\$1.28	\$0.553	\$0.444
Minerals	\$0.536	\$0.135	\$0.375	\$0.171
Chemicals	\$0.776	\$0.007	\$0.007	\$0.014
Plastics & Rubber	\$0.162	\$0.010	\$0.212	\$0.005
Leather & Fur	\$0.117	\$0.001	<\$0.001	\$0.020
Wood Products	\$0.724	\$0.294	\$0.005	\$0.322
Textiles	<\$0.001	<\$0.001	<\$0.001	\$0
Apparel	<\$0.001	<\$0.001	<\$0.001	<\$0.001
Metal, Stone, Glass	\$0.117	\$0.227	\$0.040	\$0.109
Machinery	\$0.106	\$0.010	Not available	\$0.020
Miscellaneous	\$0.067	\$0.005	\$0.002	\$0.006
Special Provisions	\$0.032	<\$0.001	\$0.008	<\$0.001
TOTAL	\$5.31	\$1.98	\$1.21	\$1.11

- Alberta's exports are transported to international markets in a variety of ways. Energy exports to the U.S. will typically move via pipeline, and in limited capacity, via rail. For non-U.S. exports, many Alberta commodities are transported to ports (primarily in B.C.) and shipped by tanker to international markets in Asia and Europe.
- In 2018, the most recent data available, Alberta's exports left Canadian ports by the following transportation modes:
 - other (\$72.4 billion - largely pipeline);
 - rail (\$20.8 billion);
 - water (\$14.3 billion);
 - road (\$9.5 billion); and
 - air (\$1.9 billion)

Note: Data sourced from Statistics Canada and is provided on a calendar year basis.

Alberta air cargo growth – Mr. Bilous – (PA – 287)

Q3. Mr. Bilous: When we talk about, you know, growth in trade and our exports, I think that's really valuable. Now, just to comment on the previous line of questioning, my understanding is that air cargo and cargo flights and the amount of cargo that Alberta was exporting increased over the period of 2015 to 2019, so if I can ask the ministry to supply those details to the committee on how much our cargo grew in that period of time, that would be greatly appreciated. (PA – 287)

Answer:

- The table shows the total value of Alberta's products exported via the mode of air between 2015 and 2019. While the value of air cargo increased from 2016-2019, the growth in products via this mode of transportation contribute less than 2 per cent of Alberta's total exports.

2015	2016	2017	2018	2019
\$1.8 billion	\$1.4 billion	\$1.7 billion	\$1.9 billion	\$2.1 billion

Interactive Digital Media Tax Credit – Ms. Rosin – (PA – 290 to 291)

Q4 a. Ms. Rosin: Okay. Then my final questions will be in relation to the interactive digital media tax credit. Earlier you had stated, or maybe it was Michele Evans that stated, that there was an additional 5 per cent tax credit that was accessible for companies who chose to put women or underrepresented groups on their boards. I'm wondering: of those 23 companies who accessed this tax credit, how many of those accessed the additional 5 per cent? (PA – 290)

Answer:

- Of the 23 companies conditionally approved for the Interactive Digital Media Tax Credit (IDMTC), 12 firms accessed the Diversity and Inclusion component.

Note: The reference to the 23 companies was since the inception of the program not just 2018-19.

Q4 b. Ms. Rosin: I'm wondering if you can comment if there was any real benefit to the taxpayer on that additional 5 per cent for putting women and underrepresented groups on the boards. Further, I'm wondering if you can comment as to whether any of the businesses who accessed that additional 5 per cent for putting women and underrepresented groups on their boards moved here specifically for that policy or if they were going to come here regardless and just took extra advantage of the taxpayer dollar to access that extra 5 per cent. (PA – 290)

Answer:

- This incentive is meant to increase the number of women and underrepresented groups in the portion of a company's workforce for which they are receiving a tax credit under the IDMTC i.e in technical positions. The Diversity and Inclusion component of the IDMTC is not specifically targeted to increase board representation for women and underrepresented groups and hence this parameter is not specifically tracked by Economic Development, Trade and Tourism (EDTT).
- Corporations who choose to participate in the Diversity and Inclusion program must employ under-represented employees and have a public facing diversity and inclusion policy on their website to be eligible for the credit. Employee data for this 5 per cent credit is collected via a voluntary confidential survey using company-provided eligible employee emails. This survey requests information about the nature of diversity of the individual and requests confirmation that the provided information is true.
- The ministry does not have a way to track if this policy led to the attraction of companies.

Q4 c. Ms. Rosin: I think you guys were going to give me in writing at some point after this committee today the number of companies and the dollar amount that was given out in that program. (PA – 291)

Answer:

- In 2018-19, there was \$6.2 million conditionally approved for 11 companies.
- Of the 11 companies, seven companies accessed the Diversity and Inclusion (D&I) additional tax credit incentive.
- Five of the seven that accessed the D&I incentive reported new hires in 2018-19. 23 employees were new hires in the D&I categories.

Market and Product Diversification – Mr. Dach – (PA – 291)

Q5. Mr. Dach: Thank you, Chair. I'll continue on that line, push it back to market and product diversification, as the deputy minister alluded to earlier. Now, it's projected that by 2050 there will be an estimated 9.7 billion people on this planet, requiring about 70 per cent more food than the world produces at the moment. Of course, that leads to great opportunities for Alberta Agriculture; Economic Development, Trade and Tourism, of course, will play a leading role. Hopefully, in 2018-2019 we made some good progress toward serving those new markets and diversifying products.

I'm wondering, though, if we could find a breakdown for the agricultural components of, say, the investor tax credit and the research and development and export development out of the numbers that we heard generally or globally talked about to show what the agricultural components of those programs were.

If need be, you can respond in writing. (PA – 291)

Answer:

- The intent of the Alberta Investor Tax Credit (AITC) program was to offer a 30 per cent tax credit to investors who provided equity capital to small businesses. Eligible Alberta small businesses must only be doing research, development or commercialization of new technology, new products or new processes.
- AITC supported 9 businesses that indicate they are operating in or supporting the agribusiness sector by issuing \$4.9 million in tax credits, representing over \$16 million in equity raised.
- The Alberta Export Expansion Program (AEEP) supported 5 ag / agrifood companies, receiving just under \$17 thousand in grants to promote their exports.
- The Research Capacity Program (RCP) also supported projects related to the agriculture sector amounting to \$2.3 million.

Companies that moved to Alberta – Mr. Bilous – (PA – 293)

Q6. Mr. Bilous: Invest Alberta is an entity that, of course, was stood up years ago within the department. I'm curious if in the 2018-19 year the department can supply the list of companies in that window that moved to Alberta or set up shop or committed to invest in Alberta in that area, so the size of investments, the number of companies. Of course, Deputy Minister, you referenced Amazon, but if you can talk about some of the other companies, maybe like rocket space and others, that came into the province in part because of the great work done at the ministry. (PA – 293)

Answer:

- In 2018-19, Invest Alberta tracked 206 investment opportunities. Of these, Invest Alberta and partners were actively involved in facilitating 16 investment wins, representing over \$5 billion in capital investment and over 4,000 new jobs. Fourteen of these wins represent investments outside traditional oil and gas, supporting the province's economic diversification goals. Examples of 2018-19 investment wins as referenced on page 50 of the Annual Report include:
 - Flair Air moving its headquarters to Edmonton, the relocation will bring about 75 jobs from Kelowna;
 - Amazon opening a second fulfillment centre warehouse in Leduc County, providing 600 new full-time permanent jobs;
 - CST Group Limited re-opening the Grande Cache Coal mine, a \$632 million investment that put over 100 people in the community back to work; and
 - Pembina Pipeline Corporation, along with Petrochemical Industries Company K.S.C. of Kuwait (PIC), constructing a \$4.5 billion petrochemical facility in Sturgeon County through their joint venture entity, Canada Kuwait Petrochemical Corporation (CKPC). The estimated job creation number is 2,500 jobs.

Artificial Intelligence, machine learning and tech sector – Mr. Bilous – (PA – 293)

Q7. Mr. Bilous: As well, jumping back to AMII, if the ministry can provide some of the work that's been done, how the ministry has gone about supporting the artificial intelligence machine learning and tech sectors. Does the ministry have a sense of how big artificial intelligence will be in terms of the economy moving forward that they would have used in their 2018-19 projections as well as how Alberta was positioning itself back then to be a significant player in the economic space? (PA – 293)

Answer:

- According to the McKinsey Global Institute (2018), artificial intelligence has the potential to incrementally add 16 per cent or around \$13 trillion by 2030 to current global economic output— an annual average contribution to productivity growth of about 1.2 per cent between now and 2030.
- Alberta's strength in Artificial Intelligence (AI) and Machine Learning (ML) is primarily concentrated at Amii and the University of Alberta, which are globally recognized among the top five AI/ML research institutions.
- Since 2002, the Government of Alberta (GoA) and Alberta Innovates provided approximately \$58 million in funding for Alberta's AI sector.
- In 2018-19, EDTT provided Amii support for its Innovation Affiliates Program (IAP) pilot through a \$4 million grant.
- The IAP pilot is a step to transition from research to supporting companies that want to use artificial intelligence to advance their business interests. For example:
 - Innovators and small- and medium-sized enterprises (SMEs) that lack an understanding of how to strategically grow their business through machine learning;
 - Innovators and SMEs that lack the core competency needed to apply machine learning for strategic growth; and
 - Graduates and other highly qualified personnel (HQP) that lack employment receptors that will retain talent within Alberta's innovation system.
- The pilot was successful in providing opportunities and mechanisms for accelerating and enabling direct interactions between Amii and industry partners and others within Alberta's innovation ecosystem to grow Machine Intelligence (MI) in Alberta.
- Amii established formal relationships with 43 innovation affiliates, exceeding its target of 25 that it set for this pilot.

Technology Investment work with Advanced Education – Mr. Bilous – (PA – 293)

Q8. Mr. Bilous: The other thing I want to touch on from a previous question is if the ministry can work with the Department of Advanced Education to find out the number of women in programs in technology, programming, and computer science at the universities and use that to look at why that diversity tax credit was a piece of it - I believe that there's a disparity between the number of women in postsecondaries and the number that get hired after postsecondaries - and if the tax credit was, in fact, used to help narrow that gap and reduce those barriers that women and others face in getting into the tech space, so looking at the number of women hired into those positions because of the tax credits and the support that they gave but recognizing that they were very, very new, and part of the challenge of any new program is uptake. (PA – 293)

Answer:

- This is a joint response by EDTT and Advanced Education (AE). Data provided by AE from the Learner and Enrolment Reporting System (LERS), based on Statistics Canada classifications:
 - 2018-19 had just under 269,000 learners enrolled in approved programming at a publicly funded post-secondary institution in Alberta. Just under 48,500 of these learners were enrolled in STEM (Science, Technology, Engineering and Math) programs, and of these 38 per cent were female (18,200 learners). The proportion of females in STEM programming has been increasing over the past five years, going from 36 to 38 per cent of total STEM enrolments.
 - Diversity and inclusion is a component of the Interactive Digital Media Tax Credit focused on supporting businesses, not post-secondary students.
 - Five of the seven that accessed the IDMTC program D&I incentive reported new hires in 2018-19. 23 employees were new hires in the D&I categories.

Research Investment – Mr. Bilous – (PA – 293)

Q9. Mr. Bilous: I'd like to draw your attention to page 32 of the annual report, which focuses on the sponsored research revenue attracted by Alberta's comprehensive academic and research universities. I see that over the past few years there was a relatively significant uptick in research investment. In the last reporting period it was \$69 million above the target. I'd first like to ask about why attracting these dollars is important. What does it mean for our innovation ecosystem? What does it mean for future commercialization opportunities? What work did the department of EDT do with Advanced Education in order to enhance, to reposition our universities? We know that they are world-class and world-renowned, but what was the outcome looking at projections? Obviously, the ministry would have done some economic impact assessments, and if they can supply that to the committee, it would be greatly appreciated. (PA – 293)

Answer:

- Research, including university research, is a critical element of Alberta's research and innovation system. It plays a key role in driving economic development through the discovery, mobilization and commercialization of new knowledge to contribute to jobs and growth for Albertans' benefit.
- Success in attracting research dollars is accomplished through highly competitive, excellence-driven activities.
- The ability of universities to attract research funding is an indicator of the quality of the university's faculty and research programs, which is an important measure of the capability and capacity of Alberta's research system.
- The more research dollars these institutions can draw, the better able they are to attract and retain world-class researchers. These researchers in turn increase Alberta's international profile and attract top talented graduate students. These factors contribute to the development of the next generation of innovators to bolster Alberta's economic potential.
- EDTT and AE work closely together to strategically position the province at the forefront of research and innovation.
 - In 2018-19, the Major Innovation Fund (MIF) resulted in significant external research dollars (\$25M+) attracted to the province to support transformative research projects in priority fields such as autonomous systems and quantum technologies.

Challenges in extractive industries – Mr. Gotfried – (PA – 293)

Q10 a. Mr. Gotfried: We're referencing page 45 of the annual report. Can the department explain the challenges in winning opportunities in the extractive industries? It appears that our track record in this regard is not overly encouraging. (PA – 293)

Answer:

- Some of the challenges that Alberta faces in winning opportunities in the extractive industries include:
 - The federal regulatory environment such as *Canadian Energy Regulator Act* and *Impact Assessment Act* have resulted in reduced foreign investment in the extractive industry;
 - Geopolitical uncertainty; and
 - Commodity price volatility.

Success in the government sector – Mr. Gotfried – (PA – 293)

Q10 b. Mr. Gotfried: Also, relative to page 45 can the department explain our success in the government sector and provide details on what exactly that means as a sector to Albertans? (PA – 293)

Answer:

- The government sector is a category that mostly captures the advocacy opportunities such as the development of memoranda of understanding; holding bilateral meetings and delivering Alberta's priority advocacy messages to key elected and senior officials.
- These opportunities are not always targeted to specific trade or investment outcomes but are activities geared to enhance Alberta's relationships with other jurisdictions.
 - For example, the Minister and Deputy Minister have undertaken missions nationally and internationally to promote the investment opportunities in Alberta.
 - Another example is when the Senior Representative in the United States has a meeting with a Member of Congress to articulate the importance of Alberta's energy resources to U.S. consumers and manufacturers.
- These wins tend to be immediate, whereas investment opportunities can take months or years to come to a final decision.

Start-ups Licensing University Technology – Ms. Rosin – (PA – 293)

Q11. Ms. Rosin: On page 14 of the annual report the performance indicator states the number of start-ups licensing university technology per million population. (PA – 293)

11 a. Ms. Rosin: I'm wondering if you can explain the indicator in a little bit more detail. Can you explain the indicator in a little bit more detail? (PA – 293)

Answer:

- Due to the variability in the number of start-ups that license university technology year-to-year, this indicator is best used in five-year averages to better show a trend.
- The figure presented is also a sample and not the total number of start-ups licensing technology in a jurisdiction. It is best used to compare growth rates and to other jurisdictions.

11 b. Ms. Rosin: I'm wondering if that is a correct interpretation. You can see that the rate nearly doubles from 2012 to 2016, and I'm wondering whether you can comment on whether this is a low number to the department or how we compare with other provinces.

Answer:

- Based upon available 5 year averages of data comparing Alberta to other provinces over time, Alberta has performed well on this measure and is improving in its standing. Alberta has moved from 3rd to 2nd place in Canada over time.

5-Year Period	Provincial Ranking (by average licenses per million)	Source
2009 to 2013	1 – Ontario 2 – British Columbia 3 – Alberta	Report on Competitiveness: Alberta 2014
2011 to 2015	1 – Ontario 2 – Alberta 3 – British Columbia	Report on Competitiveness: Alberta 2016

11 c. Ms. Rosin: Can the department speak to the barriers start-ups face when licensing university technology, and does the department measure economic activity related to start-ups licensing university technology?

Answer:

- Barriers identified by stakeholders include:
 - Ownership of intellectual property (IP);
 - Individually negotiated IP agreements which can take a long time and be too restrictive for a start-up to raise sufficient capital to commercialize an idea; and
 - Insufficient incentive to commercialize IP.
- Although the department tracks the number of startups that license technology, it does not track the economic activity specifically for startups that use university licensed technology.

Alberta Investor Tax Credit Program – Ms. Rosin – (PA – 293)

Q12. Ms. Rosin: Going back to the Alberta investor tax credit program, at the bottom of page 42 it states, “Venture Capital Corporations did not come online as expected.” I’m wondering if you can just comment as to why that happened and if you can provide any job numbers that resulted from this program. (PA – 293)

Answer:

- Venture Capital Corporations (VCCs) may not have come online as expected due to the time required to create special purpose corporations solely for the program.
- Investment in VCCs represented less than 5 per cent of the AITC program’s tax credit certificates in the first two years of the program.
- However, there was an almost 80-fold increase in investments into VCCs between the first and second years of the program.
- The program was anticipated to create between 2,200 and 4,400 jobs.