

The Investment Climate for Canada's Energy Sector



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EXECUTIVE SUMMARY

This report provides an assessment of the investment climate for Canada's electricity, gas, oil, and pipeline industries, based on an extensive survey of senior energy sector executives conducted by the Ivey Energy Policy and Management Centre at Ivey Business School towards the end of 2019. Although the 2020 COVID-19 pandemic has since disrupted national and global energy markets, the survey provides a baseline assessment that can serve as a comparison point for future surveys.

Survey responses indicated that investment conditions between the four energy industries ranged from neutral to unfavourable, as judged by industry executives. Electricity sector conditions were rated as neutral and, at the time of the survey, executives expected that investment would increase slightly over the next three years. Economic factors such as input costs and financing costs were viewed as contributing favourably to investment decisions, while provincial policies and regulations were rated as having the most negative impact on investment, especially in Ontario and British Columbia. Respondents most frequently identified reducing the regulatory burden and improving the stability and predictability of regulation as the two priorities that would most improve the investment climate. Respondents rated each economic, policy, and social factor in the United States as being more favourable than in Canada, with the greatest difference being the impact of the state/provincial policy environment – which was viewed as favourable in the United States versus unfavourable in Canada.

The investment climate for oil and gas ranked as the least favourable within the energy sector. Input conditions rated well, but the federal policy and regulatory environment was viewed as having the most unfavourable impact out of all economic, policy, and social factors. Respondents highlighted specific concerns around major project approval processes, market access, and policy uncertainty. In contrast, in the United States, the federal policy and regulatory environment was rated as the second most favourable investment factor for the oil industry. Access to financial capital and public opinion in Canada were also rated as problematic. Investment conditions for the pipeline sector were ranked as less favourable than those for electricity but more favourable than those for oil and gas.

Access to financial capital was viewed as better for pipelines than for oil and gas investment, but federal policy and regulation and public opinion were similarly ranked as the least favourable factors affecting investment decisions.

Overall investment conditions for the energy sector in Canada compared unfavourably to most other countries where executives had foreign experience, particularly the United States. Furthermore, in each sector, conditions were viewed as having deteriorated in Canada over the last three years while they had improved in the United States and elsewhere. From a global perspective, the results suggest that Canada is less competitive relative to other countries in offering an attractive environment for energy sector investment.

In summary, the results of the survey provide new insights into why investment in Canada's energy sector has declined over the last three years, despite an abundance of natural resources, while investment in the United States energy sector has steadily increased. Policymakers must weigh up multiple and sometimes conflicting objectives on economic, environmental and social dimensions when formulating energy policies and regulations. From the perspective of the industry, survey respondents identified several policy areas where reform would improve the investment climate: making regulatory approval processes more efficient so as to reduce the burden on project applicants, especially for major infrastructure projects; improving the clarity, stability, predictability and consistency of regulation and policy to reduce the risks of investment in long-lived assets; supporting the development of new pipeline infrastructure to facilitate export access of Canadian oil and gas to world energy markets; enhancing public understanding of the energy industry's role within Canada's economy; and articulating a strategic approach to energy policy that incorporates economic development, environmental, climate and social goals.

INTRODUCTION

The energy sector is massively capital intensive, with large corporations regularly allocating billions of dollars for new investment in annual capital budgets. In 2019, energy sector investment totaled \$68 billion, representing more than a quarter of investment by all industries in Canada. New investment enables energy companies to maintain their existing operations through asset renewal, to develop new projects that grow their businesses, and to innovate and develop new technologies that improve competitive and environmental outcomes. As such, the ability of companies to attract financial capital for investment is a central factor that shapes long-run performance on multiple dimensions. In Canada, the energy sector has a particular economic significance since it accounts for approximately 9 percent of GDP, making it one of the largest industries in the country. This is due to the country's endowments of oil, natural gas, uranium, and water resources for hydro power, much of which are exported to meet global energy demand.¹ The state of the investment climate for Canada's energy sector, which reflects the overall attractiveness for capital investment, is thus an important issue for corporate executives and government policymakers alike.

This report provides a new assessment of the investment climate for Canada's electricity, gas, oil, and pipeline sectors, based on an extensive survey of senior energy sector executives conducted by the Ivey Energy Policy and Management Centre at Ivey Business School towards the end of 2019. Although the 2020 COVID-19 pandemic has since disrupted national and global energy markets, the survey provides a baseline assessment that serves as a comparison point for future surveys. This first survey also provides new insights

into the economic, policy, and social factors that drive investment and employment decisions, and how investment conditions in Canada and the provinces compare to other jurisdictions that are competing for globally-mobile investment capital.

The overall picture that emerges from the survey is stark: investment conditions in Canada were viewed by executives as ranging from neutral to unfavourable, as having deteriorated in recent years, and as being uncompetitive relative to some other jurisdictions. While the causes are multi-faceted, respondents rated government policy and regulatory factors, and public opinion, as being especially challenging.

¹ World energy consumption is forecast to rise nearly 50 percent between 2018 and 2050, according to the United States Energy Information Agency. Almost all of the increase will come from non-member countries of the Organization for Economic Co-operation and Development, including China and India, who rely on imports of primary energy sources. Petroleum and

natural gas will continue to be the primary energy sources that meet most of this demand. Appendix A: The Canadian Energy Sector Statistical Review provides a brief statistical overview of the Canadian energy sector using publicly available data.

SURVEY METHODOLOGY

The objective of the survey was to develop evidence-based insights on the investment and employment conditions in Canada’s energy sector relative to other jurisdictions, and into the policy, economic, and social factors that affect corporate investment decisions. The survey was sent by email to nearly 2,000 senior executives in electricity, gas, oil, and pipeline companies in the fall of 2019. Companies and executives were identified from the Capital IQ database, through internet searches, and with the assistance of industry associations, including the Canadian Electricity Association, the Canadian Gas Association, the Canadian Association of Petroleum Producers, and the Canadian Energy Pipeline Association. The survey asked respondents for their views on several investment issues relating to the energy sectors and jurisdictions in which respondent companies were active and in which they had professional experience (See Appendix B for the survey instrument):

1. The state of investment conditions in Canada and other jurisdictions;
2. The economic, policy, and social factors impacting investment decisions;
3. Predictions of changes in company investment in the next three years.

260 executives responded (13 percent response rate), representing 169 companies. Respondents were asked to report their views for up to three sector-jurisdiction pairs in which their company was active (e.g. electricity in Ontario, pipelines in the United States). 462 sector-jurisdiction pairs were identified, of which 375 were provinces/territories within Canada, including 117 in the oil sector, 116 in the electricity sector, 98 in the gas sector, and 44 in the pipeline sector (see Table below). Just over half of the 169 companies represented in the survey were active in only one of the electricity, gas, oil, and pipeline sectors, while 84 of the companies were active in two or more sectors. 84 companies were active in the electricity sector (134 respondents), 86 in the oil sector (151 respondents), 90 in the gas sector (109 respondents), and 31 in the pipeline sector (68 respondents).

80 percent of the respondents had more than 10 years of experience in the energy sector and held C-level, Vice-president, or Board director responsibilities in

their company. Respondent professional qualifications included Engineer (33 percent), Accountant (18 percent), Investment Manager (12 percent), and Institute of Corporate Directors Designation or Chartered Director (9 percent), with many respondents (18 percent) holding more than one qualification.

Survey Responses by Jurisdiction and Industry

Jurisdiction	Electricity	Gas	Oil	Pipelines	Total
Alberta	13	59	84	25	181
British Columbia	12	23	6	8	49
Manitoba	3	1			4
New Brunswick	2	1			3
Newfoundland and Labrador	2		6		8
Nova Scotia		2	2	1	5
Ontario	72	10	3	6	91
Quebec	5	2		1	8
Saskatchewan	5		15	2	22
Territories within Canada	2		1	1	4
Canada	116	98	117	44	375
Africa	0	0	1	0	1
Asia	0	0	1	1	2
Australia/New Zealand	3	3	3	0	9
Europe	2	1	4	1	8
Middle East	0	2	3	0	5
Mexico	0	0	0	6	6
Other	0	0	1	0	1
South America	2	0	4	1	7
United States	11	5	17	15	48
Total	134	109	151	68	462

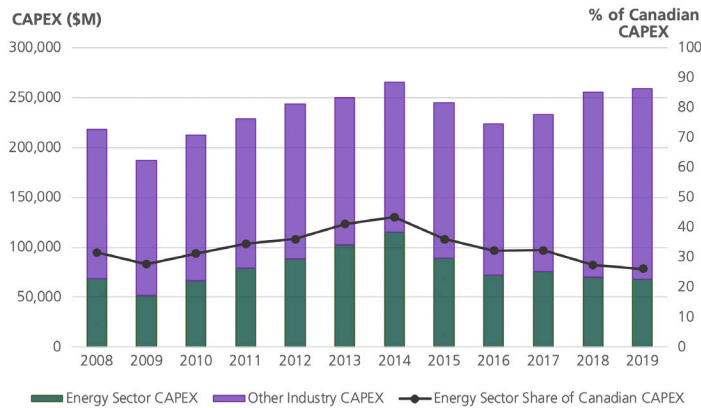
Alberta and Ontario were the provinces most frequently identified as the locations of respondent company businesses. Alberta companies were active primarily in oil and natural gas, while Ontario companies were active mainly in the electricity sector. British Columbia (natural gas) and Quebec (electricity) were the third and fourth most represented provinces (sectors) in the survey. All other provinces or territories had five or fewer responses. Prince Edward Island was the only province not represented in the survey. Appendix C contains a summary of respondent demographic characteristics.

Although the survey sample is quite large compared to other energy sector surveys, some caution is warranted in interpreting the results. First, responses reflect the personal opinions of individual executives, not corporate-level formal positions, and thus are subjective in nature. Second, it is possible that executives who responded to the survey had different perspectives than those who did not, and hence may not be representative of the industry as a whole. Third, the number of responses from some provinces and territories was limited, preventing conclusions and comparisons in these cases.

INVESTMENT TRENDS IN THE ENERGY SECTOR IN CANADA AND THE UNITED STATES

Capital investment in the energy sector—consisting of electricity, gas, oil, and pipeline industries—accounts for a major share of all capital expenditure nationally. In 2019, investment of \$68 billion in the energy sector accounted for 25 percent of total national capital expenditure, though this share has fallen steadily from 42 percent in 2014 (see Figure 1).

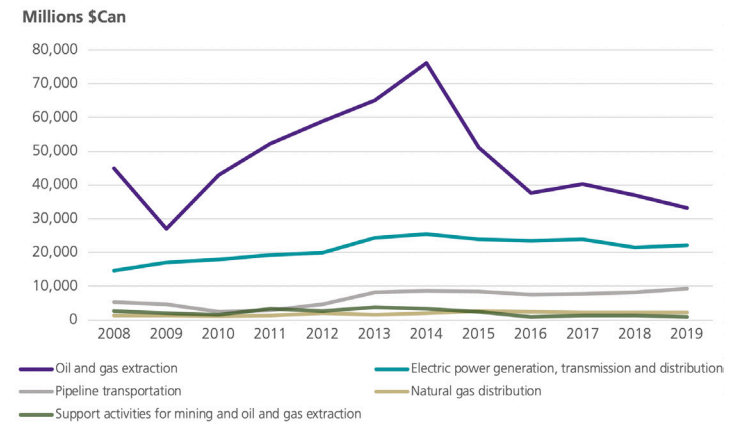
Figure 1: Energy Sector Capital Expenditure (2008-2019)



Source: Statistics Canada. Table 34-10-0036-01 Capital and repair expenditures, non-residential tangible assets by industry (x 1,000,000). The data are reported in nominal dollars.

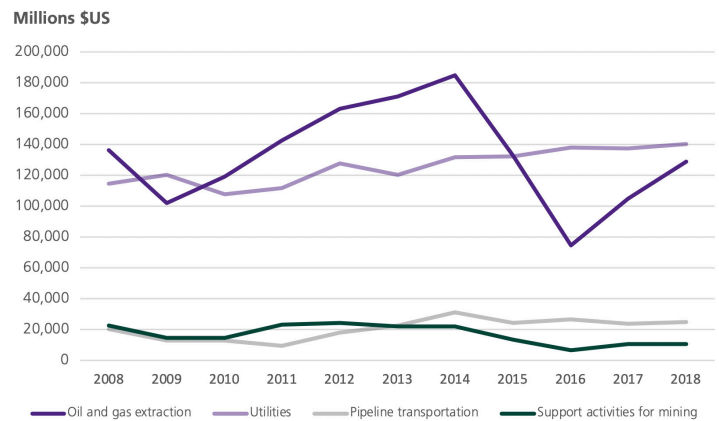
The oil and gas extraction sector and supporting activities represent the largest component of the energy sector in Canada, accounting for 49 percent of energy capital expenditure in 2019 (see Figure 2a). Investment by the oil and gas sector has fallen dramatically since 2014, more than halving in value from \$76 billion to \$33 billion in 2019, following the collapse in global oil prices during 2014-2015. By contrast, capital investment in electric power generation, transmission and distribution and in pipelines has remained relatively steady since 2014. Investment in the electricity sector was valued at \$22 billion in 2019 (33 percent of total), while investment in pipelines was \$9 billion (14 percent). For a point of comparison, investment in the United States oil and gas sector also more than halved in value from \$185 billion in 2014 to \$74 billion in 2016 (in \$US). However, by 2017, investment levels in the United States oil and gas sector began to rebound (Figure 2b), while investment in Canada generally continued to decline. Energy sector investment declined by 6 percent from 2016 to 2019 in Canada, but it increased by 25 percent from 2016 to 2018 in the United States.

Figure 2a: Capital Expenditure by Energy Industries (Canada)



Source: Statistics Canada. Table 34-10-0036-01 Capital and repair expenditures, non-residential tangible assets by industry (x 1,000,000)

Figure 2b: Capital Expenditure by Energy Industries (United States)



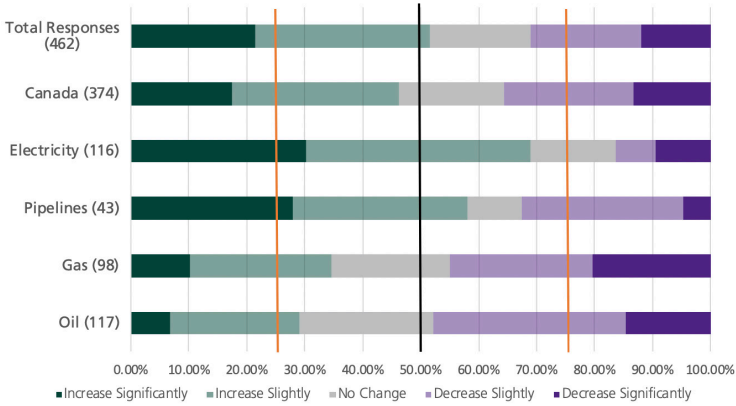
Source: Bureau of Economic Analysis, Fixed-Cost Investment in Private Nonresidential Fixed Assets. Utilities includes electric power generation, transmission, distribution, and natural gas distribution. Data not available for 2019.

The first part of the survey complements this historical data by assessing executives' perspectives on future investment by their companies. Overall, approximately half of respondents indicated that investment in the next three years would likely increase, and half anticipated no change or a decrease (Figure 3). However, investment expectations differed considerably across Canada's four energy industries. A majority of respondents expected investment would increase in Canada's electricity and pipeline industries, but would decrease in Canada's oil and natural gas industries. These expectations are largely consistent with the recent

historical trends identified by the statistical data. The next sections focus on the investment climate for each of the four sectors and provide an evaluation of explanatory factors.

Figure 3: Expected Change in Future Energy Sector Investment

Q: How is the level of investment in your company likely to change over the next three years in the sectors and jurisdictions in which your company is active?²



² The reported results for Canada in the Figures represent the aggregated results of responses for individual provinces and territories.

INVESTMENT ENVIRONMENT FOR THE ELECTRICITY SECTOR

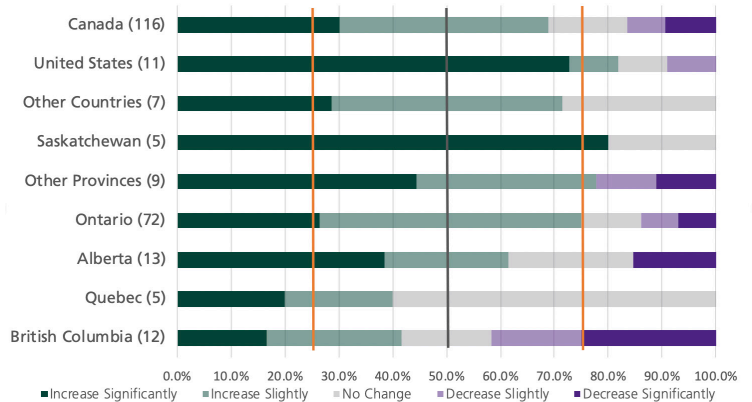
Canada is a global leader in producing non-carbon emitting electricity with over 80 percent of its generation capacity coming from hydroelectric, wind, solar, and nuclear generation facilities. Canada is the second largest producer of hydroelectricity, the sixth largest producer of nuclear electricity, and the eighth largest producer of wind electricity in the world.³ Quebec is the largest electricity-using province in Canada, accounting for roughly 35 percent of all electricity consumed in Canada. It is also the largest exporter of electricity.

Investment in the electricity sector accounts for approximately 33 percent of total energy sector capital expenditure nationally, and investment levels have averaged \$23 billion annually since 2014. A recent report by the Canadian Energy Regulator projected that from 2017 to 2040, investment in new power generation capacity (natural gas and renewables) will need to increase by 16 percent in order to meet demand and to replace retiring infrastructure such as coal capacity.⁴

The results of the survey suggest that, on average, respondent companies were poised to increase their forthcoming electricity sector investment levels. Nearly 70 percent of respondents indicated their company would increase investment slightly or significantly in Canada over the next three years (Figure 4). However, respondents were more bullish about investment in the United States: 73 percent of respondents expected their company would significantly increase investment in the United States' electricity sector. At the provincial level, the outlook was mixed. The majority of responses for Alberta, Ontario, and Saskatchewan indicated investment levels would increase in their provinces' electricity sectors over the next three years. Responses for British Columbia's and Quebec's electricity sectors suggested investment levels would remain the same or increase.

Figure 4: Predicted Change in Future Electricity Sector Investment⁵

Q: How is the level of investment by your company likely to change over the next three years?



Respondent numbers may differ across charts if some respondents chose to answer some questions but not others.

Executives' views on the overall attractiveness of investment conditions in the electricity sector were generally aligned with the expected direction of future investment. Conditions in the United States were viewed by a majority as very attractive, while the median response for Canada was neutral (see Figure 5). Within Canada, investment conditions in Alberta, Ontario, and Saskatchewan rated as mildly attractive on balance—a marked contrast to British Columbia and Saskatchewan where half of respondents rated conditions as very or mildly unattractive.

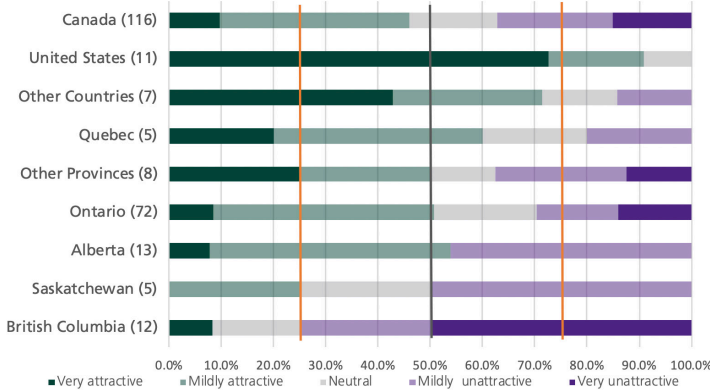
³ International Energy Agency, "Key World Energy Statistics, 2019"

⁴ See "Canada's Energy Future 2019: Energy Supply and Demand Projections to 2040," Canadian Energy Regulator, at page 38, available at <https://www.cer-rec.gc.ca/nrg/ntgrtd/ftr/2019/2019nrgftr-eng.pdf>.

⁵ There were 29 different countries or continents selected by survey respondents. As the sample size for some jurisdictions is small, for reporting and statistical purposes, we aggregated countries according to their continents with the exception of the United States, Mexico, and Canada.

Figure 5: Investment Environment for Electricity Sector by Jurisdiction

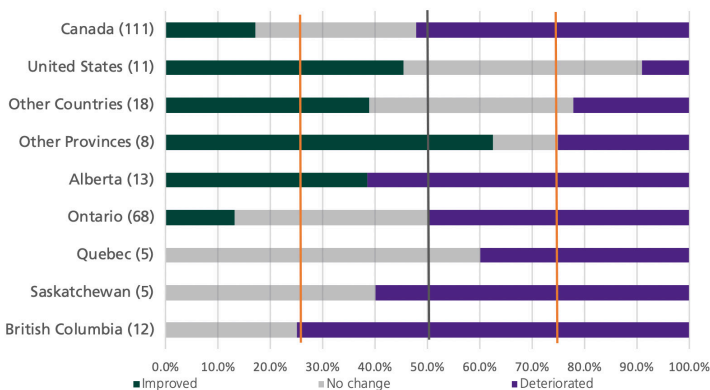
Q: How attractive are the overall investment conditions for companies like yours in the jurisdictions in which you have had the most professional experience?



Executives were also asked to assess how investment conditions had changed over the last three years. The majority of respondents said that investment conditions in Canada’s electricity sector had deteriorated over the last three years, while almost half of respondents whose companies were active in the United States reported that conditions there had improved (Figure 6). Provincially, the majority of executives responding about Alberta, British Columbia, Ontario, and Saskatchewan believed that investment conditions had deteriorated, while a majority of executives responding about Quebec believed conditions had remained the same over the last three years.

Figure 6: Change in Investment Environment for the Electricity Sector

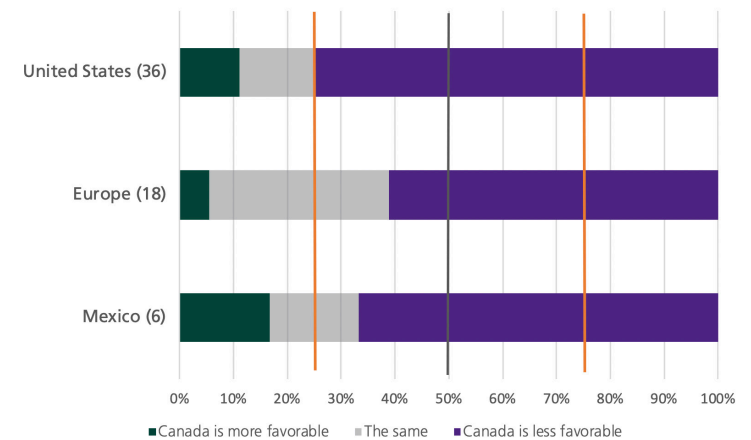
Q: How have the overall investment conditions for companies like yours changed over the last three years in the jurisdictions in which you have had the most professional experience?



When asked to directly compare the investment climate in Canada against other countries in which their company was active, a majority of respondents evaluated Canada as being less favourable for investors than the United States, Mexico, and Europe (Figure 7).

Figure 7: Investment Environment for Electricity Sector in Canada Compared to Other Countries

Q: How do overall investment conditions in Canada compare to other jurisdictions for companies like yours?



To gain an understanding of the factors that shape investment conditions in the electricity sector, the survey asked executives to rate the impact of 18 economic, policy, and social conditions on investment decisions for companies like theirs in the jurisdictions in which their companies were active and in which respondents had significant professional experience. Table 1 summarizes the responses of the 18 factors in eight categories.⁶ An overall rating, equal to the average of all factors, is also provided for each jurisdiction. Cells coloured light purple reflect unfavourable impacts, white or grey neutral, and light green favourable.

The United States had the highest rating amongst the jurisdictions identified by respondents. The top-rated United States factors were financial capital cost/availability, tax and royalty regimes and public opinion, while the lowest rated two factors were federal policy and R&D support. Canada had a neutral average rating, and each of the eight factor categories rated lower than the United States. Like its southern neighbour, Canada’s top-rated factor was financial capital cost/availability. The provincial policy environment ranked as the least attractive aspect of the investment climate on average for electricity companies within Canada, with the federal policy environment also placing low.

Within Canada, respondents rated Alberta, British Columbia, Ontario, Quebec, and Saskatchewan approximately equivalently based on the average factor scores (ranging between 2.9 and 3.1, indicating neutral conditions). Each of these provinces rated financial capital cost/availability and/or input cost/availability in the top-rated factors. The provincial policy environment rated last in Ontario and British Columbia, and second last in Quebec. Product market conditions rated last in Alberta and Quebec. Federal policy and regulation rated as the lowest factor in Saskatchewan.

Survey respondents were asked to identify one or two policy or regulatory priorities that would most improve the investment climate. Among respondents whose companies were active only in the electricity sector, the top cited priorities were reducing regulatory complexity and burdens, and improving regulatory predictability and stability.

Table 1: Impact of Economic, Policy, and Social Factors on Electricity Sector Investment

Q: What is the current impact of the factors listed below on investment decisions for companies like yours?

Factor	Canada (116)	United States (11)	Alberta (13)	British Columbia (12)	Ontario (72)	Quebec (5)	Saskatchewan (5)
Financial Capital Cost/Availability	3.7	4.6	3.0	3.9	3.9	4.0	4.2
Input Cost/Availability	3.4	3.9	3.7	3.8	3.2	3.6	3.9
Tax and Royalty Regimes	3.0	4.3	3.0	2.9	3.0	3.2	2.8
R&D Support	2.9	3.1	2.9	2.9	2.9	2.8	2.8
Public Opinion	2.9	4.3	3.3	2.9	2.9	2.8	3.4
Federal Policy & Regulation	2.7	3.3	2.6	2.7	2.8	3.1	1.5
Product Market Factors	2.7	4.0	2.5	2.5	2.8	2.5	2.8
Provincial/State Policy & Regulation	2.4	4.1	2.8	2.0	2.3	2.6	2.7
Average Score	3.0	3.9	3.0	2.9	3.0	3.1	3.0

Assigned values: Unfavourable=1, Somewhat unfavourable=2, Neutral=3, Somewhat favourable=4, Favourable=5. The results presented for Canada are the average results of the specific provinces or territories chosen by the respondents. Only jurisdictions with five or more responses included.

⁶ Provincial and Federal Policy factors include their respective government energy policy, regulatory frameworks and approval processes, and environmental standards and assessment processes. Product market factors include market price/regulated rate of energy product/service and demand conditions for energy product/service. Input cost/availability includes natural

resource availability, supplier/equipment and material costs/availability, labour costs/availability and skill sets, and land cost and availability. Other factors not reported in Table 1 include legal frameworks and policy, and quality of local infrastructure (e.g. roads, transport). The results for all 18 factors are presented in Appendix C.

INVESTMENT ENVIRONMENT FOR THE NATURAL GAS SECTOR

Canada is the world's fourth largest producer and fifth largest exporter of natural gas (all sold via pipeline to the United States).⁷ Most of Canada's natural gas (approximately 98 percent) is produced in Alberta and British Columbia, with smaller production facilities located in Saskatchewan, Ontario, New Brunswick, and Nova Scotia. United States imports of natural gas from Canada have declined significantly since 2006 as a result of shale gas resource development, leaving no alternative export market options available to Canadian natural gas producers. Canada has no liquid natural gas (LNG) terminals for exporting natural gas, though a number of LNG projects in British Columbia, New Brunswick, Nova Scotia, and Quebec have been under consideration during the last decade.

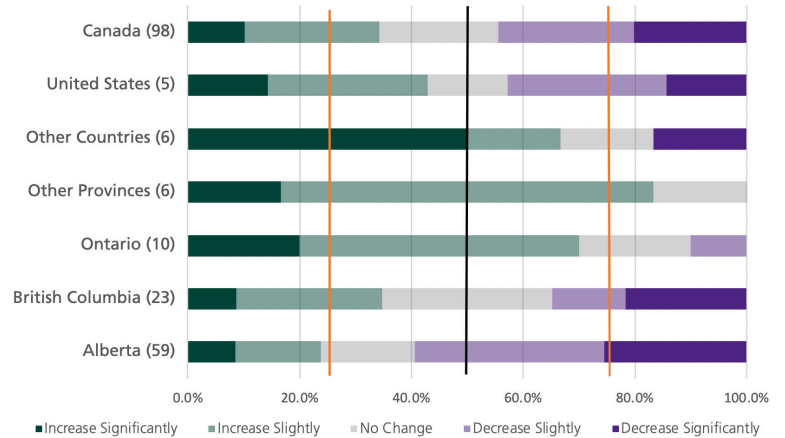
Investment in oil and natural gas extraction and supporting activities accounts for approximately 50 percent of total energy sector capital expenditure nationally, and investment levels have averaged \$48 billion annually since 2014. Natural gas distribution accounts for 3 percent of total energy sector capital expenditure, averaging \$2.3 billion since 2014. Survey respondents expected, on balance, that investment levels in Canada would marginally decrease, while they would remain about the same in the United States (see Figure 8).

Within Canada, there is significant variation between the provinces: a majority of respondents expected that investment by their company in natural gas would expand in Ontario but would decrease in Alberta, where many companies are involved in extraction and production. In British Columbia, the net balance of respondents expected future investment would remain at approximately current levels. The anticipated increase in investment in Ontario may reflect government policies on expanding access to natural gas in rural, northern Ontario, and Indigenous communities.

⁷ International Energy Agency, "Key World Energy Statistics, 2019"

Figure 8: Predicted Change in Future Natural Gas Sector Investment

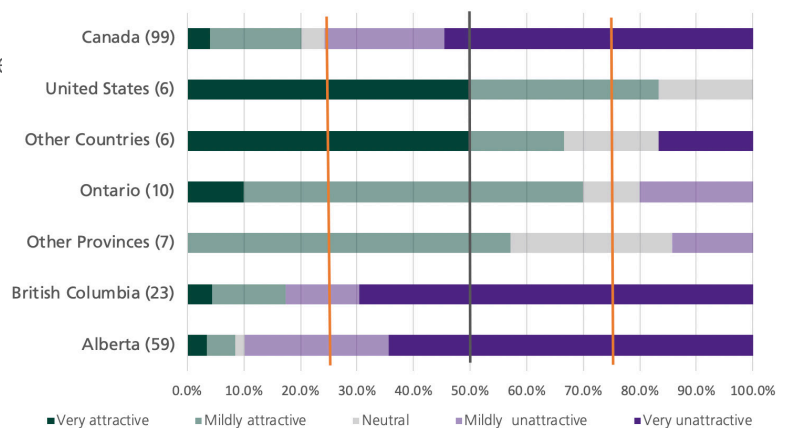
Q: How is the level of investment by your company likely to change over the next three years?



The investment environment for the Canadian gas sector was considered to be very unattractive by a majority of the survey respondents (Figure 9). By contrast, more than 80 percent of respondents judged the United States to have an attractive investment climate. Within Canada, investment conditions in Alberta and British Columbia's gas sectors were considered to be very unattractive by a majority of respondents. Ontario, however, was rated by a majority as having a mildly attractive environment for investment.

Figure 9: Investment Environment for Natural Gas Sector by Jurisdiction

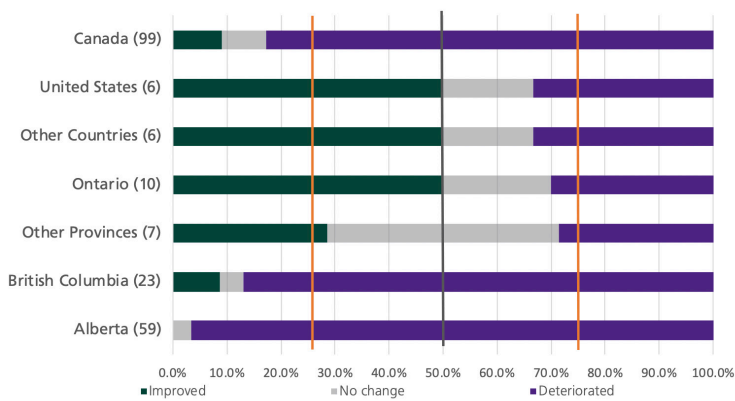
Q: How attractive are the overall investment conditions for companies like yours in the jurisdictions in which you have had the most professional experience?



When looking back over the last three years, 80 percent of executives reported that investment conditions in Canada’s gas sector had deteriorated (see Figure 10). In contrast, the majority of executives surveyed whose company was active in the United States believed conditions had improved in that country. Over 95 percent and 85 percent of respondents for Alberta and British Columbia, respectively, indicated that investment conditions had deteriorated. On the other hand, approximately 50 percent of respondents considered that conditions in Ontario’s natural gas sector had improved in the last three years.

Figure 10: Change in Investment Conditions for the Natural Gas Sector

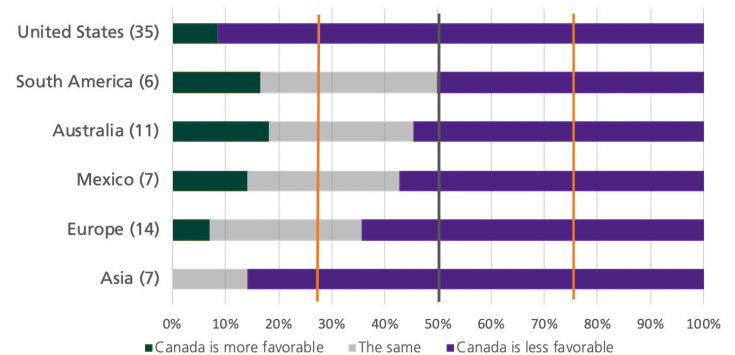
Q: How have the overall investment conditions for companies like yours changed over the last three years in the jurisdictions in which you have had the most professional experience?



When directly comparing jurisdictions, most respondents rated the investment climate for Canada’s gas sector less favorably against most other jurisdictions (Figure 11). Over 90 percent of respondents whose company was active in the United States’ gas sector considered Canada to have less favourable investment conditions than the United States. In fact, a majority of executives viewed investment conditions in Canada to be less favourable than investment conditions in Europe, Asia, Mexico, and Australia.

Figure 11: Investment Environment for Natural Gas in Canada Compared to Other Countries

Q: How do the overall investment conditions in Canada compare to other jurisdictions for companies like yours?



Canada rated considerably lower than the United States on the key factors affecting investment in natural gas (Table 2). The United States had a favourable rating for all factors while Canada had a favourable rating for only one category – input cost/availability. Provincially, Ontario had the highest average provincial rating with an overall neutral score, while Alberta and British Columbia had less favourable evaluations. Respondents considered product market factors, input cost/availability, and financial capital cost/availability as having a relative favourable impact on investment decisions in Ontario’s natural gas sector. In Alberta and British Columbia, federal policies, financial capital cost/availability, and public opinion were regarded as having a distinctly negative impact on investment decisions. In Alberta, these were partly offset by input cost/availability and tax/royalty regimes, which positively contributed to Alberta’s investment environment for natural gas.

In terms of policy reform, a majority of respondents whose companies were active in the gas sector identified improvements in regulatory approval processes and practices as being important. Respondents expressed the need for less cumbersome and more timely processes for major project approvals – which some regarded as making Canada uncompetitive against other countries – and also the need for greater clarity, stability, predictability, and consistency in regulation. Bills C-69 and C-48 were identified as

particular concerns. Many respondents noted that developing new pipeline routes to tidewater should be a priority in order to enable exports of Canada’s natural resources to world markets and to reduce reliance on the United States as the oil and gas sector’s primary customer. Another common respondent theme was the wish to foster greater public understanding of the role of the oil and gas sector in Canada, and to encourage more balanced public discourse around energy, climate, environment, and social issues.

Table 2: Impact of Economic, Policy, and Social Factors on Investment in the Natural Gas Sector

Q: What is the current impact of the factors listed below on investment decisions for companies like yours?

Factor	Canada (100)	United States (6)	Alberta (59)	British Columbia (24)	Ontario (10)
Input Cost/Availability	3.7	3.8	3.9	3.8	3.5
Tax and Royalty Regimes	2.9	4.0	3.2	2.7	2.3
R&D Support	2.9	3.6	3.0	2.8	2.8
Provincial/State Policy & Regulation	2.6	3.7	2.7	2.2	2.8
Product Market Factors	2.5	3.8	2.4	2.7	3.2
Public Opinion	2.0	3.6	1.9	2.0	2.6
Financial Capital Cost/Availability	1.9	4.0	1.7	1.6	3.4
Federal Policy & Regulation	1.6	3.7	1.4	1.6	2.2
Average Score	2.5	3.8	2.5	2.4	2.8

Assigned values: Unfavourable=1, Somewhat unfavourable=2, Neutral=3, Somewhat favourable=4, Favourable=5. The results presented for Canada are the average results of the specific provinces or territories chosen by the respondents. Only jurisdictions with five or more responses included.

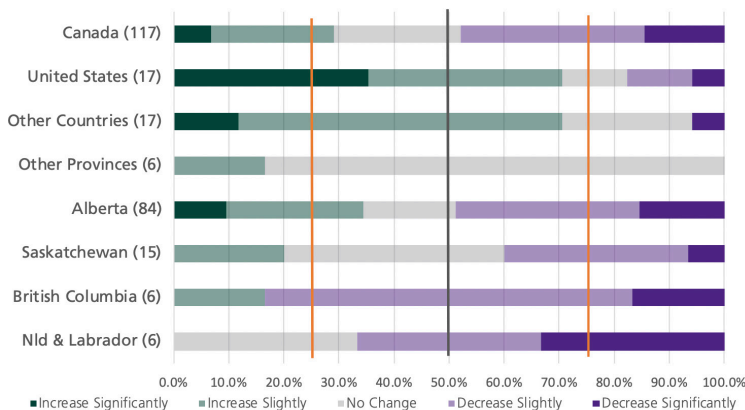
INVESTMENT ENVIRONMENT FOR THE OIL SECTOR

Canada is a major global producer and exporter of oil as a result of its significant proven oil reserves, estimated at 171 billion barrels, which are the third largest in the world (representing 10 percent of global reserves). Alberta's oil sands account for the majority of Canada's oil reserves with the remainder found in conventional, offshore, and tight oil formations.⁸ From a global trade perspective, Canada is the world's fourth largest producer and fifth largest exporter of crude oil.⁹

The results of the survey indicated that senior energy sector executives had a marginally pessimistic view of the near-term investment outlook for Canada's oil sector (Figure 12). The median respondent anticipated that investment would not change over the next three years. However, less than 30 percent of respondents whose companies were active in the oil sector in Canada anticipated that investment levels would increase in the next three years, while 48 percent predicted a decrease. Approximately half of the respondents predicted a reduction in investment in Alberta, and larger majorities expected reductions in British Columbia and Newfoundland and Labrador. In Saskatchewan, the median respondent predicted no change in investment levels in the next three years. In contrast, investment levels by respondents' companies in the United States' oil sector were expected to increase, as well as in other countries and regions identified by respondents.

Figure 12: Predicted Change in Future Oil Sector Investment

Q: How is the level of investment by your company likely to change over the next three years?

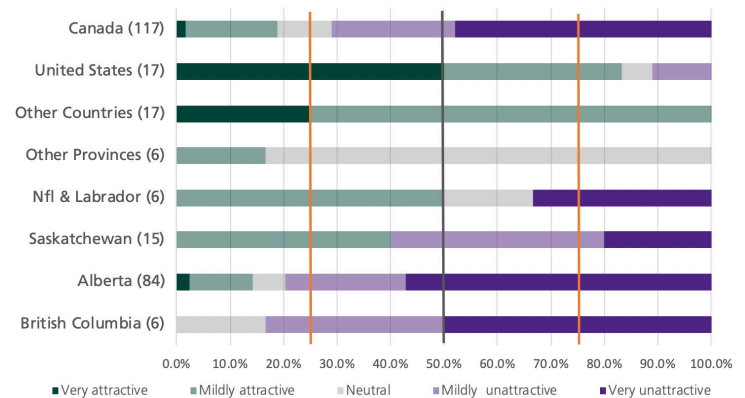


⁸ See <https://www.nrcan.gc.ca/energy/energy-sources-distribution/crude-oil/oil-resources/18085>.

Mirroring these expected investment patterns, respondents reported a negative view of the investment climate for Canada's oil industry. Over 70 percent of responding executives whose companies were active in Canada's oil sector rated the investment environment to be slightly or very unattractive (Figure 13). Provincially, large majorities of respondents viewed investment conditions in Alberta's, British Columbia's, and Saskatchewan's oil sectors to be mildly or very unattractive, though Newfoundland and Labrador's oil sector was rated more favourably. The United States was rated by a majority of respondents as having an attractive environment for oil investment, as were other countries.

Figure 13: Investment Environment for Oil Sector by Jurisdiction

Q: How attractive are the overall investment conditions for companies like yours in the jurisdictions in which you have had the most professional experience?

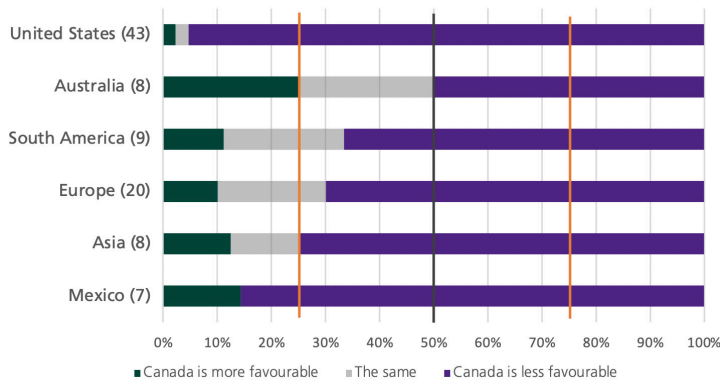


When asked to make direct country-to-country comparisons, large majorities of respondents rated Canada's investment environment as less favourable than the United States, Europe, South America, Asia, and Mexico (Figure 14).

⁹ International Energy Agency, "Key World Energy Statistics, 2019"

Figure 14: Investment Environment for the Oil Sector in Canada Compared to Other Countries

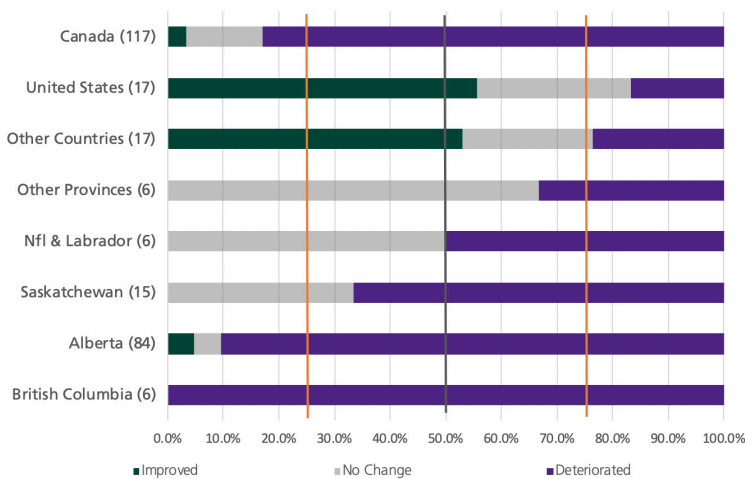
Q: How do the overall investment conditions in Canada compare to other jurisdictions for companies like yours?



In addition, 83 percent of executives surveyed believed investment conditions in Canada’s oil sector had deteriorated over the last three years (Figure 15). A majority of respondents viewed conditions in Alberta, British Columbia, and Saskatchewan as having worsened. On the other hand, investment conditions in the United States’ oil sector were perceived as having improved over the last three years, as were the conditions in other countries reported in the survey.

Figure 15: Change in Investment Conditions for the Oil Sector

Q: How have the overall investment conditions for companies like yours changed over the last three years in the jurisdictions in which you have had the most professional experience?



Why does the investment climate for Canada’s oil sector fare so poorly compared to other jurisdictions? Some insights are provided by survey respondent ratings of eight different economic, policy, and social factor categories that impact investment decisions in a jurisdiction’s oil industry (see Table 3). It is notable that each category rated as neutral or unfavourable with the exception of input cost/availability, which rated more favourably. The lowest rated factor was federal policy and regulation, followed by public opinion and financial capital cost/availability. The United States rated favourably on all factors with the exception of the cost and availability of financial capital, which was rated as neutral.

Among the four most active oil provinces, Saskatchewan and Newfoundland and Labrador had the highest average factor scores (approximately neutral). The provincial policy environment was rated as favourable in Saskatchewan, as were input conditions. British Columbia ranked last, driven by the lowest score for the provincial policy environment among all the provinces, though this still rated above the score for the federal policy environment. Alberta ranked third among the four provinces with an average factor score that placed it as neutral to unfavourable. The provincial policy environment was rated just below neutral, as were tax and royalty regimes and R&D support. Not surprisingly, input conditions were rated as favourable.

A majority of respondents at oil companies noted that improvements in regulatory approval processes for major infrastructure projects would enhance investment. In addition to making approval processes more streamlined and efficient, respondents commented on the need to improve the clarity, stability, consistency, and predictability of regulation (which were concerns about the effect of Bill C-69). More than a third of respondents stated that approval of new pipelines for the export of Canadian oil to foreign

markets would stimulate investment in upstream oil projects, in part due to upward pricing impacts. Respondents also called for more balanced public discourse about the role of the oil and gas industry in Canada, and for a strategic approach by government to achieving environmental, climate change, economic development, and social policy goals. Support was voiced for responsible environmental standards and for carbon pricing, but the stability and consistency of environmental policies were noted as concerns.

Table 3: Impact of Economic, Policy, and Social Factors on Investment in the Oil Sector

Q: What is the current impact of the factors listed below on investment decisions for companies like yours?

Factor	Canada (117)	United States (18)	Alberta (84)	British Columbia (6)	Nfl & Labrador (6)	Saskatchewan (15)
Input Cost/ Availability	3.7	4.0	3.9	3.1	3.0	4.0
R&D Support	2.9	3.7	2.9	2.5	3.0	3.2
Tax and Royalty Regimes	2.9	4.3	2.9	2.3	2.5	3.3
Product Market Factors	2.9	4.0	2.8	2.8	3.8	3.0
Provincial/State Policy & Regulation	2.8	3.9	2.8	1.7	2.3	3.6
Public Opinion	1.8	3.8	1.6	1.7	3.2	2.6
Financial Capital Cost/Availability	1.8	2.9	1.6	1.7	2.7	1.9
Federal Policy & Regulation	1.4	4.0	1.3	1.3	1.7	1.2
Average Score	2.5	3.8	2.5	2.1	2.8	2.8

Assigned values: Unfavourable=1, Somewhat unfavourable=2, Neutral=3, Somewhat favourable=4, Favourable=5. The results presented for Canada are the average results of the specific provinces or territories chosen by the respondents. Only jurisdictions with five or more responses included.

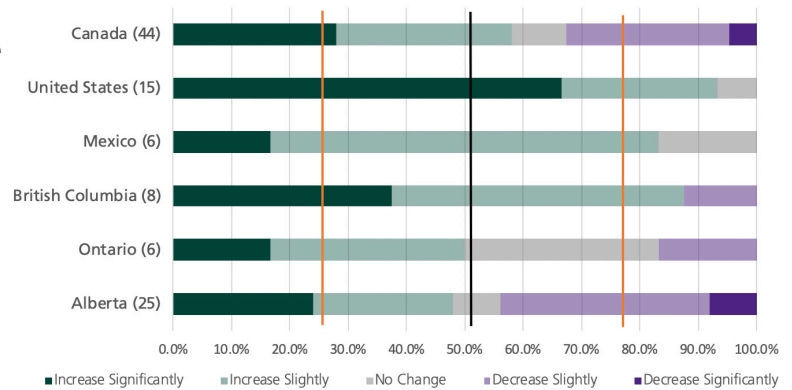
INVESTMENT ENVIRONMENT FOR THE PIPELINE SECTOR

More than 840,000 km of pipelines transport crude oil, natural gas, and liquefied natural gas from wells in Canada to collection points across Canada and beyond. Canada’s natural gas pipeline system extends from Vancouver Island to Quebec City, and its crude oil pipelines run from Vancouver to Montreal. Separate pipelines, uncoupled from the main pipeline system, exist in Newfoundland, New Brunswick, Nova Scotia, Prince Edward Island, and offshore Canada. The Canadian pipeline system is highly integrated with the pipeline system in the United States. Currently, 31 oil and 39 natural gas pipelines in operation cross the Canada-United States border.¹⁰

Investment in Canada’s pipeline sector averaged approximately \$8.2 billion per annum from 2016-2019 and increased by 3 percent annually on average during the same four-year period. As of 2019, survey respondents anticipated this investment trend would continue; the majority of executives surveyed whose companies were active in the pipeline sector expected that investment levels in British Columbia and Ontario would increase in the next three years (see Figure 16). The outlook was more mixed for investment in Alberta’s pipeline sector, with approximately equal numbers of respondents expecting increases and decreases. By comparison, large majorities of executives expected investment levels would increase in the United States and Mexico.

Figure 16: Projected Change in Investment in the Pipeline Sector

Q: How is the level of investment by your company likely to change over the next three years?



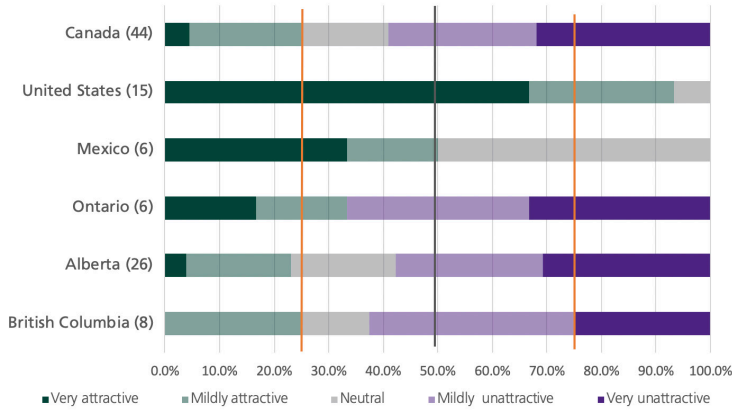
Despite the predictions of increased investment in Canada’s pipeline sector, most respondents viewed investment conditions in Canada (and in each of the three provinces) as being unfavourable (see Figure 17). In contrast, a large majority of respondents viewed the investment environment as being favourable in the United States, and approximately half of respondents viewed Mexico as having favourable conditions.

A potential explanation to reconcile executives’ negative views of the investment climate with positive investment projections is that major pipeline projects can involve multi-year construction schedules: once commenced, a major pipeline may take several years to complete, during which investment conditions can change.

¹⁰ Natural Resources Canada, at <https://www.nrcan.gc.ca/our-natural-resources/energy-sources-distribution/clean-fossil-fuels/pipelines/faqs-federally-regulated-petroleum-pipelines-canada/5893#h-1-4>.

Figure 17: Investment Environment for the Pipeline Sector by Jurisdiction

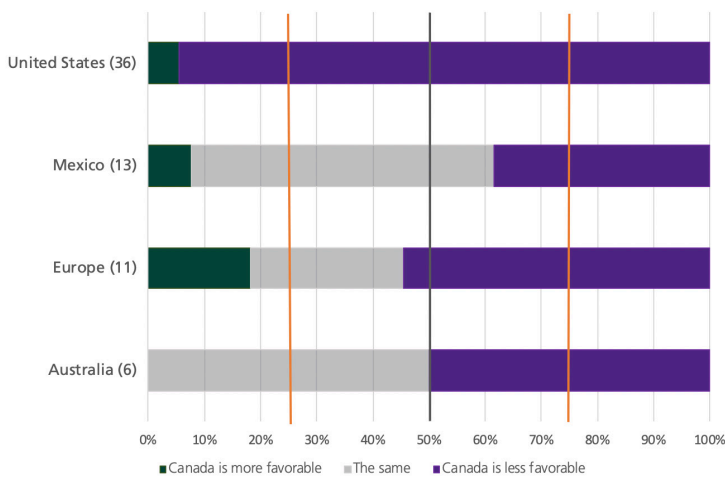
Q: How attractive are the overall investment conditions for companies like yours in the jurisdictions in which you have had the most professional experience?



Furthermore, when making direct comparisons between investment conditions in Canada and other countries, virtually all respondents viewed the United States as having a more favourable environment than Canada for the pipeline sector (see Figure 18). A majority of respondents rated Europe and Australia as having more favourable conditions than Canada, while those in Mexico were rated as about the same.

Figure 18: Investment Environment for the Pipeline Sector in Canada Compared to Other Countries

Q: How do the overall investment conditions in Canada compare to other jurisdictions for companies like yours in which your company is active?

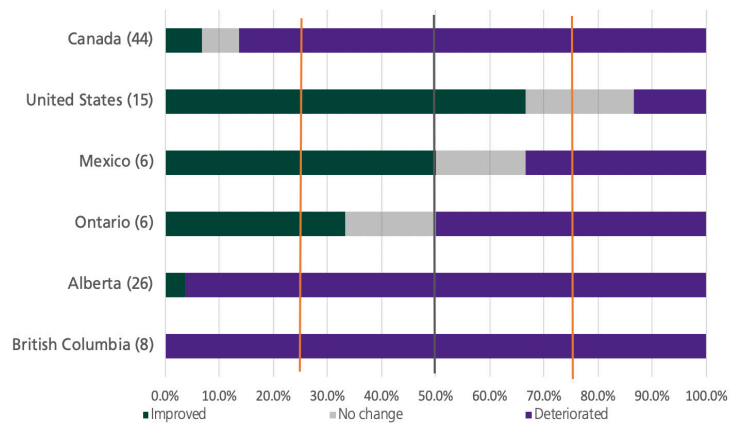


When considering how investment conditions had changed over the last three years, most respondents judged that conditions in Canada’s pipeline sector had deteriorated. At the provincial level, a majority of respondents viewed conditions in Alberta, British

Columbia, and Ontario as having worsened. On the other hand, a majority of respondents whose companies were active in the United States and Mexico believed that conditions had improved in those countries’ pipeline sectors.

Figure 19: Change in Investment Conditions for the Pipeline Sector

Q: How have the overall investment conditions for companies like yours changed over the last three years in the jurisdictions in which you have had the most professional experience?



The survey asked respondents to evaluate the factors that affect investment decisions in the jurisdictions in which they had had professional experience. Table 4 presents the results for eight categories of economic, policy, and social factors for Canada and several other jurisdictions. Within Canada, economic factors such as input, product market and financial capital conditions rated relatively favourably, but the policy environment, especially at the federal level, rated unfavourably, as did public opinion. The weak assessment of the policy environment in Canada was the key differentiator from the investment environment in the United States: economic factors were rated favourably, and federal and state level policy conditions were also assessed as being favourable for pipeline sector investment. Mexico ranked higher than Canada in overall investment conditions, though not as strongly as the United States. Provincially, British Columbia’s investment environment was rated as being more unfavourable than Alberta’s, primarily due to a much less supportive provincial policy context.

A majority of respondents at pipeline companies recommended streamlining and clarifying project approval processes, and many noted concerns in this regard about the impact of the recent federal Bill C-69. A significant number of survey respondents also noted

the need to improve the consistency and stability of regulation in order to reduce investment risks, and the need to construct new pipelines to gain access to international markets.

Table 4: Impact of Economic, Policy, and Social Factors on Pipeline Sector Investment

Q: What is the current impact of the factors listed below on investment decisions for companies like yours?

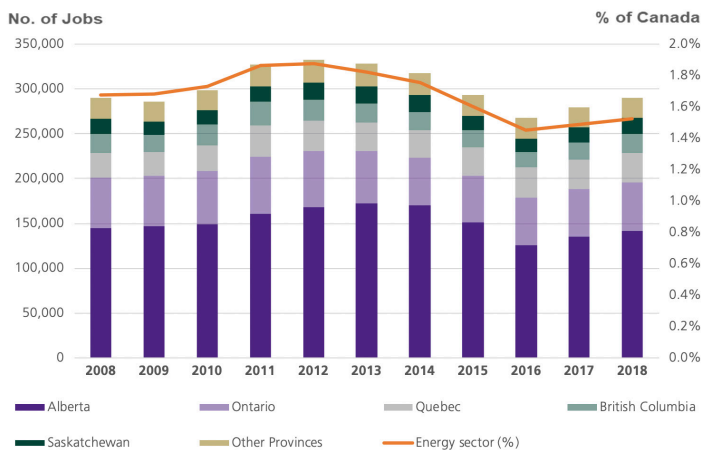
Factor	Canada (44)	Mexico (6)	United States (15)	Alberta (26)	British Columbia (8)	Ontario (6)
Input Cost/ Availability	3.6	3.5	4.1	3.9	3.3	3.2
Product Market Factors	3.4	3.9	4.0	3.4	3.1	3.6
Cost/Availability of Financial Capital	3.1	3.7	4.4	3.3	2.8	3.6
R&D Support	3.0	2.6	3.6	2.9	3.3	3.0
Tax and Royalty Regimes	3.0	3.5	4.4	3.0	2.9	3.0
Provincial/State Policy & Regulation	2.6	3.2	3.3	2.9	1.8	2.6
Public Opinion	1.8	3.3	2.7	1.8	1.6	2.0
Federal Policy & Regulation	1.3	3.6	3.9	1.2	1.1	1.7
Average Score	2.7	3.4	3.8	2.8	2.5	2.8

Assigned values: Unfavourable=1, Somewhat unfavourable=2, Neutral=3, Somewhat favourable=4, Favourable=5. The results presented for Canada are the average results of the specific provinces or territories chosen by the respondents. Only jurisdictions with five or more responses are included.

EMPLOYMENT IN CANADA'S ENERGY SECTOR

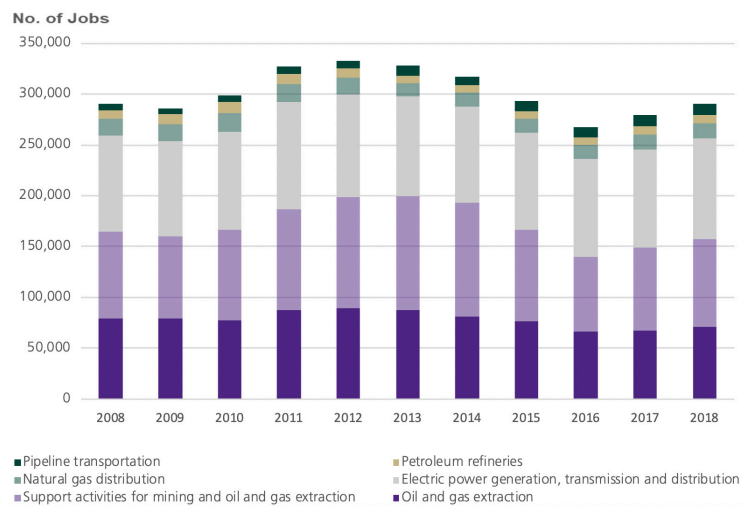
The energy sector is also an important employer of Canadian workers, accounting for 1.5 percent of Canada's labour force in 2018, a reduction from 1.7 percent in 2013 (Figure 20). This comprises 290,350 direct jobs out of a total national labour force of more than 19 million. Five provinces (Alberta, British Columbia, Ontario, Quebec, and Saskatchewan) together employ over 90 percent of Canada's energy sector jobs. Alberta accounts for the largest share of energy sector jobs in Canada at 141,660 positions (49 percent in 2018), although the number has declined from 172,005 jobs in 2013. The oil and gas extraction sector and supporting industries account for 54 percent of energy sector jobs, while the electricity sector (generation, transmission and distribution) accounts for 34 percent (in 2018) (see Figure 21).

Figure 20: Energy Sector Employment by Province



Source: Statistics Canada. Table 36-10-0489-01 Labour statistics consistent with the System of National Accounts (SNA), by job category and industry

Figure 21: Employment by Energy Industry

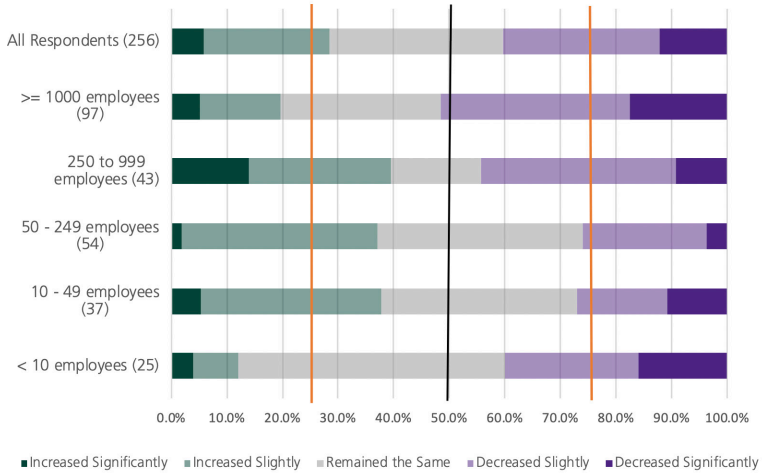


Source: Statistics Canada. Table 36-10-0489-01 Labour statistics consistent with the System of National Accounts (SNA), by job category and industry

The survey included a question about recent employment changes at respondent companies. The median respondent reported no change in employment levels. 40 percent of respondents reported their company had decreased employment over the previous twelve months, while 29 percent indicated they had increased employment (Figure 22). 31 percent experienced no change in employment. Mid-sized companies – those with 10 to 249 employees – were more likely to have increased than decreased employment. By contrast, very small and very large energy companies (with employment levels greater than 1,000) were more likely to have decreased than increased employment. In particular, 52 percent of respondents from the largest energy companies reported their company had decreased employment over the previous 12 months.

Figure 22: Recent Change in Employment by Company Size

Q: Over the past 12 months, has employment at your company increased, decreased or remained the same?



CONCLUSIONS

Continued investment in any industry is crucial for remaining competitive: new investment enables companies to improve their operating efficiencies, to innovate, and to develop new markets. This is particularly the case for the energy sector, which is heavily capital intensive, making access to financial capital an important determinant of industry success.

A number of core insights about the investment environment for Canada's energy sector emerge from the collective survey responses. First, Canada compares unfavourably to most other countries where executives had foreign experience. The strongest contrast was with the United States: in each of the electricity, gas, oil, and pipeline sectors, the United States investment climate was deemed significantly more attractive than that in Canada, with the largest difference being in the oil sector. Furthermore, in each sector, conditions were viewed as having deteriorated in Canada over the last three years while they had improved in the United States and in other countries. From a global perspective, the survey suggests that Canada is less competitive than other countries in offering an attractive environment for investment in energy sector assets.

Second, there is variation in investment conditions between the four energy industries, ranging from neutral to unfavourable. Electricity sector investment conditions rated as neutral and, at the time of the survey, executives expected that investment would increase slightly over the next three years (versus an expected significant increase in the United States). Economic factors such as input costs and financing conditions were viewed as contributing favourably to investment decisions, while provincial policies and regulations were rated as having the most negative impact on investment – especially in Ontario and British Columbia. Respondents rated each economic, policy, and social factor in the United States as being more favourable than in Canada, with the greatest difference being the impact of the state/provincial policy environment – which was viewed as favourable in the United States versus unfavourable in Canada.

Third, the investment climate for oil and gas ranked as the least favourable within the energy sector. Input conditions rated well but the federal policy and

regulatory environment was viewed as having the most unfavourable impact out of all economic, policy, and social factors. In contrast, the federal policy and regulatory environment was rated as the second most favourable investment factor for the oil industry in the United States. Access to financial capital and public opinion in Canada were also rated as problematic. Provincial policies and regulations were rated as unfavourable in British Columbia, approximately neutral in Alberta, and favourable in Saskatchewan.

Investment conditions for the pipeline sector were ranked as less favourable than those for electricity but more favourable than those for oil and gas. Access to financial capital was viewed as better for pipelines than for oil and gas investment, but federal policy and regulation and public opinion were similarly ranked as the least favourable factors affecting investment decisions.

In summary, the results of the survey provide new insights into why investment in Canada's energy sector has been anaemic over the last three years, despite an abundance of natural resources, while investment in the United States energy sector has steadily increased. Policymakers must weigh up multiple and sometimes conflicting objectives on economic, environmental, and social dimensions when formulating energy policies and regulations. From the perspective of the industry, survey respondents identified several policy areas where reform would improve the investment climate: making regulatory approval processes more efficient so as to reduce the burden on project applicants, especially for major infrastructure projects; improving the stability, predictability and consistency of regulation and policy to reduce the risks of investment in long-lived assets; supporting the development of new pipeline infrastructure to gain export access of Canadian oil and gas to world energy markets; enhancing public understanding of the energy industry's role within Canada's economy; and articulating a strategic approach to energy policy that incorporates economic development, environmental, climate, and social goals.

APPENDIX A: STATISTICAL OVERVIEW OF THE CANADIAN ENERGY SECTOR

Table A1: Canadian Energy Sector Global Rankings

World Rank	Category	Amount	Total (%)	Year
4th	Crude Oil Production	259 million tonnes	5.8	2018
5th	Crude Oil Exports	131 million tonnes	6.3	2017
10th	Crude Distillation Capacity	1,931 thousand barrels per calendar day	2	2018
10th	Refinery Output	93 million tonnes	2.2	2017
4th	Natural Gas Production	190 billion cubic metres	4.8	2018
5th	Natural Gas Export	59 billion cubic metres	5.9	2018
6th	Electricity Generation	658 terawatt hours	2.6	2017
1st	Electricity Exports	62 terawatt hours	17.7	2017
6th	Nuclear Electricity Production	101 terawatt hours	3.8	2017
2nd	Hydroelectric Electricity Production	393 terawatt hours	9.4	2017
4th	Renewable Electricity Production	432 terawatt hours	6.9	2017

Source: International Energy Agency, Key Energy Statistics 2019

Table A2: Capital Expenditures by Sector, Canada (Millions of Dollars)

	Industry (NAICS)					Energy Sector CAPEX	All Canadian Industries CAPEX	Energy Sector Share of Canada CAPEX
	Oil and gas extraction [211]	Support activities for mining and oil and gas extraction [213]	Electric power generation, transmission and distribution [2211]	Natural gas distribution [2212]	Pipeline transportation [486]			
2008	44,861	2,715	14,679	1,362	5,276	68,893	223,454	31%
2009	26,938	2,050	17,074	1,437	4,575	52,073	192,395	27%
2010	42,965	1,633	18,018	1,187	2,534	66,337	218,196	30%
2011	52,168	3,405	19,191	1,399	2,804	78,967	235,081	34%
2012	58,780	2,619	19,919	2,043	4,779	88,140	249,226	35%
2013	65,074	3,732	24,302	1,550	8,213	102,870	256,042	40%
2014	76,070	3,242	25,528	2,017	8,668	115,525	272,109	42%
2015	51,065	2,558	23,944	2,767	8,452	88,786	251,338	35%
2016	37,605	961	23,509	2,515	7,508	72,098	229,952	31%
2017	40,248	1,331	23,865	2,290	7,809	75,543	239,906	31%
2018	37,052	1,310	21,557	2,137	8,132	70,188	263,397	27%
2019	33,274	878	22,144	2,191	9,315	67,802	267,973	25%
Share of Total (2019)	49%	1%	33%	3%	14%	100%		

Sources: Statistics Canada. Table 34-10-0036-01 Capital and repair expenditures, non-residential tangible assets by industry (x 1,000,000), Statistics Canada. Table 34-10-0035-01 Capital and repair expenditures, non-residential tangible assets, by industry and geography (x 1,000,000)

Table A3: Capital Expenditures by Sector, United States (Millions of US Dollars)

	Industry (NAICS)					Total	All US Industries CAPEX (Flow)	Share of US CAPEX	CAD/USD Exchange Rate
	Oil and gas extraction [211]	Support activities for mining [213]	Utilities [22]	Pipeline transportation [486]					
2008	135,912	22,319	114,558	20,193		292,982	4,143,540	7.1%	1.066
2009	101,641	14,439	119,919	13,024		249,023	3,529,316	7.1%	1.1420
2010	119,064	14,718	107,275	12,772		253,829	3,788,644	6.7%	1.0299
2011	142,423	23,069	111,345	9,149		285,986	3,990,408	7.2%	0.9891
2012	162,742	24,256	127,557	17,848		332,403	4,320,660	7.7%	0.9996
2013	170,662	21,642	120,247	22,305		334,856	4,540,536	7.4%	1.0299
2014	184,666	22,085	131,723	30,829		369,303	4,807,244	7.7%	1.1045
2015	132,857	13,292	131,891	24,166		302,206	5,057,591	6.0%	1.2787
2016	74,161	6,366	137,657	26,566		244,750	5,071,894	4.8%	1.3248
2017	104,889	10,598	137,218	23,558		276,263	5,338,999	5.2%	1.2986
2018	128,878	10,651	140,359	24,616		304,504	5,691,391	5.4%	1.2957
Share of Total (2018)	42%	3%	46%	8%		100%			

Sources: Industry CAPEX data from: U.S BEA; Aggregate U.S CAPEX data from: Board of Governors of the Federal Reserve System (US), All Sectors; Total Capital Expenditures, Flow [BOGZ1FA895050005A], retrieved from FRED, Federal Reserve Bank of St. Louis; Exchange Rate data from: Bank of Canada

Table A4: Employment by Industry

	Industry (NAICS)						Energy Sector Employment
	Oil and gas extraction [211]	Support activities for mining and oil and gas extraction [213]	Electric power generation, transmission and distribution [2211]	Natural gas distribution [2212]	Petroleum refineries [32411]	Pipeline transportation [486]	
2008	79,020	86,045	93,965	16,400	8,990	5,610	290,030
2009	79,285	81,060	92,965	17,170	9,740	5,440	285,660
2010	77,735	88,290	96,985	18,220	10,820	6,940	298,990
2011	87,155	99,075	106,475	16,995	10,540	7,190	327,430
2012	89,640	109,245	100,465	16,440	9,725	7,500	333,015
2013	87,400	112,435	97,695	13,415	7,440	9,795	328,180
2014	80,845	112,710	94,135	13,455	7,205	8,965	317,315
2015	76,860	89,495	95,750	13,800	7,495	9,630	293,030
2016	66,090	73,720	96,500	13,460	7,445	10,310	267,525
2017	67,550	81,640	96,695	14,605	7,830	11,260	279,580
2018	70,730	86,920	98,465	15,170	8,080	10,985	290,350

Source: Statistics Canada. Table 36-10-0489-01 Labour statistics consistent with the System of National Accounts (SNA), by job category and industry

Table A5: Energy Sector Contribution to Canadian GDP by Province/Territory (Millions of Dollars)

Province/ Territory	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	% of Total (2019)
Alberta	69,797	73,399	78,192	79,338	82,965	92,053	89,773	86,882	99,125	103,906	100,311	55.59%
Saskatchewan	16,471	16,236	16,690	17,039	17,146	18,423	18,275	17,700	18,282	18,147	17,939	9.94%
Ontario	16,620	16,129	16,179	15,701	15,500	16,502	16,344	16,607	16,583	17,259	17,291	9.58%
British Columbia	10,276	10,811	11,695	11,352	11,906	12,343	12,375	13,101	13,507	13,912	14,039	7.78%
Quebec	11,484	11,821	12,016	12,017	12,066	12,463	12,814	12,953	13,320	13,446	13,413	7.43%
Newfoundland and Labrador	10,154	10,695	10,474	8,132	9,029	8,443	7,281	8,562	9,157	9,539	10,410	5.77%
Manitoba	2,980	3,142	3,375	3,651	3,553	3,617	3,680	3,678	3,758	3,766	3,961	2.20%
New Brunswick	1,800	1,770	1,706	1,603	1,732	1,677	1,677	1,686	1,725	1,612	1,727	0.96%
Nova Scotia	1,662	1,624	1,445	1,176	1,100	1,134	1,037	1,010	978	975	939	0.52%
Northwest Territories	581	546	425	497	423	412	367	327	95	137	231	0.13%
Prince Edward Island	54	60	64	63	59	65	67	70	72	76	78	0.04%
Yukon	50	52	51	53	45	43	46	49	54	54	52	0.03%
Nunavut	42	43	45	46	45	48	51	52	52	53	52	0.03%
Canadian Energy Sector	141,969	146,326	152,358	150,666	155,569	167,221	163,787	162,676	176,707	182,881	180,443	100%
Canada GDP	1,569,644	1,624,730	1,678,329	1,710,432	1,753,922	1,804,500	1,819,352	1,838,742	1,897,640	1,939,593	1,972,155	
Share of Energy Sector	9.04%	9.01%	9.08%	8.81%	8.87%	9.27%	9.00%	8.85%	9.31%	9.43%	9.15%	

Sources: Statistics Canada. Table 36-10-0402-01 Gross domestic product (GDP) at basic prices, by industry, provinces and territories (x 1,000,000), Statistics Canada. Table 36-10-0434-03 Gross domestic product (GDP) at basic prices, by industry, annual average (x 1,000,000), Note: Chained 2012 Dollars

Table A6: Energy Sector Contributions to GDP (Federal)

Economic Indicator	Oil and gas extraction	Support activities for mining and oil and gas extraction	Electric power generation, transmission and distribution	Natural gas distribution	Petroleum refineries	Pipeline transportation	Total Energy Sector	Total Economy
Gross Domestic Product, 2019 (\$M)	109,211	11,603	34,946	5,476	9,460	9,787	177,505	1,971,346
Gross Domestic Product, 2019 (%)	5.5%	0.8%	1.8%	0.3%	0.5%	0.5%	9.3%	100%

Source: Statistics Canada. Table 36-10-0434-03 Gross domestic product (GDP) at basic prices, by industry, annual average (x 1,000,000)

Table A7: Energy Sector Contributions to GDP (Provincial), 2019

Province/Territory	Energy Sector (\$M)	Provincial Total (\$M)	Energy Sector (%)
Alberta	100,311	334,172	30.0
Saskatchewan	17,939	81,541	22.0
Ontario	17,291	744,440	2.3
British Columbia	14,039	253,049	5.5
Quebec	13,413	377,043	3.6
Newfoundland and Labrador	10,410	31,588	33.0
Manitoba	3,961	63,487	6.2
New Brunswick	1,727	30,745	5.6
Nova Scotia	939	37,441	2.5
Northwest Territories	231	4,302	5.4
Prince Edward Island	78	6,052	1.3
Yukon	52	2,618	2.0
Nunavut	52	3,156	1.6

Source: Statistics Canada. Table 36-10-0402-01 Gross domestic product (GDP) at basic prices, by industry, provinces and territories (x 1,000,000), Statistics Canada. Table 36-10-0434-03 Gross domestic product (GDP) at basic prices, by industry, annual average (x 1,000,000)

Table A8: Energy Sector Exports by Industry (Millions of Dollars)

	Industry (NACPS)						Total Energy Products Exports	Total Merchandise Exports	Energy Share of Merchandise Exports
	Crude oil and crude bitumen [C121]	Natural gas, natural gas liquids and related products [C122]	Coal [C123]	Nuclear fuel and other energy products [C124]	Electricity [C125]	Refined petroleum energy products [C126]			
2008	60,979	35,861	5,632	2,201	3,788	11,464	119,925	487,262	25%
2009	42,515	17,904	4,112	2,048	2,383	7,233	76,195	367,211	21%
2010	49,907	17,511	4,950	2,430	2,022	8,921	85,741	403,967	21%
2011	68,526	15,489	6,929	3,013	2,031	10,491	106,480	456,613	23%
2012	71,672	10,568	5,201	2,281	1,927	14,084	105,732	461,511	23%
2013	81,498	12,693	4,257	2,570	2,444	12,644	116,104	479,225	24%
2014	92,600	18,183	3,097	1,863	2,946	11,462	130,150	529,334	25%
2015	55,713	11,354	2,524	2,234	3,137	10,255	85,218	524,046	16%
2016	48,210	9,993	3,494	2,481	2,914	7,047	74,139	522,301	14%
2017	63,466	12,688	5,757	2,017	2,936	9,945	96,809	550,262	18%
2018	75,985	12,620	6,418	2,187	2,912	10,987	111,109	585,199	19%
2019	81,252	11,716	5,879	2,219	2,512	10,488	114,065	595,301	19%
Share of Total (2019)	71%	10%	5%	2%	2%	9%	100%		

Source: Statistics Canada. Table 12-10-0122-01 International merchandise trade by commodity, quarterly (x 1,000,000)

Table A9: Canadian Exports by Sector (Millions of Dollars)

Industry (NACPS)	Energy products [C12]	Motor vehicles and parts [C19]	Consumer goods [C22]	Metal and non-metallic mineral products [C14]	Forestry products and building and packaging materials [C16]	Industrial machinery, equipment and parts [C17]	Farm, fishing and intermediate food products [C11]
2008	119,925	60,146	46,541	53,283	35,751	32,307	27,251
2009	76,194	43,320	43,407	36,493	27,744	27,035	23,841
2010	85,741	56,577	43,257	47,100	29,864	25,854	23,715
2011	106,480	58,793	44,707	57,291	31,011	28,810	27,851
2012	105,732	67,578	44,324	52,697	31,135	30,114	30,722
2013	116,104	67,169	47,180	52,217	33,794	30,133	32,394
2014	130,150	73,589	53,475	56,112	36,879	32,943	35,843
2015	85,218	88,762	62,709	56,057	39,919	36,007	38,476
2016	74,139	98,449	66,182	55,519	42,123	35,195	38,311
2017	96,809	93,160	62,913	61,632	43,777	37,081	38,913
2018	111,109	90,429	66,554	64,568	47,197	39,355	39,735
2019	114,065	93,130	70,705	65,335	42,377	41,309	37,989
% of Total (2019)	19%	16%	12%	11%	7%	7%	6%

Industry (NACPS)	Basic and industrial chemical, plastic and rubber products [C15]	Electronic and electrical equipment and parts [C18]	Aircraft and other transportation equipment and parts [C21]	Metal ores and non-metallic minerals [C13]	Other balance of payments adjustments [C24]	Special transactions trade [C23]	Total of all merchandise
2008	33,672	28,756	18,771	17,129	6,975	6,755	487,262
2009	24,895	24,293	18,225	10,868	6,157	4,739	367,211
2010	28,758	22,590	16,188	15,272	6,591	2,461	403,967
2011	33,354	23,311	16,545	19,005	7,053	2,401	456,613
2012	31,346	23,217	17,868	17,176	7,523	2,081	461,511
2013	32,755	22,839	17,952	16,131	8,125	2,431	479,225
2014	33,865	24,791	22,444	16,643	9,286	3,313	529,334
2015	32,701	27,585	25,359	16,785	10,521	3,947	524,046
2016	31,110	28,203	23,594	13,930	11,588	3,957	522,301
2017	32,774	28,396	22,756	16,082	12,166	3,804	550,262
2018	35,006	29,404	25,742	19,259	13,078	3,764	585,199
2019	34,212	30,011	28,043	20,865	13,436	3,827	595,301
% of Total (2019)	6%	5%	5%	4%	2%	1%	100%

Source: Statistics Canada. Table 12-10-0122-01 International merchandise trade by commodity, quarterly (x 1,000,000)

Table A10: Taxes Paid by the Energy Sector (Millions of Dollars)

Total federal tax						
Industry (NAICS)	Oil and gas extraction and support activities	Mining and quarrying (except oil and gas)	Utilities	Petroleum and coal products manufacturing	Pipelines, warehousing and transportation support activities	Total
2008	3,101	909	308	1,258	421	5,997
2009	3,928	321	376	954	305	5,884
2010	1,710	644	272	563	331	3,520
2011	1,463	678	278	607	390	3,416
2012	1,345	277	239	697	492	3,050
2013	1,077	179	272	861	570	2,959
2014	1,606	149	278	1,023	712	3,768
2015	720	124	292	434	757	2,327
2016	552	141	362	503	511	2,069
2017	544	145	223	516	677	2,105
2018	527	190	228	915	727	2,587
Provincial income taxes						
Industry (NAICS)	Oil and gas extraction and support activities	Mining and quarrying (except oil and gas)	Utilities	Petroleum and coal products manufacturing	Pipelines, warehousing and transportation support activities	Total
2008	1,722	636	186	747	223	3,514
2009	2,194	220	262	554	260	3,490
2010	1,027	497	170	344	256	2,294
2011	987	571	162	389	279	2,388
2012	1,057	252	119	506	338	2,272
2013	910	163	135	634	356	2,198
2014	1,266	115	105	760	400	2,646
2015	560	124	117	380	485	1,666
2016	476	112	86	408	368	1,450
2017	480	255	139	453	417	1,744
2018	528	220	85	756	478	2,067
Total taxes						
Industry (NAICS)	Oil and gas extraction and support activities	Mining and quarrying (except oil and gas)	Utilities	Petroleum and coal products manufacturing	Pipelines, warehousing and transportation support activities	Total
2008	4,824	1,545	493	2,005	645	9,512
2009	6,122	541	638	1,508	565	9,374
2010	2,737	1,142	443	907	586	5,815
2011	2,450	1,249	440	996	668	5,803
2012	2,401	529	359	1,203	830	5,322
2013	1,987	342	407	1,495	926	5,157
2014	2,872	263	383	1,783	1,112	6,413
2015	1,280	247	408	815	1,242	3,992
2016	1,028	253	448	911	879	3,519
2017	1,024	400	362	970	1,094	3,850
2018	1,055	410	313	1,671	1,205	4,654

Source: Statistics Canada. Table 33-10-0006-01 Financial and taxation statistics for enterprises, by industry type (x 1,000,000)

APPENDIX B: SURVEY INSTRUMENT

Q1. Please indicate the major energy sectors in which your company is active (Select all that apply): [Electricity / Oil / Gas / Pipelines]

Q1.1. Please indicate the specific **ELECTRICITY** sectors in which your company is active (Select all that apply): [Electric bulk power transmission and control / Electric power distribution / Electric power wholesale trading / Electricity retail / Power generation - Hydro-electric / Power generation - Natural gas / Power generation - Coal / Power generation - Nuclear / Power generation - Wind / Power generation - Solar / Power generation - Biogas / Power generation - Geothermal / Power generation - Biomass / Demand response or storage / Other (specify)]

Q1.2. Please indicate the specific **OIL** sectors in which your company is active (Select all that apply): [Oil exploration / Off-shore oil production / Oil extraction and production (on-shore) / Oil transportation / Oil storage / Oil refining and upgrading / Petrochemical processing / Other (specify)]

Q1.3. Please indicate the specific **GAS** sectors in which your company is active (Select all that apply): [Natural gas gathering/extraction / Natural gas processing / Natural gas transmission / Natural gas storage / Natural gas trading / wholesale / Natural gas distribution / Natural gas retail / LNG fractionation/processing / Other (specify)]

Q1.4. Please indicate the specific **PIPELINE** sectors in which your company is active (Select all that apply): [Pipeline transportation and storage of crude oil / Pipeline transportation and storage of natural gas / Pipeline transportation and storage of refined petroleum products / Other (specify)]

Q2. Please indicate the size of your company in terms of employment: [< 10 employees / 10 - 49 employees / 50 - 249 employees / 250 to 999 employees / >= 1000 employees]

Q3. Please indicate the sectors and jurisdictions in which your company is active (Select all that apply): [Electricity / Oil / Gas / Pipelines] and [Alberta / British Columbia / Manitoba / New Brunswick / Newfoundland and Labrador / Nova Scotia / Ontario / Prince Edward Island / Quebec / Saskatchewan / Territories within Canada / United States / Australia / Mexico / United Kingdom / Other 1 (Specify) / Other 2 (Specify) / Other 3 (Specify)]

Q4.1. In your opinion, how is the level of investment by your company likely to change over the next three years in the following businesses? (Select one of Decrease significantly, Decrease slightly, No change, Increase slightly, Increase significantly)

Q4.2. In your opinion, how do the overall investment conditions in Canada compare to other jurisdictions for companies like yours? (Select one of Canada is less favorable, The same, Canada is more favorable)

Q4.3. Please indicate the energy sectors and jurisdictions in which you have had the most professional experience at your current company (Select up to three): [e.g. Alberta - Electricity / Alberta - Oil / Alberta - Gas / Alberta - Pipelines, etc.]

Q5. In your opinion, how attractive are the overall investment conditions for companies like yours in the sectors and jurisdictions listed below? (Select one of Very unattractive, Mildly unattractive, Neutral, Mildly attractive, Very attractive)

Q6. In your opinion, how have the overall investment conditions for companies like yours changed over the last three years in the sectors and jurisdictions listed below? (Select one of Deteriorated, No Change, Improved)

Q6.1. In your opinion, what factors have caused investment conditions to change? (Select all that apply):
[Economic conditions / Government policy / Regulatory frameworks / Competition in the sector / Other 1 (specify) / Other 2 (specify) / Other 3 (specify)]

Q7.1. In your opinion, what is the current impact of the factors listed below on investment decisions for companies like yours in the following sector: (Select one of Unfavourable, Somewhat unfavourable, Neutral, Somewhat favourable, Favourable)

Q8. In your opinion, over the past 12 months, has employment at your company increased, decreased or remained the same? [Decreased significantly / Decreased slightly / Remained the same / Increased slightly / Increased significantly / I don't know]

Q8.1. What factors have contributed to the change in employment at your company? (Select all that apply):
[Merger, acquisition or corporate restructuring / Economic conditions / Competitive pressures in the sector / Government policy / Regulatory frameworks / Other (specify)]

Q9. Do you currently hold, or have you held, any of the following professional designations? (Select all that apply):
[Engineer / Accountant / Investment Manager or Financial Analyst / Lawyer / Institute of Corporate Directors Designation or Chartered Director / Other (specify)]

Q10. Please indicate the primary scope of responsibilities that you have in your company: [Board Director / C-level / Senior Management / Middle Management / Other (specify)]

Q11. Please indicate the number of years of employment experience you have in the energy sector: [< 5 years / 6-10 years / 11 - 20 years / 21 - 30 years / > 30 years]

Q12. In your opinion, what 1-2 changes in government policy/regulatory frameworks (provincial or federal) would have the greatest impact on improving the investment climate for companies like yours in Canada?

Q13. Please provide any comments on how we can improve this annual survey in the future.

APPENDIX C: SURVEY RESPONDENT CHARACTERISTICS

Electricity Sector

- 132 survey participants from 84 companies indicated their company was active in the electricity sector
- Respondents identified 27 separate provinces, countries or regions in which their companies were active with Ontario the most frequently cited (89 of 132 respondents or 67 percent), followed by Alberta (32 percent) and the United States (27 percent)
- 42 percent of the respondents were C-suite executives or board directors, with the remaining 58 percent in a position of management (Table C1)
- 81 percent of the respondents had over 10 years of experience in the energy sector (Table C2)
- Respondents held various professional designations, with roughly a third being professional engineers (Table C3)
- Over 40 percent of the respondents were employed in a company with more than 1,000 employees (Table C4)
- Nearly 60 percent of the respondents were active in the electricity distribution, 24 percent in transmission, and a substantial number of companies were active in electricity generation incorporating a variety of technologies (Table C5)

Table C1: Scope of Responsibilities in the Electricity Sector

Q: Please indicate the primary scope of responsibilities that you have in your company.

Scope of Responsibilities	Respondents	Percentage
C-level	41	31%
Board Director	14	11%
Senior Management	52	39%
Middle Management	15	11%
Other	10	8%
Total	132	100%

Table C2: Years of Employment Experience in the Electricity Sector

Q: Please indicate the number of years of employment experience you have in the energy sector.

Years Experience	Respondents	Percentage
> 30 years	33	25%
21 - 30 years	30	23%
11 - 20 years	43	33%
6 - 10 years	15	11%
< 5 years	10	8%
No Response	1	1%
Total	132	100%

Table C3: Professional Designations in the Electricity Sector

Q: Do you currently hold, or have you held, any of the following professional designations?

Profession	Respondents	Percentage
Engineer	43	33%
Accountant	22	17%
Investment Manager	14	11%
Lawyer	13	10%
Inst. of Corporate Directors Designation or Chartered Dir.	14	11%
No Response	7	5%
Other	19	14%
Total	132	100%

Tables C4: Company Size in Terms of Employment

Q: Please indicate the size of your company in terms of employment

Employment Size	Respondents	Percentage
>= 1000 Employees	57	43%
250 to 999 Employees	25	19%
50 to 249 Employees	28	21%
10 to 49 Employees	13	10%
< 10 Employees	9	7%
Total	132	100%

Table C5: Electricity Sectors Represented in the Survey

Q: Please indicate the specific electricity sectors in which your company is active (select all that apply).

Sectors and Sub-Sectors	Respondents	Percentage
Respondents also Active in Oil	24	18%
Respondents also Active in Gas	39	30%
Respondents also Active in Pipelines	28	21%
Bulk Power Transmission and Control	32	24%
Distribution	77	58%
Wholesale	34	26%
Retail	31	23%
Generation (Hydro)	42	32%
Generation (Natural Gas)	47	36%
Generation (Coal)	9	7%
Generation (Nuclear)	15	11%
Generation (Wind)	33	25%
Generation (Solar)	45	34%
Generation (Biogas)	10	8%
Generation (Biothermal)	10	8%
Generation (Biomass)	14	11%
Demand Response or Storage	30	23%
Other	11	8%
Total Respondents Active in Electricity	132	100%

Table C6: Impact of Economic, Policy, and Social Factors on Electricity Investment

Q: In your opinion, what is the current impact of the factors listed below on investment decisions for companies like yours?

Factor	Canada (116)	United States (11)	Alberta (13)	British Columbia (12)	Ontario (72)	Quebec (5)	Saskatchewan (5)
Government energy policy (Provincial/State)	2.3	4.4	3.0	1.9	2.2	2.4	2.6
Government energy policy (Federal)	2.8	3.4	2.8	2.7	2.8	3.4	1.8
Regulatory frameworks and approval processes (Provincial/State)	2.1	4.1	2.5	1.8	2.0	2.6	3.0
Regulatory frameworks and approval processes (Federal)	2.5	3.5	2.3	2.5	2.6	3.0	1.4
Environmental standards and assessment processes (Provincial/State)	2.7	3.8	3.0	2.5	2.7	2.8	2.4
Environmental standards and assessment processes (Federal)	2.7	2.9	2.5	2.7	2.8	3.0	1.4
Corporate tax and royalty regime	3.0	4.3	3.0	2.9	3.0	3.2	2.8
Innovation/R&D support	2.9	3.1	2.9	2.9	2.9	2.8	2.8
Legal framework	2.9	3.8	3.1	2.7	2.8	3.0	3.0
Market price/regulated rate of energy product/service	2.4	3.8	2.5	2.1	2.5	2.0	2.5
Demand conditions for energy product/service	2.9	4.1	2.5	2.8	3.0	3.0	3.0
Natural resource availability	3.7	4.2	4.2	4.1	3.5	3.8	4.0
Cost & availability of financial capital (debt & equity)	3.7	4.6	3.0	3.9	3.9	4.0	4.2
Supplier, equipment and material costs and availability	3.5	3.9	3.5	3.9	3.6	3.8	3.6
Labour costs, availability, and skill set	3.1	3.8	3.3	3.5	3.1	3.4	3.6
Land cost and availability	3.2	3.4	3.6	3.5	3.0	3.4	4.2
Quality of local infrastructure (e.g. roads, transport)	3.3	3.4	3.8	3.5	3.3	3.2	3.6
Public opinion	2.9	4.3	3.3	2.9	2.9	2.8	3.4
Average Score	3.0	3.9	3.0	2.9	3.0	3.1	3.0

Unfavourable=1, Somewhat unfavourable=2, Neutral=3, Somewhat favourable=4, Favourable=5. Purple highlights less than somewhat unfavourable. Green highlights more than somewhat favourable.

Oil Sector

- 121 survey participants from 86 companies indicated their company was active in the oil sector
- Respondents identified 41 separate provinces, countries and regions in which their companies were active with Alberta the most frequently cited (103 of 121 respondents or 85 percent), followed by British Columbia (35 percent) and the United States (35 percent)
- 44 percent of respondents were C-suite executives or board directors, with the remaining 56 percent in a position of management (Table C7)
- 85 percent of the respondents had over 10 years of experience (Table C8)
- Respondents held various professional designations, with roughly a third being professional engineers (Table C9)
- Around 35 percent of the respondents were employed in a company with more than 1,000 employees (Table C10)
- 72 percent of the respondents were active in on-shore extraction and production, 62 percent in exploration and 72 percent of respondents active in the oil sector will also active in the natural gas sector (Table C11)

Table C7: Scope of Responsibilities in the Oil Sector

Q: Please indicate the primary scope of responsibilities that you have in your company.

Scope of Responsibilities	Respondents	Percentage
C-level	44	36%
Board Director	9	7%
Senior Management	45	37%
Middle Management	12	10%
Other	11	9%
Total	121	100%

Table C8: Years of Employment Experience in the Oil Sector

Q: Please indicate the number of years of employment experience you have in the energy sector.

Years Experience	Respondents	Percentage
> 30 years	48	40%
21 - 30 years	24	20%
11 - 20 years	31	26%
6 - 10 years	12	10%
< 5 years	6	5%
No Response	0	0%
Total	121	100%

Table C9: Professional Designations in the Oil Sector

Q: Do you currently hold, or have you held, any of the following professional designations?

Profession	Respondents	Percentage
Engineer	42	35%
Accountant	23	19%
Investment Manager	13	11%
Lawyer	15	12%
Inst. of Corporate Directors Designation or Chartered Dir.	8	7%
No Response	13	11%
Other	18	15%
Total	121	100%

Table C10: Company Size in Terms of Employment

Q: Please indicate the size of your company in terms of employment.

Employment Size	Respondents	Percentage
>= 1000 Employees	42	35%
250 to 999 Employees	21	17%
50 to 249 Employees	23	19%
10 to 49 Employees	19	16%
< 10 Employees	16	13%
Total	121	100%

Table C11: Oil Sectors Represented in the Survey

Q: Please indicate the specific oil sectors in which your company is active (select all that apply).

Sectors and Sub-Sectors	Respondents	Percentage
Respondents also Active in Electricity	24	20%
Respondents also Active in Gas	92	76%
Respondents also Active in Pipelines	32	26%
Exploration	75	62%
Off-shore Production	22	18%
On-shore Extraction and Production	87	72%
Oil Transportation	34	28%
Oil Storage	27	22%
Refining and Upgrading	25	21%
Petrochemical Processing	14	12%
Other	14	12%
Total Respondents Active in Oil	121	100%

Table C12: Impact of Economic, Policy, and Social Factors on Oil Investment

Q: In your opinion, what is the current impact of the factors listed below on investment decisions for companies like yours?

Factor	Canada (117)	United States (18)	Alberta (84)	British Columbia (6)	Newfoundland & Labrador (6)	Saskatchewan (15)
Government energy policy (Provincial/State)	3.2	4.0	3.3	1.5	2.5	4.1
Government energy policy (Federal)	1.3	4.2	1.2	1.2	2.0	1.2
Regulatory frameworks and approval processes (Provincial/State)	2.5	3.9	2.5	1.5	2.0	3.7
Regulatory frameworks and approval processes (Federal)	1.3	3.9	1.2	1.2	1.5	1.1
Environmental standards and assessment processes (Provincial/State)	2.7	3.9	2.7	2.2	2.5	3.1
Environmental standards and assessment processes (Federal)	1.5	4.0	1.5	1.7	1.5	1.2
Corporate tax and royalty regime	2.9	4.3	2.9	2.3	2.5	3.3
Innovation/R&D support	2.9	3.7	2.9	2.5	3.0	3.2
Legal framework	2.9	3.6	2.8	2.5	3.2	3.3
Market price/regulated rate of energy product/service	2.3	3.8	2.2	2.5	3.4	2.7
Demand conditions for energy product/service	3.3	4.2	3.3	3.2	4.0	3.3
Natural resource availability	4.2	4.4	4.3	3.5	3.7	4.2
Cost & availability of financial capital (debt & equity)	1.8	2.9	1.6	1.7	2.7	1.9
Supplier, equipment and material costs and availability	3.6	4.0	3.6	3.0	2.8	3.9
Labour costs, availability, and skill sets	3.5	3.7	3.6	2.8	2.8	3.7
Land cost and availability	3.7	3.9	3.8	3.2	2.4	4.1
Quality of local infrastructure (e.g. roads, transport)	3.5	3.9	3.6	3.2	2.8	3.5
Public opinion	1.8	3.8	1.6	1.7	3.2	2.6
Average Score	2.5	3.8	2.5	2.1	2.8	2.8

Unfavourable=1, Somewhat unfavourable=2, Neutral=3, Somewhat favourable=4, Favourable=5. Purple highlights less than somewhat unfavourable. Green highlights more than somewhat favourable.

Natural Gas Sector

- 125 survey participants from 90 companies indicated their company was active in the natural gas sector
- Respondents identified 35 separate provinces, countries and regions in which their companies were active, including Alberta (93 of 125 respondents or 74 percent), British Columbia (50 percent) and the United States (27 percent)
- 43 percent of respondents were C-suite executives or board directors, with the remaining 57 percent in a position of management (Table C13)
- 86 percent of the respondents had over 10 years of experience in the energy sector (Table C14)
- Respondents held various professional designations, with over a third being professional engineers (Table C15)
- Over 40 percent of the respondents were employed in a company with more than 1,000 employees (Table C16)
- The most frequent sub-sectors were gathering/extraction and processing, representing 65 percent and 43 percent of the companies respectively (Table C17)

Table C13: Scope of Responsibilities in the Natural Gas Sector

Q: Please indicate the primary scope of responsibilities that you have in your company.

Scope of Responsibilities	Respondents	Percentage
C-level	45	36%
Board Director	9	7%
Senior Management	44	35%
Middle Management	15	12%
Other	12	10%
Total	125	100%

Table C14: Years of Employment Experience in the Natural Gas Sector

Q: Please indicate the number of years of employment experience you have in the energy sector.

Years Experience	Respondents	Percentage
> 30 years	47	38%
21 - 30 years	31	25%
11 - 20 years	29	23%
6 - 10 years	11	9%
< 5 years	7	6%
No Response	0	0%
Total	125	100%

Table C15: Professional Designations in the Natural Gas Sector

Q: Do you currently hold, or have you held, any of the following professional designations?

Profession	Respondents	Percentage
Engineer	48	38%
Accountant	22	18%
Investment Manager	13	10%
Lawyer	13	10%
Inst. of Corporate Directors Designation or Chartered Dir.	7	6%
No Response	2	2%
Other	20	16%
Total	125	100%

Table C16: Company Size in Terms of Employment

Q: Please indicate the size of your company in terms of employment.

Employment Size	Respondents	Percentage
>= 1000 Employees	51	41%
250 to 999 Employees	18	14%
50 to 249 Employees	27	22%
10 to 49 Employees	20	16%
< 10 Employees	9	7%
Total	125	100%

Table C17: Natural Gas Sectors Represented in the Survey

Q: Please indicate the specific natural gas sectors in which your company is active (select all that apply).

Sectors and Sub-Sectors	Respondents	Percentage
Respondents also Active in Electricity	39	31%
Respondents also Active in Oil	92	74%
Respondents also Active in Pipelines	39	31%
Gathering/Extraction	81	65%
Processing	54	43%
Transmission	39	31%
Storage	26	21%
Trading/wholesale	26	21%
Distribution	32	26%
Retail	15	12%
LNG Fractionation/Processing	20	16%
Other	14	11%
Total Respondents Active in Gas	125	100%

Table C18: Impact of Economic, Policy, and Social Factors on Natural Gas Investment

Q: In your opinion, what is the current impact of the factors listed below on investment decisions for companies like yours?

Factor	Canada (100)	United States (6)	Alberta (59)	British Columbia (24)	Ontario (10)
Government energy policy (Provincial/State)	2.9	4.0	3.2	2.3	3.1
Government energy policy (Federal)	1.5	3.8	1.4	1.7	2.2
Regulatory frameworks and approval processes (Provincial/State)	2.4	3.8	2.5	2.0	2.7
Regulatory frameworks and approval processes (Federal)	1.4	3.8	1.3	1.5	2.1
Environmental standards and assessment processes (Provincial/State)	2.5	3.4	2.6	2.3	2.7
Environmental standards and assessment processes (Federal)	1.7	3.6	1.7	1.7	2.1
Corporate tax and royalty regime	2.9	4.0	3.2	2.7	2.3
Innovation/R&D support	2.9	3.6	3.0	2.8	2.8
Legal framework	2.7	3.8	2.9	2.2	2.4
Market price/regulated rate of energy product/service	2.1	3.8	1.9	2.1	2.9
Demand conditions for energy product/service	2.9	4.0	2.8	3.2	3.4
Natural resource availability	4.1	4.0	4.3	4.3	4.0
Cost & availability of financial capital (debt & equity)	1.9	4.0	1.7	1.6	3.4
Supplier, equipment and material costs and availability	3.5	3.8	3.6	3.6	3.6
Labour costs, availability, and skill sets	3.4	3.6	3.6	3.4	3.2
Land cost and availability	3.7	3.8	3.9	3.7	3.3
Quality of local infrastructure (e.g. roads, transport)	3.4	4.0	3.6	3.2	3.4
Public opinion	2.0	3.6	1.9	2.0	2.6
Average Score	2.5	3.8	2.5	2.4	2.8

Unfavourable=1, Somewhat unfavourable=2, Neutral=3, Somewhat favourable=4, Favourable=5. Purple highlights less than somewhat unfavourable. Green highlights more than somewhat favourable.

Pipeline Sector

- 56 survey participants from 31 companies indicated their company was active in the pipeline sector
- Respondents identified 25 separate provinces, countries and regions in which their companies were active including Alberta (50 of 56 respondents or 90 percent), the United States (63 percent), and British Columbia (57 percent)
- 20 percent of respondents were C-suite executives or board directors, with the remaining 80 percent in a position of management
- 73 percent of the respondents had over 10 years of experience in the energy sector
- Respondents held various professional designations, with roughly a third being professional engineers
- Respondents were most active in natural gas or crude oil transportation (80 percent) and storage (64 percent)
- Over 75 percent of the respondents were employed in a company with more than 1,000 employees

Table C19: Scope of Responsibilities in the Pipeline Sector

Q: Please indicate the primary scope of responsibilities that you have in your company.

Scope of Responsibilities	Respondents	Percentage
C-level	9	16%
Board Director	2	4%
Senior Management	21	38%
Middle Management	14	25%
Other	10	18%
Total	56	100%

Table C20: Years of Employment Experience in the Pipeline Sector

Q: Please indicate the number of years of employment experience you have in the energy sector.

Years Experience	Respondents	Percentage
> 30 years	15	27%
21 - 30 years	14	25%
11 - 20 years	12	21%
6 - 10 years	7	13%
< 5 years	8	14%
No Response	0	0%
Total	56	100%

Table C21: Professional Designations in the Pipeline Sector

Q: Do you currently hold, or have you held, any of the following professional designations?

Profession	Respondents	Percentage
Engineer	16	29%
Accountant	8	14%
Investment Manager	8	14%
Lawyer	7	13%
Inst. of Corporate Directors Designation or Chartered Dir.	1	2%
No Response	9	16%
Other	7	13%
Total	56	100%

Table C22: Company Size in Terms of Employment

Q: Please indicate the size of your company in terms of employment.

Employment Size	Respondents	Percentage
>= 1000 Employees	44	79%
250 to 999 Employees	2	4%
50 to 249 Employees	6	11%
10 to 49 Employees	2	4%
< 10 Employees	2	4%
Total	56	100%

Table C23: Pipeline Sectors Represented in the Survey

Q: Please indicate the specific pipeline sectors in which your company is active (select all that apply).

Sectors and Sub-Sectors	Respondents	Percentage
Respondents also Active in Electricity	28	50%
Respondents also Active in Oil	32	57%
Respondents also Active in Gas	39	70%
Transportation and Storage of Crude Oil	36	64%
Transportation and Storage of Natural Gas	45	80%
Transportation and Storage of Petroleum Products	24	43%
Other	4	7%
Total Respondents Active in Pipelines	56	100%

Table C24: Impact of Economic, Policy, and Social Factors on Pipeline Investment

Q: In your opinion, what is the current impact of the factors listed below on investment decisions for companies like yours?

Factor	Canada (44)	Mexico (6)	United States (15)	Alberta (26)	British Columbia (8)	Ontario (6)
Government energy policy (Provincial/State)	2.8	3.0	3.6	3.2	1.5	2.7
Government energy policy (Federal)	1.2	3.5	4.0	1.0	1.3	1.8
Regulatory frameworks and approval processes (Provincial/State)	2.4	3.4	3.4	2.8	2.0	2.0
Regulatory frameworks and approval processes (Federal)	1.1	3.5	3.8	1.0	1.0	1.5
Environmental standards and assessment processes (Provincial/State)	2.5	3.2	3.1	2.6	1.8	3.0
Environmental standards and assessment processes (Federal)	1.5	3.7	3.8	1.5	1.1	2.0
Corporate tax and royalty regime	3.0	3.5	4.4	3.0	2.9	3.0
Innovation/R&D support	3.0	2.6	3.6	2.9	3.3	3.0
Legal framework	2.5	3.2	3.0	2.5	2.1	3.0
Market price/regulated rate of energy product/service	3.1	3.5	3.9	3.0	2.6	3.4
Demand conditions for energy product/service	3.7	4.3	4.2	3.8	3.3	3.7
Natural resource availability	4.4	3.5	4.6	4.8	3.9	4.0
Cost & availability of financial capital (debt & equity)	3.1	3.7	4.4	3.3	2.8	3.6
Supplier, equipment and material costs and availability	3.4	3.5	4.2	3.7	3.0	3.0
Labour costs, availability, and skill sets	3.5	4.0	3.8	3.7	3.4	3.0
Land cost and availability	3.3	3.0	3.8	3.5	3.0	3.2
Quality of local infrastructure (e.g. roads, transport)	3.7	2.7	4.2	4.1	3.3	3.5
Public opinion	1.8	3.3	2.7	1.8	1.6	2.0
Average Score	2.7	3.4	3.8	2.8	2.5	2.8

Unfavourable=1, Somewhat unfavourable=2, Neutral=3, Somewhat favourable=4, Favourable=5. Purple highlights less than somewhat unfavourable. Green highlights more than somewhat favourable.

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