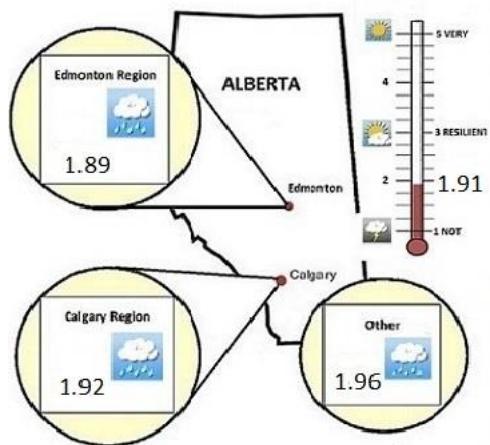


March/April 2016

The Alberta Council of Technologies is interested in improving the economic resilience of the Province's economy, its Regions and industries. Each fall and spring we survey our contacts gathering their viewpoints of the economic resilience of Alberta's Regions and industries. At our Fall Conference, Creativity & Convergence - Creating the new Alberta! three themes emerged: A resilient economy, Leadership in innovation, and Energy transitions. This past March we asked our network to rate both the province's economic resilience and the effectiveness of Alberta's Innovation Ecosystem that supports SMEs.

March survey shows further weakening and wide-spread decrease of confidence in Alberta's economic resilience



All Regions, Edmonton in particular, and most industries have decreased in resilience

People/job impact is severe

66% or 2:3 view as “ineffective” Alberta’s Ecosystem supporting SMEs

Banks and VCs are too risk averse to be of help

Appropriate Government roles are in policy support for small business innovation and entrepreneurship, direct investing in research, and negotiating trade agreements

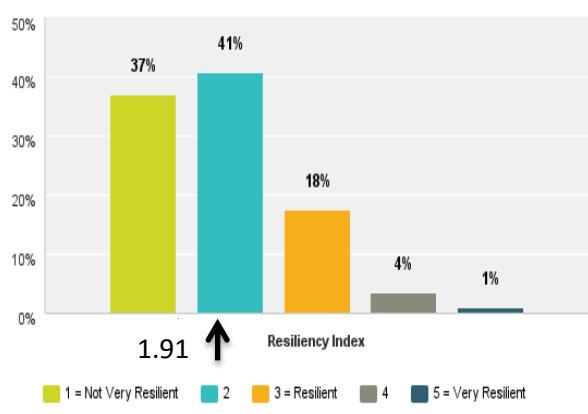
The most vulnerable industries – least resilient and most susceptible to a weak SME ecosystem, are: InfoTech (Analytics), BioTech (Health), Research (Education), and Forestry (Wood Products). Most resilient and least susceptible are: Legal (Security), Human Resources (Development), and Tourism (Entertainment & Hospitality).

Industries with the most potential for wealth creation in Alberta are: **Short-term** – Tourism, Agriculture and Construction; **Mid-term** – BioTech (Health), Renewable energy, Transportation (Logistics), and InfoTech (Analytics); **Long term** – Nuclear including advanced manufacturing and again, Renewable energy.

Alberta's overall economic resilience has decreased by 18% since the fall to 1.91 where 5.00 equates to Very Resilient. The regional decrease continued in Calgary, dropping by 13% to 1.92 and even more in Edmonton that experienced a drop of 19% to 1.89. The rest of the Province decreased by 16% to 1.96. The ratings reflect a continuing decrease in the Energy industry and a broad spillover to: Transportation, Forestry, Construction, Research (Education), Engineering, InfoTech and Agriculture. Only Legal Services, Tourism, and Human Resources escaped the decrease.

Q1. On a scale from 1 = Not Very Resilient to 5 = Very Resilient, please rate how you view the diversity of Alberta's economy

Answered: 194 Skipped: 0



Cloud Summary of Comments:
 Reliant Look Resource Potential Sector Commodity
 Resilient Unemployed Alberta Diversify
 Oil Capital Economy Jobs Market Short Term
 Economic Question Government Diversification

Regional Breakdown

Province Overall	1.91 : 5.00
Edmonton Region	1.89 : 5.00
Calgary Region	1.92 : 5.00
Other incl. missing	1.96 : 5.00

The Province's overall economy is not very resilient (1.91: 5.00). The Edmonton Region is now at 1.89, comparable to Calgary's index of 1.92 and Other of 1.96.

The Alberta economy is overly reliant on carbon for energy - oil and gas, leaving Alberta vulnerable to geo-political events affecting the price of oil and access to market beyond its control. Leadership and vision, financing and commitment are cited as core to increasing Alberta's economic diversification.

Seasonal changes = Fall 2015 to Spring 2016:

The Overall Provincial index has declined 18% from 2.31 in the fall to 1.91 now. The Regional decline in Calgary has continued – down 14% (2.22 to 1.92) and even more in Edmonton –down 19% (2.34 to 1.89). Other – the rest of the Province, has decreased 16%, from 2.34 to 1.96.

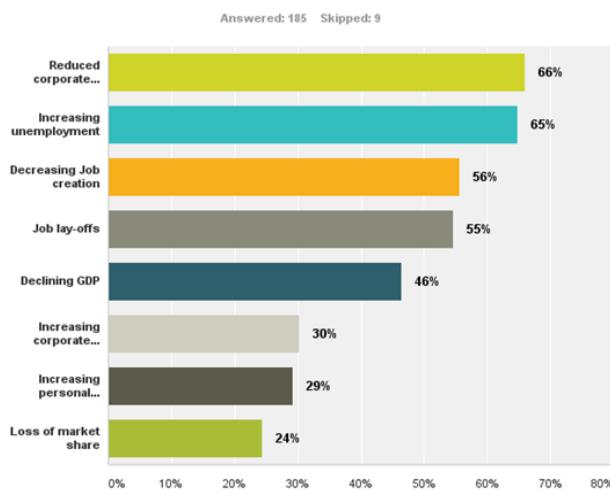
The decline in resilience since the fall has been very broad, the decline in Energy has spilled over from Calgary to the rest of the Province - particularly Edmonton, and across most Alberta industries.

Comments – See also Appendix A. on page 9:

- “We lack leadership at the political and corporate levels. There is no vision.” (1 – Calgary)
- “Dependence on natural resources and the energy sector is a weakness which leads to an up and down economy.” (1 – Other)
- “We need financing sources for early stage companies to grow jobs.” (2 – Calgary)
- “Banks and government lending arms are not able to provide the proper support as their entire focus is on physical asset lending.” (2 – Edmonton)
- “Still too dependent on energy as seen by the huge number of unemployed energy workers unable to find employment elsewhere.” (2 – Calgary)
- “The economy is still fairly resource based; but much more diverse than in the 90's and 80's.” (3 – Edmonton)
- “Oil & Gas is very resilient. Like everything else there are periods of slowness due to commodity prices but within Oil & Gas there are many other supporting industries such as hi-tech, manufacturing and environmental. This province just needs to keep the oil producers invested in Alberta and all else will follow. Investing in anything else will and has resulted in failure and wasted tax dollars.” (4 – Calgary)
- “Albertans are always inventing.” (5 – Edmonton)

Next, is to better understand what factors underlie the assessment of economic resilience.

Q2. What factor(s) are the most sensitive measures(s) of whether Alberta's economy is or is not resilient?



Cloud Summary of Comments:

People Moving Reduced Sectors Creation
 Companies Total Jobs Government
 Alberta Decreasing Investment Think
 Economic Commercialize GDP Projects
 Development Stability Capita Growth

The most sensitive measures of resilience are Reduced corporate investment (66%), and personal measures – Increasing unemployment (65%), Job creation (56%) and Job lay-offs (55%). The least sensitive is the Loss of market share (24%).

Seasonal changes = Fall 2015 to Spring 2016:

The ranking of measures has not changed from the fall. The most sensitive measure - Corporate spending, remained steady at 66%, but now on par with Unemployment that rose from 57% to 65%. The biggest changes were a 30% increase in reference to Corporate and Personal bankruptcies.

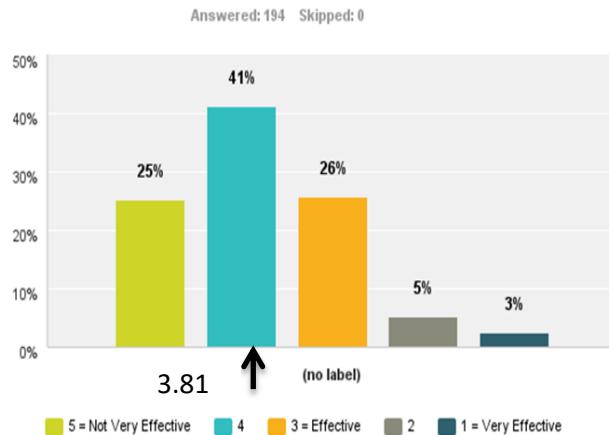
As perceived economic resilience has decreased, the sensitivity of more immediately apparent personal measures have increased: unemployment, layoffs, job creation, and bankruptcies.

Comments – see also Appendix B. on page 13:

- “People moving away.” (Calgary)
- “Total absence of small business financing.” (Edmonton)
- “Lot of projects canceled.” (Calgary)
- “Anemic company / entrepreneurial development ecosystem.” (Edmonton)
- “Without Corporate investment all these other factors come into play.” (Other)
- “All these measures speak to the issue. We do not create companies. We do not create new ideas. We do not commercialize. We are not leaders in the world.” (Calgary)
- “The amount of investment money that leaves the province.” (Edmonton)
- “Development permits, increased use of food banks.” (Edmonton)
- “Decreasing per capita GDP.” (Edmonton)
- “Wage freezes, reduced hours.” (Calgary)
- “Declining exports.” (Edmonton)
- “Uncertainty with Government Policy decisions.” (Other)
- “Flight of companies to other areas.” (Calgary)
- “Decreasing housing starts, flat or decreasing property values.” (Edmonton)
- “Every industry has low periods of growth and these should not be interpreted as lack of resiliency.” (Calgary)

Next, we investigate the effectiveness of Alberta's ecosystem for supporting SMEs.

Q3. On a scale from 5 = Not very effective to 1 = Very effective, please rate how you view the effectiveness of Alberta's ecosystem for supporting SMEs.



Note. The scale is reversed from that employed in Question #1.

Cloud Summary of Comments:

Medium Sized Poor Rules Provincial Ecosystem
 Amounts Businesses Services SMEs
 Ideas Government Sectors Investment
 Strategy

Regional Breakdown

Province Overall	3.81 : 5.00
Edmonton Region	3.81 : 5.00
Calgary Region	3.98 : 5.00
Other incl. missing	3.50 : 5.00

Alberta's ecosystem supporting SMEs, on which diversification and increased resilience may depend, is viewed as Not Very Effective at 3.81, with 66% of the respondents viewing the system as less than effective. The Other and Edmonton Regions are rated as somewhat more effective than Calgary.

The system appears immature with no clear strategy, objectives or quantitative performance measures. The system is overly reliant on government support, and therefore highly risk averse. Other than anecdotes and "sentiment" such as this survey, we are not aware of there being any objective measures for monitoring and guiding the development of Alberta's SME ecosystem.

If SMEs are viewed as fundamental to job creation and innovation, then development of the system may be key to Alberta's economic recovery and development of a more resilient economy. What, for example are the expected outcomes and what will contribute to the survival, growth and retention of Alberta's SMEs?

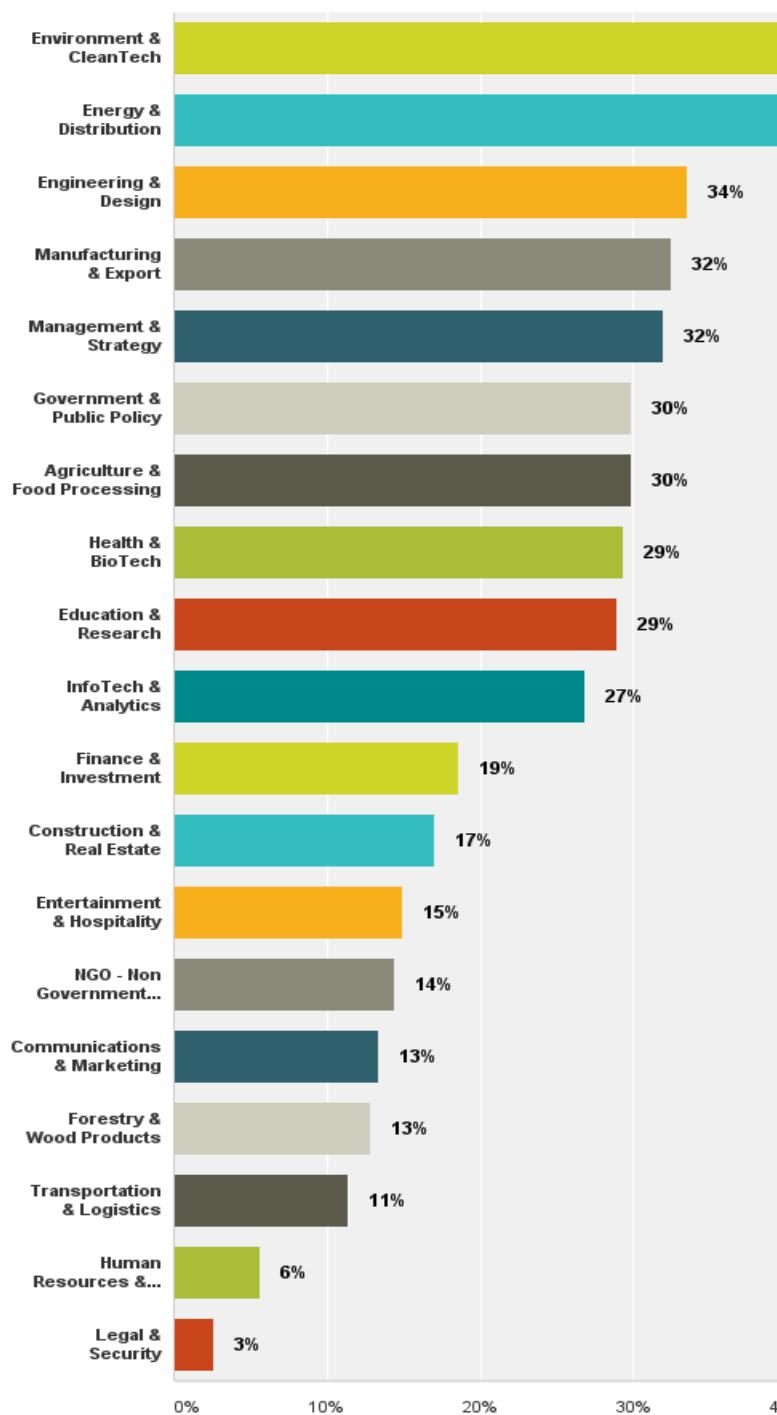
Comments – see also Appendix C. on page 15:

- "There is absolutely no support for SMEs in Alberta, except for Natural resources." (5 – Edmonton)
- "No obvious strategy - programs are not sustained - energy rules, and disadvantages other sectors that are not directly connected." (5 – Calgary)
- "Innovation ecosystem almost entirely gravitates around our post-secondary institutions; early-stage seed capital for anything outside of primary (main) industrial base is virtually non-existent; angel capital investment depth is minimal compared to other internationally established areas; government / policy-maker understanding of entrepreneurship and SME company creation is shallow and mostly inconsequential." (5 – Edmonton)
- "The ecosystem for SME development and growth is still very fragmented throughout the province. A more cohesive and coordinated system would increase resiliency." (4 – Calgary)
- "The ecosystem is too complex and hasn't produced tangible results in the target priority areas. (4 – Edmonton)
- "Requires committed strategy on assisting higher risk tech start ups." (4 – Edmonton)
- "Lack of Angel and first round Venture Capital and Investment funds." (4 – Edmonton)
- "Lack of sophisticated investors and managerial talent are holding back SMEs." (4 – Edmonton)
- "There is a good suite of funding opportunities through provincial and federal governments." (3 – Edmonton)
- "Historically low taxes have tangibly aided smaller businesses and encouraged new businesses to open." (1 – Calgary)

In the next section we investigate the economic resilience of Alberta's various industries

Q5. What industries are of most interest to you? Choose up to five (5).

Answered: 194 Skipped: 0



Province Overall		
1.91	-18%	3.83
1 = Not Resilient		5 = Not Effective Ecosystem
Spring '16	Fall '15	Spring '16
1.85	-13%	3.73
1.80	-20%	3.78
1.80	-21%	3.72
2.02	-15%	3.67
1.92	-16%	4.00
1.93	-16%	3.74
1.93	-18%	3.60
1.75	-23%	3.95
1.71	-24%	4.02
1.42	-35%	4.06
1.89	-13%	4.00
2.00	-18%	3.55
2.10	0 %	3.97
1.96	-11%	3.86
2.04	-15%	3.62
1.88	-20%	4.16
1.95	-15%	4.14
2.18	-5%	3.73
2.60	+24%	3.80

Q5. What industries are of most interest to you? - continued

We are assuming that industry(s) of “interest” and industry familiarity are related thus providing insight into questions about resilience for each industry.

Strongest representation in the survey was from Environment (42%) and Energy (41%), Engineering (34%), Manufacturing and Management (both 32%). Weakest representation was from Legal (3%), Human Resources (6%), and Transportation (11%).

Observations re Economic Resilience

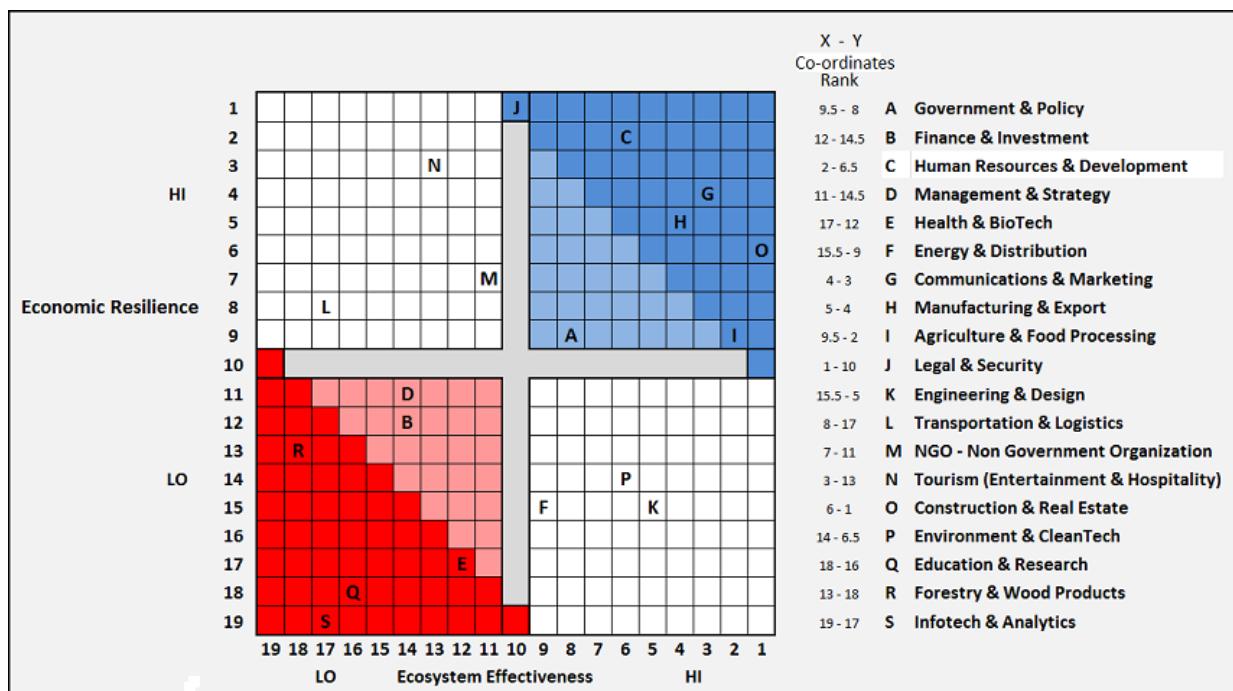
Recalling that the Provincial index of economic resilience was 1.91 (1 = Not Very Resilient), the top 5 economically resilient industries are: Legal (2.60), Human Resources (2.18), Tourism (Entertainment & Hospitality 2.10), Communications (2.04) and Manufacturing (2.02). The least resilient are Infotech (1.42), Research (Education 1.71), BioTech (Health 1.75), Engineering and Energy (both 1.80).

Observations re Ecosystem:

Recalling that the Provincial index of the Ecosystem’s effectiveness was 3.81 (5 = Not Very Effective), the 5 industries viewing the Ecosystem as **most effective** are: Construction (3.55), Agriculture (3.60), Communications (3.62), Manufacturing (3.67) and Engineering (3.72). The 5 industries viewing the Ecosystem as **least effective** are: Forestry (4.16), Transportation (4.14), InfoTech (4.06), Research (Education 4.02) and Finance and Management (both 4.00).

Observations re Economic Resilience and Ecosystem Effectiveness

The following chart plots each industry's ranking of the Economic Ecosystem (X) and Economic Resilience (Y). The objective is to identify those industries most vulnerable.



Several industries would appear to be the most vulnerable, ranked low in Resiliency with a weak Ecosystem, namely: Infotech (Analytics), Research (Education), BioTech (Health), and Forestry (Wood Products). Least vulnerable are: Legal, Human Resources, Communications, Manufacturing, and Agriculture.

Q5. What industries are of most interest to you? - continued

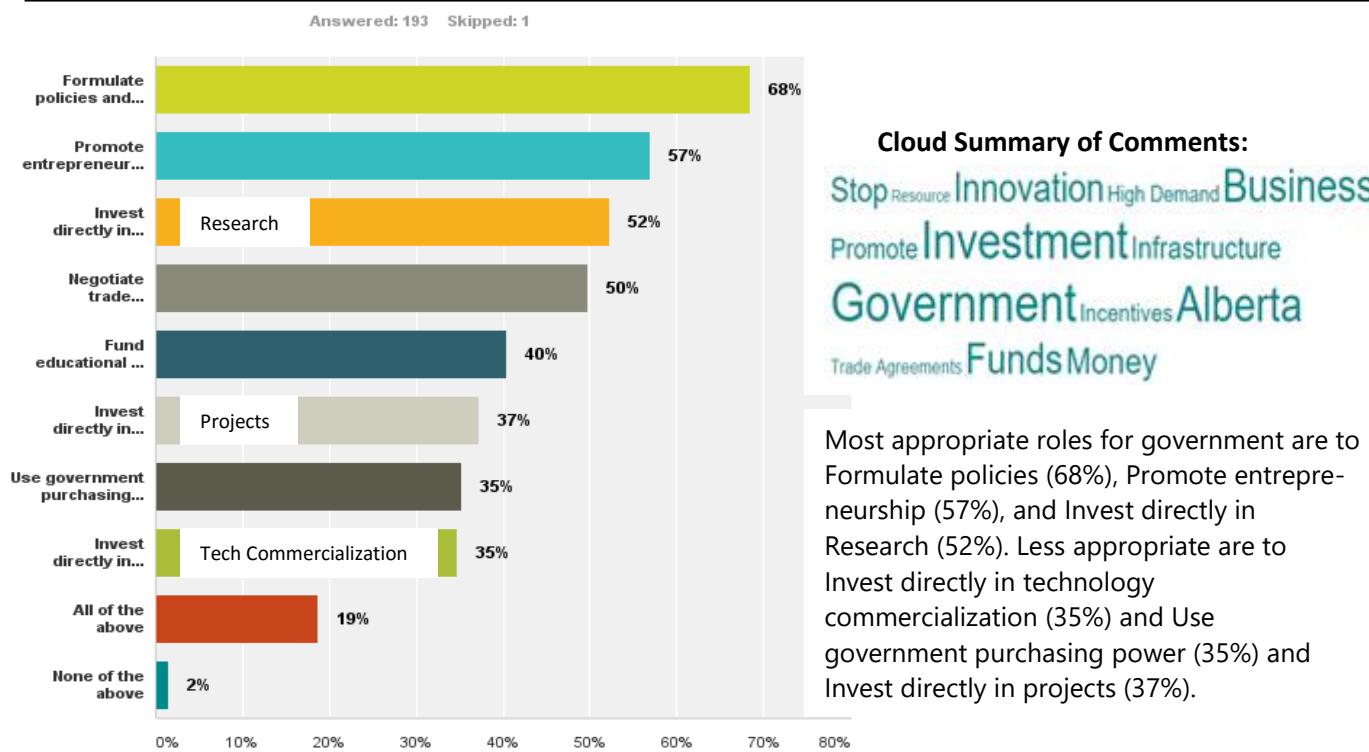
We are assuming that industry(s) of “interest” and industry familiarity are related thus allowing answers to questions about resilience to be aligned with each industry.

Seasonal changes = Fall 2015 to Spring 2016:

Respondents decreased for two industries: Finance (13%) and Human Resources (5%) and increased for Manufacturing (26%) and Tourism (5%). Resilience increased 24% for Legal with no change for Tourism (0%). Otherwise, resilience decreased for all other industries, most for: InfoTech (35%), Research (Education 24%), Health (BioTech 23%), Engineering (21%), Energy and Forestry (both 20%). Caution, seasonal factors may affect Some industries differently than others.

Next we investigate the appropriate role for government in making Alberta more resilient.

Q6. What role(s) are appropriate for government to make Alberta more resilient? Choose all that apply:



Seasonal changes = Fall 2015 to Spring 2016:

Compared with the fall, Use government purchasing power increased 7%, Formulate policies and Invest in research are both up 6%.

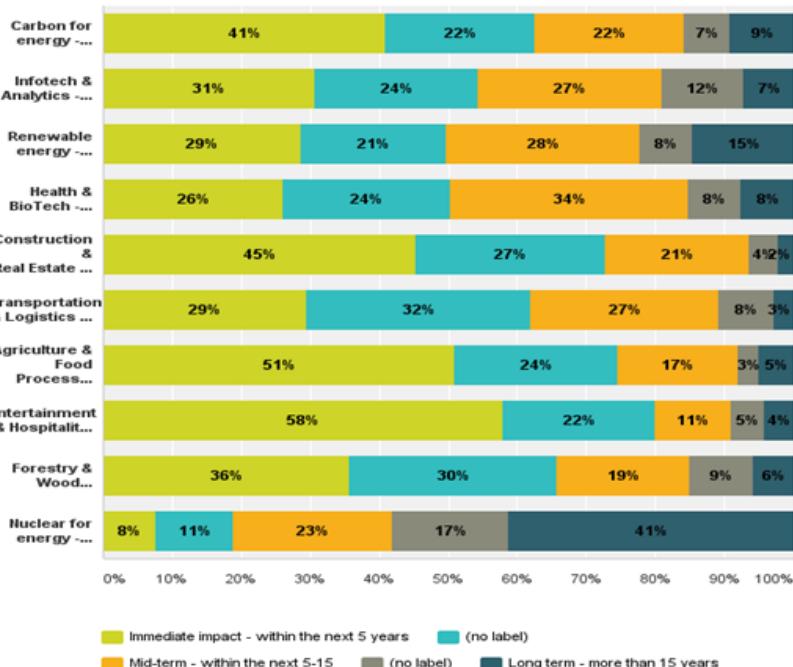
Comments: See also Appendix D. on page 17.

- “Create an environment for businesses to prosper with special attention for small business, the backbone of the Alberta economy.” (Edmonton)
- “Invest in science centres and programs that inspire young people to pursue technology and entrepreneurship careers.” (Calgary)
- “Get our oil to tidewater....new innovation will come with success.” (Edmonton)
- “Universities, Colleges, Trades & Private Sector need to develop commercialization – NOT Government.” (Other)
- “Definitely NOT attracting companies. Gov’t should encourage companies to buy Alberta products.” (Edmonton)
- “Angel Side car fund \$100M to create new jobs.” (Calgary)
- “While respecting trade agreements, government has to be more open to adopting technology developed in Alberta.” (Edmonton)
- “An investment environment must exist but direct government investment picking winners and losers is not positive.” (Other)
- “Transitioning technology/ processes developed in hospitals and universities to business start ups.” (Edmonton)
- “Compel Alberta Treasury Branch to make loans to small business.” (Edmonton)
- “Invest in world class cities that can draw talented entrepreneurs and creative class labour.” (Edmonton)
- “Offer tax credit to Alberta investors like BC & QC because if they make a return on their investment – the government will earn tax dollars back.” (Calgary)
- “Find out what is really wrong, promote and facilitate the solution leading the strategy.” (Edmonton)

Next, what industry sectors have the most potential to create significant wealth in Alberta?

Q7. Please choose the 5 industry sectors that have the MOST POTENTIAL to create significant wealth in Alberta and rate them in terms of when that wealth may be expected.

Answered: 192 Skipped: 2



Observations

Industries with the most potential to create significant wealth are:

TOP THREE

Immediate: Tourism (58%), Agriculture (51%), and Construction (45%)

Mid-term: Biotech (Health 34%), Renewable energy (28%), Transportation and InfoTech (both 27%).

Long term: Nuclear energy (41%) – including advanced manufacturing and Renewable Energy (15%).

Comments – See Appendix E. on page 20 for extensive comments regarding each industry's potential for wealth creation with immediate, mid- and long term.

Appendix A. Comments – actual quotes

Q1. On a scale from 1 = Not Very Resilient to 5 = Very Resilient, please rate how you view the diversity of Alberta's economy.

Edmonton 40 years of PC gov't and oil domination failed to diversify industry or markets.

Other AB has other major economic sectors other than oil and gas: forestry, agriculture, manufacturing, tourism, IT, etc.

Edmonton Agriculture potential is under explored.

Other Alberta has a roller coaster petroleum dominated economy.

Calgary Alberta has a unique opportunity to diversify its economy by developing other industries other than resource based. E.g. Transportation, experiential tourism, manufacturing, developing market access channels and agriculture to list a few.

Edmonton Alberta is an energy resourced based economy coupled to the international petroleum industry and as such is not in control of the market price volatility. I see this as one of the single biggest problem with the resiliency of Alberta's economy.

Edmonton Alberta population enjoys good work ethic and is reasonably well educated.

Edmonton Albertans are always inventing.

Edmonton Albertan's find a way.

Calgary Alberta's economy is at the mercy of the global market price of oil. They have no control over the market and it makes or breaks business here.

Edmonton All you need to do is look around you... oil crashes, bankruptcy's go crazy and people are unemployed instantly by tens of thousands... hello.... this is obvious stuff here.

Calgary Already there is more than oil & gas in Alberta's economy.

Edmonton Although Alberta has many successful organizations outside of energy, the primary source of economic activities is still largely tied directly or indirectly with energy.

Edmonton Although we depend on oil , and agriculture, we could do more in technology.

Edmonton Although we have put too many eggs in one basket, there are other industry sectors in Alberta that contribute to the economy and a wealth of opportunities.

Calgary Any attempts by the Provincial or Federal gov't have been old school and very "traditional". Such attempts have short term benefits at best.

Edmonton As the Premier said: one commodity, one price, one market.

Other Because we depend so much on oil prices which aren't even set by us they're set by Suddan.

Edmonton Changes in oil have significant impact and create great stress and this is not the first time this has happened. Alberta has turned around and become strong again on several occasions and it will do so again.

Edmonton Continue to be oil and gas centric.

Edmonton Current economy shows lack of resiliency.

Calgary Dependence on natural resources and the energy sector is a weakness which leads to an up and down economy.

Edmonton Depends on which sector is being considered. Some sectors are relatively more resilient than others.

Edmonton Disproportionate dependence on the energy sector resources.

Edmonton Economic infrastructure is strongly aligned with oil and gas.

Calgary Even with a concerted effort...now, it will take time to move to level 3...resilient.

Calgary	Far too reliant on natural resources/commodities.
Calgary	Good base of industry.
Edmonton	Got a big shock by the drop of Oil & Gas.
Edmonton	I am getting emails now.
Calgary	I have not seen much done with value added to our main resources for several decades. Everyone seems to want to be Bill G or have oil at \$100 a barrel.
Edmonton	I work with many companies from diverse industries that are still growing; unemployment in Alberta is still not as bad as other less diverse provinces
Edmonton	If the province funds clean technology, small business which brings projects here that will bring industry to Alberta, education (both educating people how green living creates employment and funding which educates people for new jobs created by environmentalism), and gives support for all the job loss from dirty/destructive industry. that will show Alberta that if we come together as a team rather than having them all felt forgotten about. Alberta can become a motivated team that drives revenue and success so we don't all feel so lost and broken.
Edmonton	It depends on the sort of economic shock you are describing.
Edmonton	It will be some time before the "gravy train" comes back and people must learn restraint the hard way.
Edmonton	Just look at the "For Sale" or "For Lease" signs in downtown Calgary.
Edmonton	Lack of vision.
Edmonton	Many reasons really; capital (private) investment mostly gravitates around primary industry; government focus and revenues mostly come from primary sector (and the sub-tending support companies to primary sector); and when our core primary industry declines, our economy directly declines... kind of obvious really.
Edmonton	Market place is not open enough. Too much Industry control, like the CAPP, AESO, etc. The Conservatives were masters of letting industry control the economy, hence no true market exists in Alberta.
Calgary	Near total dependence on hydrocarbon-based incomes
Edmonton	No depth in either export products and services and over reliance on the US as market
Other	Note the scale says 5 is not very resilient and the introductory sentence says opposite. ? Went with the scale notation.
Edmonton	Obviously, the current state of Alberta's economy is a good indication that it's economy is not very resilient to major change in one industry.
Edmonton	Oil & Gas is very resilient. Like everything else there are periods of slowness due to commodity prices but within Oil & Gas there are many other supporting industries such as hi-tech, manufacturing and environmental. This province just needs to keep the oil producers invested in Alberta and all else will follow. Investing in anything else will and has resulted in failure and wasted tax dollars.
Calgary	Oil and gas is the dominant economic driver: including all the spinoff economic activity such as oil and gas services, retail, hospitality, real estate
Edmonton	Oil industry is a whiner but Alberta won't collapse with oil price drop.
Calgary	Oil prices and markets are affected and we lose thousands of jobs in ALL areas... that's not resilient at all.
Edmonton	Oil reliant.
Edmonton	One doesn't have to be a rocket scientist to see what dependence on oil and gas has done to the Alberta economy
Other	One industry base is never resilient

Calgary	Our "diversity" is false in that it is derivative of resource production. Especially construction and real estate, which make up the majority of our continued economic engine, are almost completely tied to resource production for continued prosperity.
Other	Over dependence on fossil fuels.
Edmonton	Recognizing the need to diversify is not new. Much money has been sent with marginal results. Better outcomes are required.
Edmonton	Regulatory resistance to innovation, market resistance to investment in non-oil and gas initiatives.
Calgary	Resilient is a confusing term for this question.
Edmonton	Resiliency has to do with both capacity and speed. If you do manage to create the former, it is lacking the latter.
Other	Short term focus - diversity programs not sustained, supported and adequately funded. As soon as the energy sector rebounds, the thrust of diversity programs wanes.
Calgary	Still too dependent on energy as seen by the huge number of unemployed energy workers unable to find employment elsewhere.
Other	Still very oil & gas dependent though perhaps slightly less than the 1980's.
Other	The change in price for one commodity brought about 10,000s of layoffs!
Edmonton	The economy is still fairly resource based; but much more diverse than in the 90's and 80's.
Edmonton	The Entrepreneurial ecosystem needs access to capital in order to diversify.
Calgary	The government is too dependent on oil and gas and has not encouraged economic diversification enough. Land use approvals have been biased toward oil, gas, other minerals, agriculture with limited interest in other land uses that could help with diversification.
Edmonton	The government's current policies do not solicit investment.
Edmonton	The PCs promised for 30 years to diversify Alberta's economy. They did some, but not nearly enough.
Edmonton	There is incredible potential in forestry technology (CLT and factory homes); urban agriculture (aquaponics, hydroponics and aeroponics) and tourism (exploring all of Alberta's diversity) that is largely being missed.
Edmonton	There is no diversification here. There is no concept of diversification on the part of the governments. It is always oil and gas that is all!
Edmonton	This is wild guess. We'll see.
Edmonton	Too dependent on resource economy.
Edmonton	Too focused on oil and gas for too many years.
Edmonton	Too many companies were/are reliant on oil & gas customers and are struggling to reposition their technology to serve other markets. Whether they would still work with these new markets and clients if oil & gas demand resurged is an open question.
Edmonton	Too many years of being dependent on O&G sector.
Calgary	Too much dependence on oil & gas and associated industry.
Edmonton	Too much dependency on the energy sector out of Calgary. It's all Alberta is known for
Edmonton	Too much reliance on oil and gas.
Edmonton	Too O&G focused and reliant on others to shape our economic health
Edmonton	Too reliant on O&G.
Edmonton	Unemployment rate; government income.
Calgary	Very dependent on oil prices.
Edmonton	Very little non OG tech; very little access to non OG capital, not very well educated investors
Other	We are more resilient than in the past, given growth in the overall economy and modest

decline in at least direct reliance on the energy sector. However, we remain at risk due to overreliance on energy as the engine of our economy.

Edmonton	We are still a resource based province where history drives our industrial mind set.
Calgary	We are still too dependent on the oil industry.
Other	We are very oil/gas centric. We need to transfer technologies developed in this sector to benefit others, plus market in those other sectors.
Calgary	We have diversified our economy compared to our historic times of low oil prices. We still have a ways to go.
Other	We have not learned from and adapted to economic cycles we know are coming.
Edmonton	We have some diversification and many self-employed individuals that help our resiliency.
Calgary	We have the potential to be very resilient but are afraid to take risks and venture into seriously developing strengths in non-resource sectors.
Other	We lack funding and bridging capabilities to enable true diversification to occur. Banks and government lending arms are not able to provide the proper support as their entire focus is on physical asset lending. This is not ever a strategy when 80% of the businesses are service based not product or asset based. New business models that do not need assets are passed over for any funding due to this narrow thinking.
Edmonton	We lack leadership, innovation and action. We react and wait for others. We are squandering our abilities. We thought we were so good and everyone needed our energy but it is an illusion. We lack leadership at the political and corporate levels. There is no vision. As a result, we are marginal players. The world would laugh at us if it actually cared. We cannot even build a pipeline. How are we to build a resilient economy?
Other	We need financing sources for early stage companies to grow jobs.
Other	We need to manufacture and bring to market more innovative products - not just install & consume foreign technologies.
Edmonton	Well, I think that we have not done enough on diversification.
Calgary	While focus is on oil and gas, agriculture and tourism are doing well.

Appendix B. Comments – actual quotes

Q2. What factor(s) are the most sensitive measure(s) of whether Alberta's economy is or is not resilient?

Calgary Range of investment activity and local investment diversified.

Calgary AB must transition to be a world leader as an ENERGY supplier/manager and not restrict itself to only O&G!

Calgary All of the above are factors and so is perception. People will act in accordance with how they feel about Alberta's economic future.

Edmonton All of the above.

Calgary All these measures speak to the issue. We do not create companies. We do not create new ideas. We do not commercialize. We are not leaders in the world.

Edmonton Alternative to fossil fuels.

Edmonton Anemic company / entrepreneurial development ecosystem.

Edmonton Correlation of provincial GDP to commodity prices, especially oil.

Calgary Cycle time to commercialize our technologies.

Edmonton Declining exports.

Edmonton Decreasing housing starts, flat or decreasing property values.

Edmonton Decreasing per capita GDP.

Edmonton Development permits, Increased use of food banks.

Calgary Economic / industry diversity.

Calgary Economic factors beyond the control of Alberta.

Calgary Every industry has low periods of growth and these should not be interpreted as lack of resiliency.

Edmonton Fast emerging markets (business segments that are capable of 200% or higher annual growth). These new growth sectors are where the attention should be not on the past metric of number of rigs online.

Calgary Flight of companies to other areas.

Edmonton Get a pipeline NOW. Enough with the "tree huggers", and saving mother earth scare scenarios. The technology development we have in Alberta is leading the World. If we don't have jobs in Alta., how are we expected to send transfer payments. Our aboriginal community cannot hold this country hostage.

Calgary I think you need to revisit your methodology...you are asking very simplistic & obvious questions.

Edmonton Instead of bankruptcy help people remortgage, people losing jobs can attend school or become cleanup crews, offer incentives for green technology, I personally have several job creation ideas if someone would listen to me and fund these projects which will get us ahead very quickly.

Edmonton Lack of stability and planning.

Calgary Lot of projects canceled.

Edmonton Manufactured shipments and all of the above.

Calgary Not a place where start-ups think of coming.

Edmonton Not enough investment in "value added" opportunities.

Edmonton Patent creation per capita.

Calgary People moving away.

Calgary	People moving out of Alberta to more diversified economies.
Calgary	Proportion of R&D expenditures in various sectors.
Edmonton	Quantity of value-added production done at Alberta companies and volume of revenue from non-traditional markets.
Calgary	Really, all of the above apply legitimately.
Other	Reduced government revenues!!!
Edmonton	Resilient is a confusing term for this question.
Other	Should really be GDP per capita,
Calgary	Spillover to spin-out firm formation.
Edmonton	Stability of organizational management systems across sectors.
Edmonton	Stagnant or decrease in number of filed patents.
Edmonton	The amount of investment money that leaves the province.
Other	The lack of value adding or technology driven jobs. Creating fat public sector jobs is economic death.
Calgary	Time frame within which employment returns.
Edmonton	Total absence of small business financing.
Edmonton	Total disregard for Ottawa's constitutional power to get our oil to tidewater.
Other	Uncertainty with Government Policy decisions.
Calgary	Wage freezes, reduced hours.
Other	Without Corporate investment all these other factors come into play.

Appendix C. Comments – actual quotes

Q3. On a scale from 5 = Not Very Effective to 1 = Very Effective, please rate how you view the effectiveness of Alberta's ecosystem for supporting SMEs.

Edmonton 80 % of the Chamber of Commerce membership is small business. However, the framework for government procurement is built for large business

Edmonton Alberta's ecosystem is primarily driven with government funding. There is a plethora of organizations that have a direct mandate promoting SME's (the former appears to be more on the receiving end) and I believe having some success. There are other organizations without a direct mandate and promoting SME's, for example, Edmonton Economic Development Corp. We still have a lot more work to increase our resiliency.

Edmonton Availability of business capital remains an issue for many small to medium sized businesses.

Calgary Entrepreneurism is warmly welcomed and larger companies are willing to do business with smaller ones providing they can service their needs competitively.

Edmonton Gov't programs support startup but do not help sustain; on the plus side, Alberta has some unique financial organizations that help SMEs.

Calgary Have accessed some of these services and there is nothing special to distinguish from other jurisdictions. Poor for invention driven tech start-ups.

Calgary Historically low taxes have tangibly aided smaller businesses and encouraged new businesses to open.

Calgary I believe that the ecosystem for SME development and growth is still very fragmented throughout the province. A more cohesive and coordinated system would increase resiliency.

Edmonton I contacted Alberta Tourism to discuss ideas and never got a call back through numerous attempts on my end; Agriculture is getting bound up in inane Provincial rules that stymie innovation and modern progress.

Edmonton Ideas are there. Action hasn't been put in place yet. or fast enough. people are scared

Edmonton Innovation ecosystem almost entirely gravitates around our post-secondary institutions; early stage seed capital for anything outside of primary (main) industrial base is virtually non-existent; angel capital investment depth is minimal compared to other internationally established areas; government / policy-maker understanding of entrepreneurship and SME company creation is shallow in mostly inconsequential

Edmonton Lack of Angel and first round Venture Capital and Investment funds.

Other Lack of clear policy direction - no alignment, integration, connection across departments - much inefficiency.

Calgary Lack of investment in non-oil and gas initiatives.

Edmonton lack of investment other than in fossil fuels.

Edmonton Lack of sophisticated investors and managerial talent are holding back SMEs.

Edmonton Likely to decline under the new government.

Calgary Need to have advantageous taxation towards SMEs.

Calgary No obvious strategy - programs are not sustained - energy rules and disadvantages other sectors that are not directly connected.

Edmonton Poor access to market, lack of true urban agglomeration economy to act as customer base.

Edmonton Requires committed strategy on assisting higher risk tech start ups.

Edmonton Resilient is a confusing term for this question-we want to move forward not think about where we were!

Edmonton	Scale is opposite again.
Edmonton	Small businesses especially seem to be impacted. Even restaurants are seeing a decrease in sales due to the economic downturn in Alberta.
Edmonton	SME in Alberta requires support from all levels of government to level the playing field in government procurement process and reducing red tape.
Edmonton	Still a ways to go on supporting emerging & established SMEs.
Edmonton	The ecosystem is too complex and hasn't produced tangible results in the target priority areas.
Edmonton	The paperwork required to get support is onerous and just is not worth the opportunity costs (for relatively small amounts of money).
Calgary	There are a lot of services available and even triage services but it seems hard for SME's to find entry points that quickly lead to addressing their specific needs.
Edmonton	There is a good suite of funding opportunities through provincial and federal governments
Edmonton	There is a lack of incentive to sustain medium sized enterprises. Small enterprises often 'sell out' to outside/foreign interests as part of their exist strategy.
Edmonton	There is absolutely no support for SMEs in Alberta, except for Natural resources.
Edmonton	There is ignorance across industry sectors about best management practices that contribute to new product development and organizational performance throughout the product life cycle.
Edmonton	There's not "critical mass" to allow those SMEs to build up and grow beyond the incubation stage.
Calgary	Too many rules and regulations.
Other	We can't depend on the eco-system because climate change may change what we have also because that is something that we should help to protect. If we did use it for industry it should be done in a sustainable way (take and give back in equal amounts).
Other	When large corporations invest, SMEs increase.
Edmonton	Your approach is not good, catering to on youth (do not have experience), called couple of times, no response.

Appendix D. Comments – actual quotes

Q6. What role(s) are appropriate for government to make Alberta more resilient?

Calgary Actively work with int'l market.

Edmonton Alberta has endless opportunity if the government funds and supports all of the above. People need to realize that moving forward will generate new jobs.

Other An investment environment must exist but direct government investment picking winners and losers is not positive.

Edmonton Attract experienced management.

Calgary Balance all strategies between physical realities and needs along with online needs and strategies.

Edmonton Build refineries

Other Change land use policies to enable more tourism development in high demand areas and to create new tourism destination areas (e.g., west of Hinton, Lakeland, Canmore, Crowsnest Pass).

Edmonton Compel Alberta Treasury Branch to make loans to small business.

Edmonton Conscious cultivation of an innovation ecosystem including attracting talented individuals.

Edmonton Create an environment for businesses to prosper with special attention for small business, the backbone of the Alberta economy.

Edmonton Create and promote internationally an 'Alberta Brand'.

Edmonton Create incubators/test-beds with enabling infrastructure on which SMEs can innovate.

Edmonton Cut corporate tax rates, and taxes on investment income. Make the carbon tax genuinely revenue neutral, review and cut back on regulations that create disincentives in business startups. Do not try to pick winners with taxpayer money.

Edmonton Definitely NOT attracting companies. Gov't should encourage companies to buy Alberta products.

Other Direct government investment and other forms of support in private sector development should be conditional upon the business achieving pre-determined metrics i.e. FTE creation, taxes payable, etc.

Calgary Diversify. And use less \$\$ on academia, and more on actual actionable projects.

Calgary Don't fall (further) into the trap of government picking winners and losers. Government is terrible at this and contributes to the misallocation of capital and other resources.

Edmonton Enable all renewable energy producers easier access to feed electricity into the grid.

Edmonton Provide incentives for small, renewable energy producers to invest.

Edmonton Find out what is really wrong, promote and facilitate the solution by leading the strategy.

Edmonton For each industry sector, the roles of the public, private and non-profit sector should be aligned and work toward a common aim. Government should be careful not to overstep its bounds (e.g. compete with the private sector).

Calgary Fund education and training for professionals, e.g. small business owners and contractors are not currently eligible for the AB Job Grant (they are in BC and I think this is greatly helping businesses in that province).

Edmonton Funding Cooperative development.

Calgary Get funding for small business. I.e., re-purpose ATB by financing intangibles, CCEMC, Angel Side car fund \$100M to create new jobs.

Edmonton Get our oil to tidewater....new innovation will come with success.

Edmonton Get out of the way.

Other	Good, clear aligned policy direction, public good research and innovation, incent and stimulate economy through policy, not government programs - let business create jobs and innovate as a result (more efficient than government; reduced size of government).
Edmonton	Government has a role to play, but it must be unobtrusive and enabling by nature. They must create an environment in which companies can grow and that is it.
Edmonton	Government should be involved in supporting research at the universities. Commercial research should be privately funded.
Other	Government should not directly invest in any technology or industry. They only need to support R+D and education and make the environment operating and investing unobstructed and low cost.
Other	Gov'ts role is to regulate, and tax (to offset social costs). Proven fact, no gov't can predict which area of investment will pay back biggest returns. Gov't role to protect the assets of the society, our environment, health, property, etc. Just regulate the economy and industry, and make them follow the regulations. Stop subsidizing anything, directly or indirectly.
Edmonton	Health. Education. Transportation Infrastructure.
Edmonton	I won't say the government is doing all of the above but it appears to me they are. My question back to you. Where's the success?
Edmonton	I'm a bit mixed. I think government should creating supporting policies and incentives, to allow entrepreneurs to use their creativity.
Calgary	Improve capability and cost effectiveness of Alberta industries. Provide program support to give young people a chance to get work place experience, force the energy industry to support better training and support of the personnel in the energy industry so they do not have to raid other industry sectors to get the people they need when there is high demand again for employees at the expense of destroying the competitiveness and capability in those "other" sectors.
Calgary	Invest / support new technology commercialization.
Other	Invest directly in RESEARCH period!
Calgary	Invest in science centres and programs that inspire young people to pursue technology and entrepreneurship careers.
Edmonton	Invest in world class cities that can draw talented entrepreneurs and creative class labour. The modern economy outside of resource hinterlands like Alberta is driven by young, creative entrepreneurs. They want to live in cities with amenities, high density, vibrant culture and arts scenes, low environmental footprint, great public transit, and space for startups (small commercial retail units). Alberta's big cities lack all of those things compared to the competition.
Edmonton	Investment in specific infrastructure (tech parks, logistics).
Calgary	Maintain taxation that encourages business.
Edmonton	Make low cost or no cost training available for key industries and technologies so people interested in participating can do so as entrepreneurs based on a minimum of time and one try investment. The payback to government will come as a result of increased economic growth in a widely diversified economy that is less susceptible to the effects of economic downturns.
Calgary	Offer tax credit to Alberta Investors like BC & QC because if they make a return on their investment - the government will earn tax dollars back.
Edmonton	Please don't spend money to bring US corporations here. It's been done before and they all leave as soon as the money is gone. A very expensive way to get a few building built. Plus, provide funds so small s SMEs can hire staff ... \$7.50/hr. subsidies don't work if you

need a BSc to grow your company.

Edmonton Promote import replacement to develop Alberta companies.

Other Promote language, communication skills.

Edmonton Provide small home owner incentives for solar PV.

Edmonton Stop spending on tech based innovation as this does nothing for the majority of the real economy. Lend money or guarantee loans to non tech companies.

Calgary STOP TPP. Get Fair Trade Agreements NOT Free Trade Agreements. Stop/get out of NAFTA.

Edmonton Stronger negotiations with other provinces and federal government.

Edmonton Transitioning technology/processes developed in hospitals and universities to business start ups.

Edmonton Undertake comprehensive human and resource inventory.

Other Universities, Colleges, Trades & Private Sector need to develop commercialization - NOT Government.

Edmonton While respecting trade agreements, government has to be more open to adopting technology developed in Alberta.

Edmonton With some qualification but need transformation in Alberta.

Appendix E. Comments – actual quotes

Q7. Please choose the 5 industry sectors that have the MOST POTENTIAL to create significant wealth in Alberta and rate them in terms of when that wealth may be expected.

Carbon for energy - include oil, coal, gas - their extraction and power, distribution and value-added manufacturing

Edmonton	Immediate	Already have major infrastructure. Promote pipelines to coasts and value added manufacturing.
Calgary	Immediate	Already in place reduce regulations
Edmonton	Immediate	Already one of the most important.
Edmonton	Immediate	Carbon as a "cash" commodity - which is how the Province sees it - is not a sustainable view over the long term, but it provides short term opportunities.
Edmonton	Immediate	Carbon energy could flourish with carbon capture technology and vast opportunity for value added production.
Edmonton	Immediate	Do you mean the continued use of fossil fuels for energy? Given the embedded infrastructure and knowhow, a rebound in energy prices would be the fastest way to create wealth in the short-term
Edmonton	Immediate	Get on with it. We have endless supply.
Edmonton	Immediate	Increase processing in Alberta.
Edmonton	Immediate	Longer term the industry will be constrained by carbon taxes, emissions regulations and high local production costs.
Calgary	Immediate	Low hanging fruit
Other	Immediate	Market access - obviously have the capacity and infrastructure - leading jurisdiction.
Edmonton	Immediate	Need correct policies.
Edmonton	Immediate	Not sure if this category includes natural gas...if yes, then there is significant potential for this Industry.
Edmonton	Immediate	Once oil prices are back up, this sector will be a strong contributor again!
Edmonton	Immediate	Our technologies are developing in concert with our success.
Edmonton		There is a strong ground level movement to develop better testing methods needed by oil and gas to reduce costs and waste going on in the province.
		This has started with the drop in oil prices. It is growing, but does need support.
Edmonton	Immediate	This is a high-risk commodity area where Alberta has no control over prices.
Edmonton	Immediate	Why are we getting rid of the cleanest coal energy for electricity....going green is going to increase our rates by at least 30-35 percent. Who can afford this?
Other	Immediate	World expert; poor government and under informed public wasting time and resourced repeating natural on fixing climate cycle.
Calgary		Yes.
Edmonton	Long-term	We should not be in value add manufacturing for energy.
Edmonton	Mid-term	Back to business as usual.
Edmonton	Mid-term	There will be a time when the primary function of hydrocarbon will be plastics, not energy.
Calgary	Mid-term	This is our traditional base of strength and will recover and much effort will

		get focused here.
Calgary	Mid-term	We need to refine and create products for market.
Edmonton	Mid-term	We tried that - but perhaps some local refining capacity.
Calgary		Alberta really needs to get on top of low carbon delivery and carbon removal. Can't keep dumping the stuff into the air and expect to be credible in marketing our product.
Calgary		Already established - strategy / infrastructure to develop alternatives.
Edmonton		Carbon economy has to rebound before it creates new wealth.
Calgary		Expensive and risky to commercialize but this is our competitive advantage and largest resource. We just need to be better at optimizing what we have and funding new innovations with a higher risk tolerance.
Edmonton		IEA forecast fossil fuel use strong for next 35 years.
Calgary		Increase efficiency reduce GG emission.
Other		Natural gas is a clean energy, but we have no way getting it to markets. Why do we not have an oil refinery in Alberta?
Calgary		Significant opportunity. Global need. Already have customers to prove up. Issue is that our government and corporates do not participate other than lip service.
Calgary		Too focused on this for the past 60 years.
Edmonton		Will decline.
Other		World use of C is decreasing especially if oil industry requires \$90 a barrel.

Infotech & Analytics - include machine learning, robotics, virtual reality

Edmonton	Immediate	Alberta has a major lead in the research in these areas (machine learning, video games), more support for grad students to take their work out of the lab and into the market is needed. These companies can and have competed internationally and created spin offs from staff leaving the companies (the real Silicon Valley story).
Calgary	Immediate	Alberta has significant capability in these areas that has mostly been directed at the Oil market. By expanding this beyond that industry significant growth is possible.
Other	Immediate	Alberta is data rich and has strengths in this area across the universities and innovation entities.
Edmonton	Immediate	But only if investment capital is made available to small business.
Calgary	Immediate	Can be done now.
Other	Immediate	Create wealth yes, but for who? Capital is already too concentrated.
Calgary	Immediate	It would be great for Alberta to expand in the tech area since it's growing so quickly.
Edmonton	Immediate	NAIT & SAIT very important.
Calgary	Immediate	Need to be able to attract the talent and investment - what makes us better than others - do not know what the USP is?
Edmonton	Immediate	These innovations create efficiencies which businesses are looking at.
Calgary	Immediate	We have a highly educated young population, there is no reason, other than VC funding that Alberta could be Canada's Silicon Valley.
Edmonton	Long-term	Alberta does not have substantial competitive advantage in this field.

Edmonton	Long-term	Invite google and facebook to build server farms up north.
Edmonton	Mid-term	As a subset of IoT. The government could partner to attract private investment in LPWAN technology as a province-wide enabler to support innovation in all of the industries you list below.
Other	Mid-term	lots of competition hi entry cost 5 yrs. is very optimistic.
Edmonton		Alberta has excellent skills, but lacks a path to market.
Edmonton		Alberta is not even on the map in terms of being able to compete with global competition.
Edmonton		Highly competitive space - hard to see Alberta's comparative advantage.
Calgary		Immediate impact - within the next 5 years.
Calgary		Limited scale in Province but can be adjacent to existing industries. Easy to establish given cost structure but still has challenges.
Calgary		Maybe - not enough qualified people, not much capital.
Edmonton		This will be additive to all activities.
Calgary		We have more engineers per capita than most provinces.
Edmonton		We will continue to evolve or purchase internationally more competitively than growing our own.
Calgary		Why here?

Renewable energy - include wind, solar, biofuels, hydro, geothermal, etc.

Other	Immediate	As long as its development is diversified and not controlled by industry insiders that already have a monopoly.
Edmonton	Immediate	Geothermal because AB has much drilling expertise.
Edmonton	Immediate	Huge job creation potential in local PV industries.
Edmonton	Immediate	Learning to design, commission, monitor and maintain smaller scale projects could involve fairly short term, low cost training sponsored by public institutions to increase knowledge and participation in these sectors. This could kick start entrepreneurial activity that would be of tremendous environmental and economic benefit to our province.
Edmonton	Immediate	Low value compared with O & G.
Edmonton	Immediate	Renewable energies need support from all sources.
Calgary	Immediate	Solar for homes that is affordable.
Calgary	Immediate	There are no incentives today to encourage small innovative start-ups in this space to move to Alberta. We need a government who is able to create a vision that grips our imagination on how we can re-write the image of the Province in the energy world.
Calgary	Immediate	There is a will from oil companies to support this.
Calgary	Immediate	There should be an action plan to take \$\$ from O&G and put it into sustainable energy forms, so Alberta can remain an energy leader, even when we aren't as reliant on oil.
Edmonton	Long term	Alberta does not have substantial competitive advantage in this field.
Edmonton	Long term	Clean energy has come of age, we need to develop our wind corridors.
Calgary	Long term	No real potential. China has this manufacturing.
Edmonton	Long term	Requires massive investment and the technology has not proven.
Calgary	Mid-term	Add nuclear to the mix.

Other	Mid-term	Biofuels increase the price of food and are a junk fuel.
Calgary	Mid-term	Diversification aside, Alberta's competitive advantage is and will continue to be around Energy. Leveraging this expertise towards renewable energy will be a huge driver of economic development.
Other	Mid-term	Good for local needs only.
Other	Mid-term	good idea but not practical to meet energy needs; energy consumers decide not politicians with lofty dreams.
Edmonton	Mid-term	reduce C emissions from Coal with better technology for burning coal and reduce C emission in oil extraction and transport.
Edmonton	Mid-term	This is a critical sector for our future.
Edmonton	Mid-term	Additive to economy - creates jobs but not wealth - need to sell to larger market.
Calgary		Again we have the project, construction and infrastructure know how to make large Long term.
Calgary		Geothermal.
Calgary		Geothermal is a special opportunity - our expertise.
Calgary		Incentives rather than direct investment needed.
Other		Must not be directly subsidized because they are not sustainable if required.
Edmonton		Need government support.
Other		Requires government subsidies.
Calgary		These alternative energy sources displace wealth, no country to date has been able to create wealth with them.
Edmonton		These technologies will not be profitable in the near future.
Calgary		This has huge potential if the regulatory and investment environment is right.
Calgary		This includes green tech working with industry. carbon credits etc.
Edmonton		This is needed. Not a source of wealth unless we export it.
Calgary		This is where the "puck is going." We have the capabilities but need leadership. This is adjacent to our energy industry and should be a focus of development.
Edmonton		Too late - this train has long ago left the station.
Edmonton		Very expensive and I'm not convinced consumers are willing to pay the price.

Health & BioTech - include health care services, bio-technologies, pharmaceuticals

Edmonton	Immediate	Advance in medical/bio tech are daily! There are so many opportunities here -- an initiative called life sustaining and extension could spawn all manner of industry offshoots.
Other	Immediate	Digitize all health records, make them available for studies and research, and we would become an invaluable high demand information resource
Calgary	Immediate	Great strides in Alberta - - need to streamline ability to get to market. Ability to affect lives.
Edmonton	Immediate	Health and biotech really cover all time frames.
Edmonton	Immediate	Need proper policies.
Calgary	Immediate	Somewhat established needs provincial strategy and support to establish COE.
Edmonton	Long term	Alberta does not have substantial competitive advantage in this field.
Edmonton	Mid-term	But remember, all these companies will be bought and moved within 5 to 10

		years of having a product (there are numerous examples).
Edmonton	Mid-term	Extremely high potential for Edmonton.
Edmonton	Mid-term	Implementation of innovation in health care is typically a lengthy process.
Calgary	Mid-term	We have enough educated professionals in this space to create an innovation hub.
Edmonton		Already have huge research infrastructure. Must promote close collaboration with AHS, universities and local purchasing.
Calgary		Are we well positioned / resourced?
Edmonton		Commercialize the research done at the university level
Calgary		Current policies need to be expanded and accelerated to bring the innovation from some great minds and technology in our province.
Edmonton		Growth industry period. More investment required.
Edmonton		Has possibilities if critical mass created.
Calgary		Health & BioTech are two areas where future growth will be seen. Alberta needs to create the infrastructure to attract and keep companies operating in this sector.
Calgary		Limited capability.
Edmonton		Long regulatory timeframes delays Immediate.
Calgary		We need to make health care more responsive and efficient.
Calgary		Mid-term.
Calgary		Needs investment and gov't support to build on established base and attract head offices.
Edmonton		Saves on healthcare.
Edmonton		This is a very international competitive arena.
Other		Too much of our health dollars are paid to so called officials.
Other		Very competitive and high entry cost; we should be experts in application not huge sums on research.
Other		We don't have the infrastructure and advantage here yet.

Construction & Real Estate - include engineering & design, residential and commercial construction

Edmonton	Immediate	Already one of the most important.
Other	Immediate	Build infrastructure; create wealth.
Edmonton	Immediate	Continued strong housing prices or growth in demand for housing can create wealth in the short-term.
Edmonton	Immediate	Edmonton has a strong position and local firms are very active internationally. Very good near term potential.
Calgary	Immediate	I'd like to see gov't support for the partial costs of Alberta companies proposing on projects around the world.
Edmonton	Immediate	If this sector is promoted it will create Immediate wealth.
Edmonton	Immediate	Improve infrastructure (where necessary) while costs low.
Edmonton	Immediate	Need proper policies.
Edmonton	Immediate	Net-zero expertise.
Edmonton	Immediate	Only if exported beyond Alberta.
Edmonton	Immediate	Stop urban sprawl.
Edmonton	Immediate	We have a lot of construction expertise that we can sell to the world.
Other	Immediate	We have strengths and capacity in this area.

Edmonton	Mid-term	Again, as goes the economy so does this sector.
Edmonton	Mid-term	Not even sure what this is? Construction? Not sure we have a problem in commercializing / doing construction.
Edmonton	Mid-term	Private sector will build it if we need it.
Edmonton		Alberta does not have substantial competitive advantage in this field - rather cost un-competitive.
Calgary		As noted we have the project, construction and infrastructure know how to make large Long term.
Calgary		Could be a leader in sustainable building practices.
Calgary		Create more offset credits for industry.
Calgary		Green infrastructure.
Edmonton		Highest standards of energy efficiency.
Edmonton		Need underlying wealth creation to support construction.
Calgary		No export capability.
Edmonton		This is directly dependent on the other industries.
Edmonton		We are doing very well technically now fix the pipeline issue and we will continue to prosper.

Transportation & Logistics - include all forms of passenger and cargo transport and value-added manufacturing

Other	Immediate	Driverless natural gas tractor trailers.
Edmonton	Immediate	EIA cargo and logistics capacity, proximity to ASEAN markets.
Edmonton	Immediate	Fix this province's 1940's road network.
Edmonton	Immediate	Get the pipeline deal done...push the Libs to do what the railway did for Canadians.
Other	Immediate	Invest in rail north; get products to market.
Edmonton	Immediate	Is the biggest revenue next to oil.
Edmonton	Immediate	Need proper policies.
Calgary	Immediate	This sector is now huge in Calgary - kudos to the various governments and authorities for creating opportunities through transportation facilities.
Edmonton	Immediate	We have to rebuild the web that linked all of Alberta's communities.
Edmonton	Immediate	We now have 2 free trade zones in Alberta. Edmonton International Airport has the second largest land mass and can be exploited more. Calgary Airport just extended its runways allowing for larger passenger planes. Edmonton has two large intermodal yards with CP's finally getting set up. There are lots of opportunities here.
Edmonton	Long term	Add hyper-loop between our two main airports.
Edmonton	Mid-term	Alberta is a high cost environment therefore not the most likely choice for firms in this sector.
Edmonton	Mid-term	Port Alberta is a fantastic idea that has potential.
Edmonton		Additive to economy, wealth created elsewhere.
Edmonton		Bring in LNG as alternative to diesel
Calgary		Need to have a thriving manufacturing sector to be able to support.
Calgary		No expertise. No industry.
Calgary		This is business 101 stuff... the questions are useless unless you are testing "how stupid are people about business?" What is the outcome with shitty

		questions asked????
Edmonton		This is directly dependent on the other industries
Calgary		We are too far away from pretty much anywhere for this to be a viable option.

Agriculture & Food Processing - include value-added manufacturing

Other	Immediate	Currently very little value added ag, especially at the farm gate.
Edmonton	Immediate	Hemp for food and ligneous fiber (commercial).
Calgary	Immediate	Huge global need that is growing. Have expertise.
Edmonton	Immediate	Legalizing marijuana and becoming a major producer.
Other	Immediate	Mainstay of economy.
Edmonton	Immediate	Maybe but we are competing with the world and our dollar is not good.
Edmonton	Immediate	Need correct policies.
Edmonton	Immediate	This is an area we really need to be pushing and is going to continue to grow. At least in this area we won't have to listen to complaints about pipelines etc.
Edmonton	Immediate	Urban Agriculture and a means to revive and sustain Alberta's small towns - - think aquaponics/hydroponics/aeroponics.
Edmonton	Immediate	Value added processing of all primary and renewable resources is extremely important.
Calgary	Immediate	We have a lot of potential to be innovative in this space, just lack vc investment funding.
Calgary	Immediate	We are dependent on Ag. more SME support.
Other	Immediate	We need to negotiate with the "hungry nations" and supply what they want. Unfortunately, we don't seem to know how to negotiate - see pipeline debate which actually started in the 1950s.
Edmonton	Long term	Greenhouses and new agricultural techniques can put Alberta in direct competition with California. Let's take advantage of these technologies.
Edmonton	Mid-term	Not much promise with this government regime in place.
Calgary	Mid-term	Seems to be demands well established - subject to international trade.
Calgary		Already in place reduce regulations.
Edmonton		Development of better and out of the box solutions to agriculture needs is required. Many of the techniques used in 'smart farming' have been around a long time and/or not practical. Government support of proper agronomy (with new technologies, from Alberta, for Alberta problems, not bought from the US, is needed.
Other		Lower paying jobs; sustainability and social license challenges.
Edmonton		Make a serious effort to conserve prime farm lands.
Edmonton		Some growth but limited.
Edmonton		Unprecedented global population growth (middle class), climate change favoring AB Agriculture.
Calgary		Value add.

Entertainment & Hospitality - include tourism

Edmonton	Immediate	Alberta is a beautiful province and the people friendly. The hospitality tax on rooms could be better utilized. I don't feel Alberta Tourism provides a good
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		return on investment.
Edmonton	Immediate	As long as dollar is low.
Other	Immediate	Culturally depend on government too much for promotion.
Calgary	Immediate	Depends on cheap loonie.
Other	Immediate	Large tourism industry already.
Calgary	Immediate	Low dollar can help.
Calgary	Immediate	Low quality jobs.
Calgary	Immediate	Need to support film industry with facilities, easy permitting and other support.
Calgary	Immediate	Needs investment and marketing.
Calgary	Immediate	People are creatures of habit, even in difficult economic times people still go to mall, go out on weekends and the low Canadian dollars attracts new visitors from abroad to experience Alberta at a discounted rate. The key is getting these visitors off the beaten path and drive them into businesses/neighbourhoods/events they wouldn't normally discover. Drive these dollars into the SMB community which is the backbone of any healthy economy.
Calgary	Immediate	Promote festivals.
Edmonton	Immediate	Tax insensitive and getting the film studios working brings millions of foreign dollars spent here. I have worked on films that have spent 200 million in 3 months plus filled hotels etc. also these people spend money again.
Edmonton	Immediate	The scenery is what it is. A low dollar can attract US and foreign visitors
Other	Immediate	Tourism opportunity large.
Edmonton	Immediate	Very narrow parameters; would like expansion to encompass creative industries.
Edmonton	Immediate	We are working on a proposal that connects Edmonton to Camrose to Maskwacis to Drumheller to Red Deer to Sundre to Abraham Lake/Mount Michener to Rocky Mountain House to Wabamun and back to Edmonton. This is the effort that I was trying to engage Alberta Tourism in with abject failure. The route hits a large segment of Alberta's natural, ethnic, and historical memes.
Edmonton	Immediate	With the weaker Canadian Dollar trips to the Alberta Rockies have become more affordable for foreign tourists.
Edmonton	Long term	AB and Canada (fed) opposed to substantial Mountain developments that would spur meaningful economic impact (resorts, attractions).
Edmonton	Long term	We need to develop every part of Alberta e.g. Reynolds museum is making money all year round.
Edmonton	Mid-term	As goes the economy, so does this sector.
Edmonton	Mid-term	Need great advertising.
Calgary	Mid-term	These will do fine as long as the CDN dollar remains low.
Edmonton		Alberta's cost structure is way out of line to succeed in a major way in this area.
Edmonton		An investment here now will have long lasting benefits beyond 5 years....repeat business pursuits.
Calgary		Immediate.
Edmonton		Low dollar helps this industry.

Other	Lower paying jobs.
Edmonton	Middling but not "significant wealth".
Calgary	No scale.
Edmonton	Northern Alberta has few international tourist destinations other than the Oil sands.
Edmonton	This is directly dependent on the other industries.
Other	We have specialized in tourism from central Europe. We are unable to find staff who speak German.
Calgary	We need much more than the mountains to attract international visitors. This will always be a slowly growing sector.

Forestry & Wood By-products - include lumber, fibre and value-added manufacturing

Edmonton	Immediate	Building materials, nano-fibres.
Other	Immediate	Lots of possibilities besides selling the raw products.
Other	Immediate	Market access.
Edmonton	Immediate	My expertise is with Cross Laminated Timber (CLT), ideal product outcome for Northern Alberta's softwood -- can be sustainable with small enterprise "mills" that are "select cut" and can be developed with First Nations entities. (win/win/win).
Edmonton	Immediate	Need correct policies.
Edmonton	Immediate	Oil is down, the US economy is doing not great but ok and building that was put on hold is now moving forward.
Other	Immediate	Renewable resource with huge potential.
Other	Immediate	Sustainability challenge and new government perception of the forestry industry is a problem.
Edmonton	Immediate	US market is solid and so near term growth is doable.
Calgary	Long term	Needs development, not highly reliable long term.
Edmonton	Mid-term	Existing agreements have placed much of the control of this sector outside of Alberta.
Calgary		Cannot compete with global cost structure.
Calgary		Don't know.
Other		Forest industry is very conservative and slow to react to opportunities.
Edmonton		Most benefit has already been realized.
Edmonton		Pine beetle destruction, bad US/Canada lumber agreements mean poor future.
Edmonton		Promote value added manufacturing.
Edmonton		Secondary, not primary.
Calgary		Value add for overseas.

Nuclear for energy - include fission, fusion and value-added manufacturing e.g., photonics, advanced materials, etc.

Calgary	Immediate	Better option than wind.
Edmonton	Immediate	Not fusion and fission, but the other High Tech areas. There are numerous small companies selling these products in Alberta and they are growing. Certain worldwide industries have Alberta as their only supplier of critical

		parts.
Edmonton	Long term	Alberta does not have substantial competitive advantage in this field.
Edmonton	Long term	Huge potential.
Edmonton	Long term	I don't think this is something to be pursued. Too much capital required and no expertise.
Edmonton	Long term	Never actually nuclear is dead Fukushima.
Edmonton	Long term	No - wait for it to be a proven technology.
Edmonton	Long term	Pipe dream.
Edmonton	Long term	Scalability of the science is the challenge here.
Edmonton	Long term	The question is much too broad.
Calgary	Long term	The scope and scale of the undertakings are massive but so is the potential. Our engineering, fabrication and construction communities are well adapted to decade's long project that requires hundreds of millions in investment.
Other	Long term	Unfortunately, will not happen in Alberta.
Edmonton	Long term	We will not attract world class minds unless this province is seen to be a place to invest in.
Calgary	Mid-term	Advanced materials / chemical manufacturing.
Other	Mid-term	Public perception and environmental groups will be a challenge.
Edmonton	Mid-term	This is a critical sector for our future.
Edmonton		Forget it - a waste of resources and scarce talent.
Calgary		Fusion will happen and when it does if we are not involved then we will be relegated to the energy sidelines. This is a huge risk to the Province. We need to get educated and get invested today.
Edmonton		I'm actually sold on nuclear energy, especially portable reactor that can be assembled in hard to reach places. I'm not sure we will ever see anything nuclear based on the environmental lobby groups.
Edmonton		infinite risk, high cost, capital intensive, fuggedaboutit.
Calgary		Many of these technologies are very expensive and risky to commercialize so they take a very long time.
Edmonton		Need policy support from government.
Calgary		Needs new approach and less regulation.
Edmonton		Nuclear energy is challenged by society's negative perceptions.
Calgary		OK - since this category is a non-starter I'll use this blank to mention the vital category you missed - Education, especially advanced education. This can earn income from international students and underpin all of the other sectors. Appalling that Alberta governments have been wishy-washy in their understanding of the economic impact of education and the need to consistent long-term investment.
Edmonton		Putting nuclear and value add together is odd here. They are 2 separate ideas. It looks like you are stacking the deck for your pet project.
Calgary		This boat may have sailed as we are not an enlightened populace here ... the nuclear boogey man was rolled out anytime the subject was broached, the constant of the Luddites has been a major detriment to the Province.
Other		This is ultimate energy source; all the rest is short term.
Other		Waste of time, pipe dream.
Edmonton		Will become dominant going forward.

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