PETROLMI

LABOUR MARKET ANALYSIS AND INSIGHTS

WORKFORCE INSIGHTS

IMPACTS OF THE OIL AND GAS DOWNTURN ON THE FUTURE AND ATTITUDES OF WORKERS

SEPTEMBER 2017

Canada

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INTRODUCTION

Starting in the spring of 2017, PetroLMI undertook research to understand whether the downturn that began in late 2014 had brought about significant changes to the labour supply the oil and gas industry draws from. The research also attempted to gather insights into what has actually happened to the tens of thousands of Canadian workers impacted by the downturn.

This research was motivated by our recent findings of a potential shortage for some oil and gas occupations, including field personnel beginning in 2017 and consequent risks, if any, to the industry's sustainability and competitiveness.

The question we asked was: What is the risk the industry could again find itself competing for workers and engaging in bidding wars for key talent?

The recent challenges oil and gas service companies are experiencing attracting workers have already been well-documented by media and other sources. More recent consultations with industry have confirmed that for some service companies, equipment is sitting idle because the skilled workers who are required to operate it are not available.

To identify any labour force risks to the oil and gas industry, it is important to understand existing and potential gaps between the occupations, skills and knowledge industry requires compared to the available labour supply. This deeper understanding of the gaps provides a basis for proactive solutions that industry can undertake to avert a return to the talent bidding wars of the past.

Primary research for this study included consultations and surveys with over 900 individuals[1] representing:

- The upstream and midstream sectors of the industry; human resources experts to better understand recruitment and skills challenges, especially as they relate to the structural changes made by companies during the downturn to become more sustainable or competitive, and;
- Job seekers, students, post-secondary institutions, professional associations and employment and career transition agencies to understand whether the downturn has affected perceptions of a career in Canada's oil and gas industry.

Secondary research and analysis considered data available through Statistics Canada, industry publications and other PetroLMI research.

Labour Market Outlook 2017 to 2021 for Canada's Oil and Gas Industry report released in March 2017 projected hiring challenges for some occupations in a Modest Recovery scenario, including:

- Oil and gas drilling, servicing and related labourers, workers, operators and testers
- Supervisors and contractors, oil and gas drilling and services
- Managers in natural resources production, drilling and well servicing
- Inspectors in public and environmental health and safety
- Industrial electricians

A moderate increase in industry activity levels experienced in the first quarter of 2017 created labour shortages for some occupations. As activity levels continue to increase, labour supply/demand gaps could become more widespread, particularly in 2018 and 2019 due to two factors:

- The addition of jobs for specific occupations at a pace that is greater than the industry average.
- A shrinking labour force due to fewer new workers seeking employment in the industry, and experienced workers leaving for other industries.

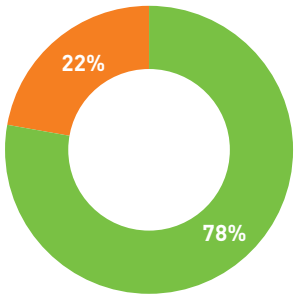
1 Refer to Acknowledgments section for list of industry and other stakeholder groups PetroLMI engaged in this research.

Spotlight: Overview Of Labour Supply Survey

The oil and gas labour supply research undertaken by PetroLMI for this project was the most in-depth to date. It included a survey of Canadians who have worked, are working or are considering a career in the oil and gas industry. The online survey was conducted for six weeks from May 26 to July 5, 2017. A total of 864 people responded, representing a cross-section of age groups and industry experience or career intentions.

The majority of respondents indicated Alberta as their current residence (77%) and there were more male than female respondents as shown in the pie chart below. Respondents were from all age groups and occupational backgrounds.

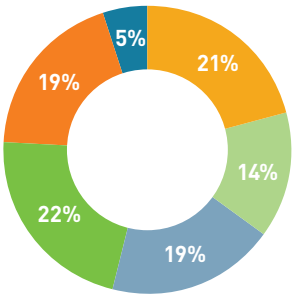
Gender



(n=864)

- Male
- Female

Age group



(n=864)

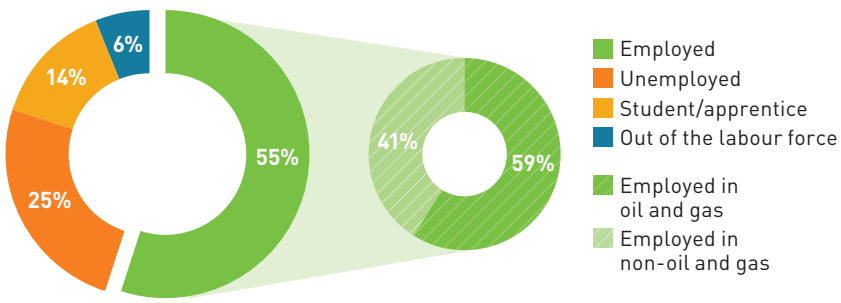
- 17–24 yrs
- 25–34 yrs
- 35–44 yrs
- 45–54 yrs
- 55–64 yrs
- 65+ yrs

Most of the respondents (70%) indicated their employment or career was impacted by the downturn.

In terms of occupations, engineering held the highest representation (29%), followed by technologists and technicians (23%), business and operations support (14%), field operations/services (13%), trades (8%) and geosciences (3%).

Out of the 454 respondents (55%) who reported they were currently working, almost 60% said they were working within the oil and gas industry. The remaining respondents were either unemployed (25%) or students/apprentices (14%). The remainder were out of the workforce due to retirement, temporary leaves, etc.

Current work status



(n=832) (n=454)

The complete questionnaire and summary responses for the survey entitled **Your Career Experiences, Plans and Expectations** can be found on page 16 in the Appendix.

RESEARCH HIGHLIGHTS

The research confirmed two key findings of PetroLMI's 2017 Labour Market Outlook report. Firstly, it is highly unlikely that Canada's oil and gas industry will rehire all of the workers downsized since late 2014. A second finding, seemingly contradictory to the first, was that some industry sectors are likely to experience difficulties securing the workers they will require with an uptick in activity. Mismatches are apparent between the skills oil and gas companies seek and those offered by the available labour force.

Canada's pool of potential oil and gas workers has shrunk.

The number of workers indicating they were unemployed and available for work in the oil and gas industry in the second quarter of 2017 was 26% fewer than in the second quarter of 2014. The pool of employed workers also declined by 21% from Q2 2014 to Q2 2017.

While the downturn has had a profound effect on the size of the industry's workforce, a skills mismatch is the industry's greatest risk in the short-term.

While there are large numbers of highly specialized, educated and skilled workers available, oil and gas service companies are having difficulties attracting workers back to their sector. This lack of available field personnel, skilled and semi-skilled workers, poses a risk to the overall industry. With skilled workers who operate equipment not available, the industry could be faced with lower operational efficiencies and some cost escalation – a growing concern as Canada's oil and gas industry tries to compete in a global market amid lower oil prices

Interventions are needed to assist unemployed workers to shift away from specialized oil and gas occupations, including engineering, geosciences and those who support capital projects and business staff, roles that were once critical to exploration and expansion-related activities.

Going forward, the oil and gas industry is not expected to staff these occupations at previous levels due to decreased investment and activity, a focus on developing the most productive and profitable oil and gas basins rather than exploring for new reserves and, productivity advancements that require fewer workers to grow oil and gas production. The level of intervention required to support career transition and achieve re-employment for many of these downsized oil and gas workers may be considerably more than what has been offered in the past.

There is limited understanding and discussion about how the industry's transformation is influencing its current and future career opportunities.

Oil and gas companies are just beginning to acknowledge and assess the implications that technology and other productivity enhancements, including continued process improvements, will have on occupational and skills requirements.

The narrative regarding the current and future state of industry is creating uncertainty about its viability among potential workers and new entrants.

In order to reposition the industry's outlook, there is a need to better understand how industry's structural shifts will impact future occupation and skills requirements, and to share this information with job seekers and career decision-makers.

Industry competitiveness and sustainability is once again at risk of stalling if it is unable to attract and retain the best talent. This report explores the causes, risks and provides insights and suggestions for potential solutions.

INSIGHTS INTO CANADA'S OIL & GAS LABOUR FORCE

Canada's pool of potential oil and gas workers has shrunk

The oil and gas labour force is comprised of workers aged 15 and over who are either employed or are unemployed but ready and available for work in the industry. The pool of workers indicating they were unemployed and available for work in the second quarter of 2017 was down 26% from the second quarter of 2014. The pool of employed oil and gas workers declined by 21% between Q2 2014 and Q2 2017. Given the length and depth of the downturn, it is no surprise that workers have left the industry. Nor, is a smaller labour force in and of itself problematic to industry given that it can increase production with fewer workers due to the implementation of technology and process improvements.

Oil and gas labour force Q2 2014 – Q2 2017

Source: Statistics Canada Labour Force Survey, as reported in PetroLMI Canada's Oil and Gas Employment and Labour Market Data Q2 2017, July 2017

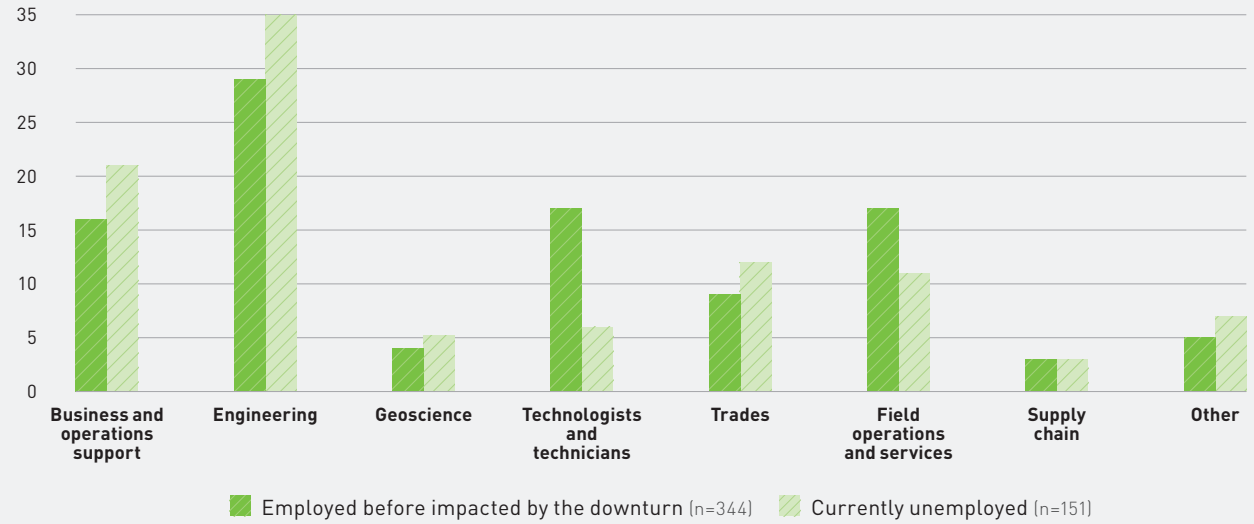
Skills mismatch is the industry's greatest risk in the short-term

Indications are the skills of those who are unemployed and available for work are not a match for the skills in greatest demand by the oil and gas industry. Current labour demand is primarily for field personnel and other skilled and semi-skilled workers within oil and gas services and, in particular, drilling and completions-related activities. At the same time, the labour supply survey[2] conducted by PetroLMI as well as the qualitative research indicates that many of the industry's unemployed workers tend to have been in specialized occupations such as business and operations support, engineering, geosciences and trades. These unemployed workers reported they last worked in the areas of exploration and production (E&P) or the oil sands sectors, and not the occupations currently in-demand. Consultations with E&P and oil sands companies confirm that they continue to closely scrutinize decisions to fill vacancies due to retirements or other turnover, and expect to continue this practice for the foreseeable future.

The chart on the following page illustrates that PetroLMI's survey of 864 respondents found a higher percentage of unemployment among respondents who indicated their last employment before the downturn was in business and operations support, engineering, geoscience and trades occupations.

2 The information gathered through PetroLMI's labour supply survey results is qualitative and not a statistical representation of Canada's oil and gas labour force. Rather, survey responses are indicators of potential labour force trends further validated through consultations with industry and labour supply stakeholders.

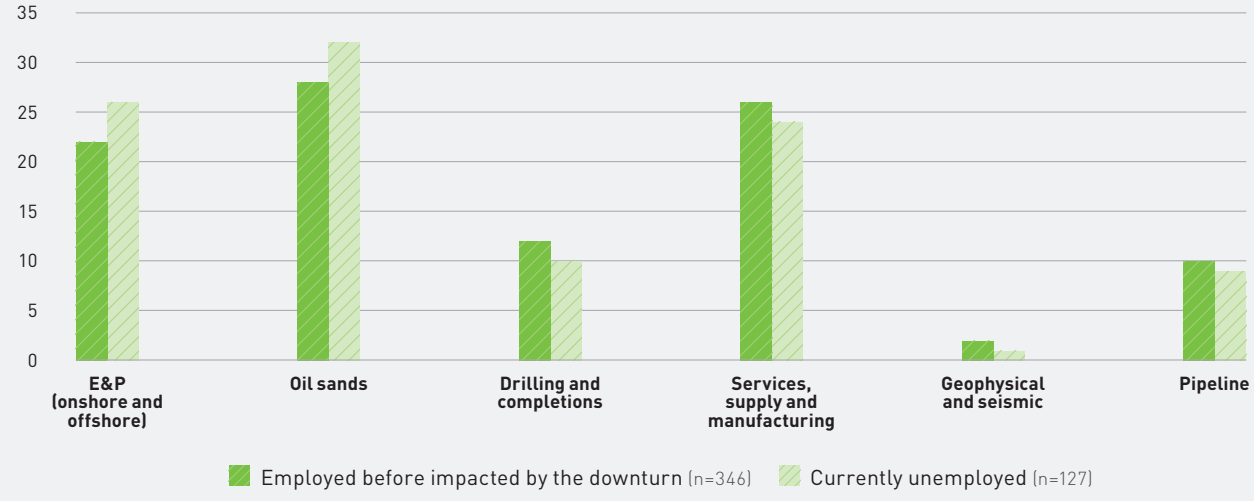
Survey respondents previously employed in oil and gas before impacted by the downturn, by job category



Filtered based on respondents who worked in oil and gas before they were impacted by the downturn, followed by an additional filter on those who indicated they were unemployed but looking for work at the time of the survey (Q6). Comparative analysis was conducted based on these respondents answer to Q26: "Which job category did your previous role/work fall under?"

A higher proportion of respondents who worked in the E&P (onshore and offshore) and oil sands sectors before the downturn remain unemployed as of the survey period as compared to respondents from other oil and gas sub-sectors.

Survey respondents previously employed in oil and gas before impacted by the downturn, by oil and gas subsector



Filtered based on those who indicated working in oil and gas before they were impacted by the downturn followed by an additional filter on those who indicated they were unemployed but looking for work at the time of the survey (Q6). Comparative analysis was conducted based on these respondents answer to Q28: "Which oil and gas sector did you work in before you retired or were impacted by the downturn?"

This analysis supports key findings in PetroLMI's most recent Labour Market Outlook 2017 to 2021 for Canada's Oil and Gas Industry report that E&P employment is not expected to recover to 2014 levels in the short-term, and, that since many E&P occupations do not easily transfer into other industries, a surplus of talent is likely to materialize. Further still, any increases in oil sands operations jobs are expected to be offset by the loss of capital-related jobs as major projects under construction prior to the downturn move into operation in 2017.

Skill shortages in the oil and gas service sector impacts the overall industry

A lack of field personnel and other skilled and semi-skilled workers is not only a risk to the oil and gas services sector but is a risk to the overall industry. These are the workers who are on the ground and closest to production. Prior to the end of 2014, when oil prices and profit margins were higher, oil and gas service companies were able to attract workers from across Canada by offering well-paying rotational work arrangements along with coverage for travel and accommodation expenses.

According to the most current data available, in 2012 Alberta's oil and gas industry employed more than 14,500 workers from outside of Alberta.[3] As industry activity picks up, more than 80% of oil and gas employer survey respondents indicated they will focus their hiring on local and regional labour supply, as managing or reducing labour costs remains a high priority. A rotational workforce is costly and this talent strategy is less feasible in today's environment.

Difficulties attracting and retaining in-demand oil and gas service personnel means there is less experience in the field and fewer crews than are required to deploy available equipment and meet the demands on service companies for contracted services. The industry could be faced with lower operational efficiencies and some cost escalation – a growing concern as Canada's oil and gas industry competes in a global market amid lower oil prices.

"The recent increase in activity levels has been a positive sign for the industry, however, shortages of skilled labour is beginning to impair the industry's ability to respond to increased activity."

— **High Arctic Energy Services Inc.,** 2017 2nd Quarter Media Release

"Our customers want us to take on more work. While we have the equipment for the increased work, we are constrained by our ability to supply the labour to do the work."

— **Todd den Engelsen,** President, Trojan Safety

MORE THAN

80%

of oil and gas employer survey respondents indicated they will focus their hiring on **local and regional labour supply**

3 Interprovincial Employees in Alberta: Industrial Profile by Major Region of Origin. Government of Alberta, Treasury Board and Finance, Office of Statistics and Information. March 28, 2017

Where have the oil and gas workers gone?

Over the same time period that Canada's oil and gas industry lost 21% of its labour force, Canada's overall labour force, excluding oil and gas, increased by 6%. The prolonged downturn in the oil and gas industry forced many workers to leave the industry's labour force and seek employment elsewhere.

Of the 366 respondents who indicated their employment was impacted directly by the downturn in the oil and gas industry, 20% indicated they left the oil and gas labour force to work in other industries. A total of 40% continue to work in the industry and the remaining 40% are unemployed and looking for work.

An analysis of the data suggests that oil and gas workers who transitioned out of the industry are now employed across a broad range of industries. Half of those who transitioned out of the industry since the downturn are employed in construction, government or transportation. Some respondents commented that they have been forced to take "survival jobs."

Many oil and gas service companies currently hiring are finding that former workers who have found employment outside of the industry are not interested in returning. Anecdotally, hiring companies are hearing that while many of these workers may have had to adjust their lifestyles to include lower compensation, they believe they are currently in a work situation that offers greater stability and the opportunity to work closer to home. This group is likely to be composed of workers whose skills and experience are easily transferable into other sectors.

However, there does still remain an opportunity to attract some workers back who have taken stop gap work outside the oil and gas industry and may not require significant levels of retraining given the unskilled and semi-skilled nature of the work. Data in this report that estimates the size of the oil and gas labour force, both employed and unemployed, does not include those that are employed in other industries. Based on responses to the labour supply survey, the construction and transportation sectors may prove to be a labour supply source for oil and gas service companies.

Change in labour force
Q2 2014 and Q2 2017

Canadian labour force (excluding oil and gas)
19.8M as of Q2 2017

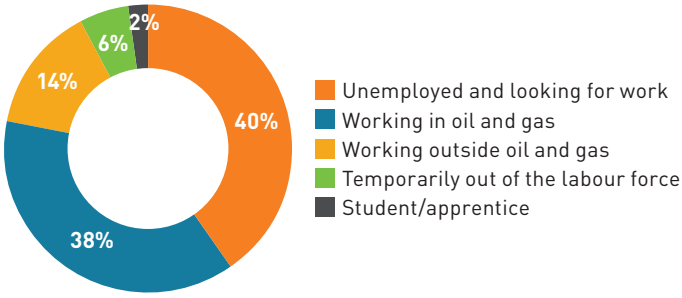
+6%
(+100,050)

-21%
(-47,400)

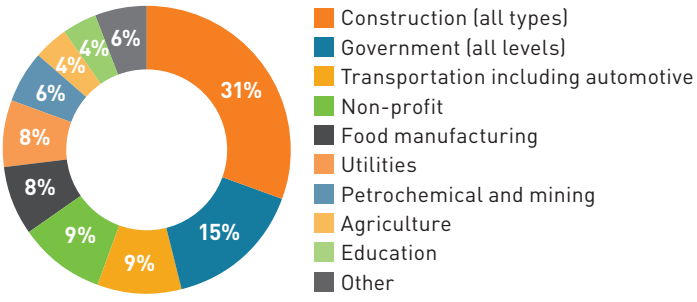
Oil and gas labour force
181.8K as of Q2 2017

Source: Statistics Canada Labour Force Survey, seasonally unadjusted. Employed + unemployed = labour force.

Current employment situation after being impacted by the downturn (n=389)



Impacted by the downturn and currently working outside of the oil and gas industry (n=52)



Interventions are needed to assist unemployed workers transition from specialized oil and gas occupations

Highly skilled, educated and experienced, yet, unemployed oil and gas workers understand the significant employment barriers they face. These are the unemployed workers most in need of interventions to support their transition into new careers and/or new ways of working. Over three quarters (76%) of the unemployed oil and gas workers responding to the survey indicated that "too much competition for too few jobs" was a barrier to securing employment, while 36% identified they were over-qualified for the jobs available.

The majority of unemployed oil and gas workers (74%) indicated their preference was to pursue full-time employment. 70% indicated they were looking for work in "any industry" while 27% were focused solely on the oil and gas industry. The remaining 3% were concentrating their job search outside of oil and gas.

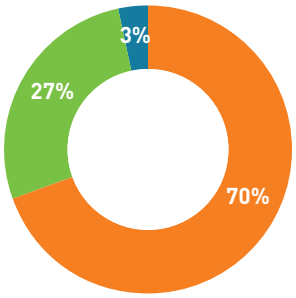
Given the specialized experience of many of these unemployed oil and gas workers, and limited full-time industry opportunities, the option to transition to another industry or vocation is a challenging consideration. These workers tend to be an older demographic and have been out of work for over a year, many for over two years. Transitioning these workers will require significant levels of support to broaden their skills and will likely involve retraining.

"Intervention is needed to create a market for oil and gas workers in other sectors and mitigate barriers to cross-sectoral transition. The case needs to be made as to why you should hire a geologist."

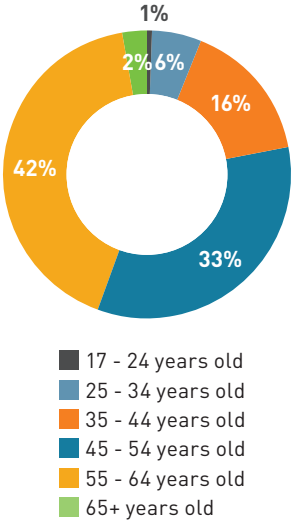
— Jackie Rafter
Founder, President & CEO,
Higher Landing Inc.

UNEMPLOYED OIL AND GAS WORKERS

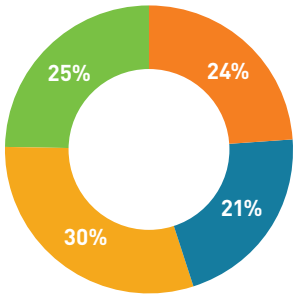
Focus of job search (n=151)



Age group (n=158)



Length of unemployment (n=146)



Efforts will also be required to market the value and potential contribution of these workers to other industries. About 34% of survey respondents believed that other industries are not willing to consider hiring workers recently employed in the oil and gas industry. While these transitions are difficult to make, once made these workers are unlikely to return to the oil and gas industry if the opportunity presents itself. Reasons suggested by interviewees include: their specialized oil and gas skills will become outdated and there is considerable amount of effort to move to a different industry and start a new career. The combined effect makes it less likely they will return to a sector that has been so disruptive to their careers.

Another consideration for workers with significant expertise in a specialized area of oil and gas is to stay in the industry, but work differently. About 53% of surveyed unemployed oil and gas workers said they would consider a temporary position or contract role to remain in oil and gas.

There is limited understanding and discussion of how the industry's transformation is influencing its current and future career opportunities

Lower for longer oil prices coupled with the application of new technologies that have increased industry's ability to tap into previously unavailable oil and gas reserves have fundamentally shifted the supply/demand balance.

The oil and gas industry has shifted its focus to developing only the most efficient resource plays and on tightly managing costs, including those associated with labour and contracted services. To support these priorities, the industry has undergone a transformation, driven by new technologies and process improvements, and more significantly, through downsizing its workforce.

Consultations with oil and gas company representatives confirm they are just beginning to acknowledge and assess the implications that technology and productivity enhancements, including continued process improvements, will have on their occupation and skills requirements. These are expected to include:

- Continued focus on efficiency-enhancing technologies and practices, including drilling and extraction innovations, automation, supervisory control and data acquisition (SCADA) remote monitoring, increased use of remote operations, information technology and analytics, and predictive maintenance and operations reliability improvements.[4]
- Improving productivity of highly skilled people. The oil sands and E&P sub-sectors will require highly specialized technical and scientific labour to drive innovation in technology and processes.[5] This will pose challenges for industry as achieving productivity enhancements in high-skilled labour is very different from improving low-skilled labour productivity where mechanization and training tends to be the answer.
- New regulations such as methane emissions reduction and enhanced pipeline emergency response requirements.
- Innovation to turn industry's environmental liabilities into assets in a lower carbon economy, including carbon capture and storage.
- Orphan well funding that will help to clean up abandoned well inventories and stabilize activity levels for some oil and gas services in Alberta.

Due to the shifts Canada's industry has undertaken to improve efficiencies and competitiveness there is an expectation that, over time, there will be an increase in the number of occupations and skills that will be required to effectively set up, install, operate and maintain new technologies. These occupations and skills have not been adequately identified, quantified or promoted leaving career decision-makers and job seekers to source information on "next-gen" careers on their own.

Industry's talent sources, including currently employed oil and gas workers, question the viability of a career in the industry.

While a number of workers are still attracted to the oil and gas industry there is growing concern that the current narrative regarding the challenges to the industry's ongoing competitiveness, a worsening investment climate and the potential use of technology to automate and "unman" operations are leading many to question whether a long-term career in the industry is sustainable.

"We're not all talking about "smart oil" in the same way and there's still a disconnect in the conversations of technical engineers in oil and gas and technology companies."

— Bill Whitelaw
President & CEO, JWN

4 PetroLMI Labour Productivity in Canada's Oil and Gas Industry: A Discussion of Historical Trends and Future Implications. September 2017
5 PetroLMI Labour Productivity in Canada's Oil and Gas Industry: A Discussion of Historical Trends and Future Implications. September 2017

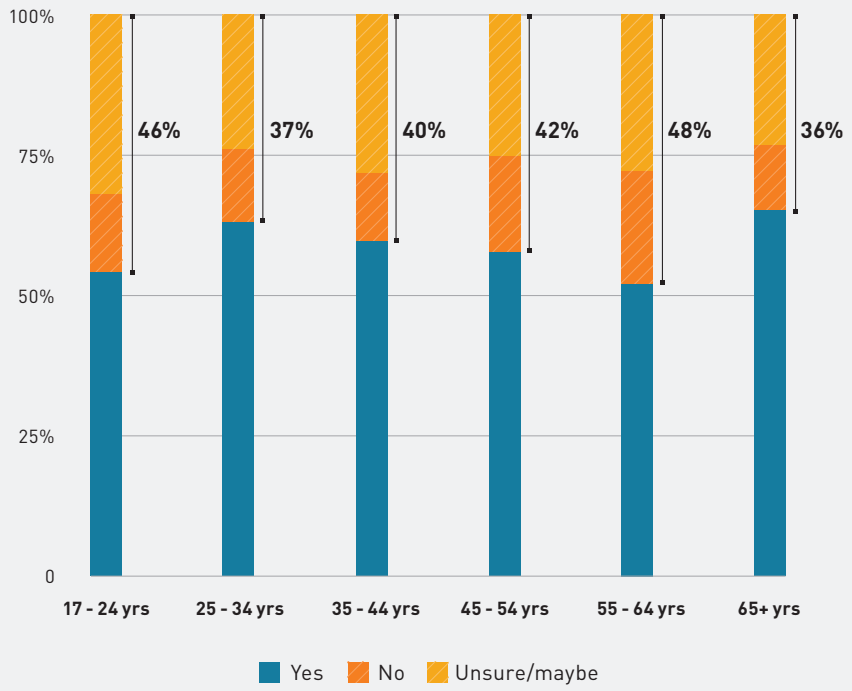
About 7% of the labour supply survey respondents impacted by the downturn indicated they were no longer interested in, or are planning to work in the oil and gas industry. A much higher percentage of the respondents (43%) expressed doubt about the viability of the oil and gas industry as a career option. Consultations with career transition practitioners and their clients laid off from the oil and gas industry indicated they routinely research how to transition to other sectors. This uncertainty was evident across all age groups.

ABOUT

7%

of survey respondents impacted by the downturn indicated they were **no longer interested in, or are planning to work in the oil and gas industry.**

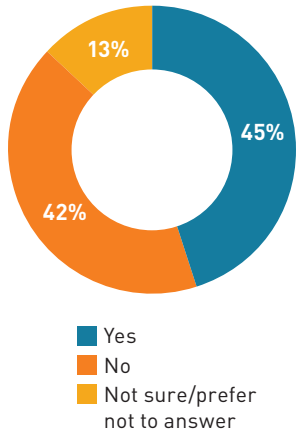
"Do you see the oil and gas industry as a viable career option?" (n=832)



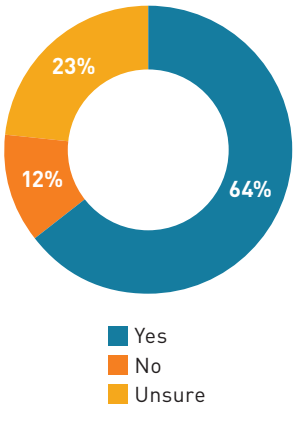
While a number of survey respondents currently working in the industry indicated they still enjoy their careers in oil and gas, many lack confidence in their ability to maintain oil and gas careers. About 45% indicated they believed they were at risk of being laid off and 35% were unsure whether they would stay in the industry. Instability and uncertainty were cited as the primary reasons for considering leaving the industry. Of those who indicated they intend to stay in the industry the primary reason cited was they were close to retirement.

The oil and gas industry, like other industries, depends on its employees to be ambassadors and to spread the word to future talent. A significant portion of the current oil and gas workforce survey respondents indicated they lack confidence in the long-term career potential of the industry. One conclusion from this is, many of the industry's greatest advocates are unlikely to promote the industry and its careers opportunities.

"Do you feel your (oil and gas) job is at risk?" (n=258)



"Do you intend to stay in the oil and gas industry?" (n=254)

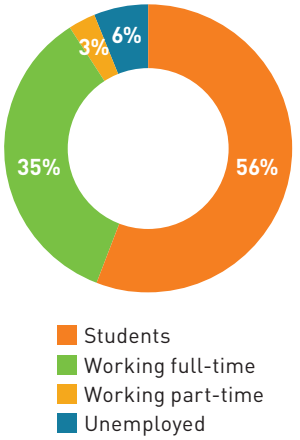


Youth labour force entrants question long-term sustainability of an oil and gas career

Of the 178 survey respondents between the ages of 17 and 24 years, 35% were working full-time with 60% of this group working in the oil and gas industry. The majority of those in oil and gas identified their occupation as engineering (59%), followed by business and operations support (17%), technologists and technicians (17%), field operations and services (2%) and geoscience (2%).

Respondents in this age category had similar views on the viability of an oil and gas career regardless of their industry of employment. About 55% of the respondents did view the industry as a viable career option with opportunity for career development. Much of it is based on the view there is a long-term requirement for fossil fuels and the industry's ability to innovate to address challenges. However, the remaining 45% questioned the long-term sustainability of the oil and gas industry, in part due to the instability of oil prices and an ongoing shift to renewables.

Current employment status among 17 - 24 years old survey respondents (n=178)



Will oil and gas careers appeal to new labour force entrants in the future?

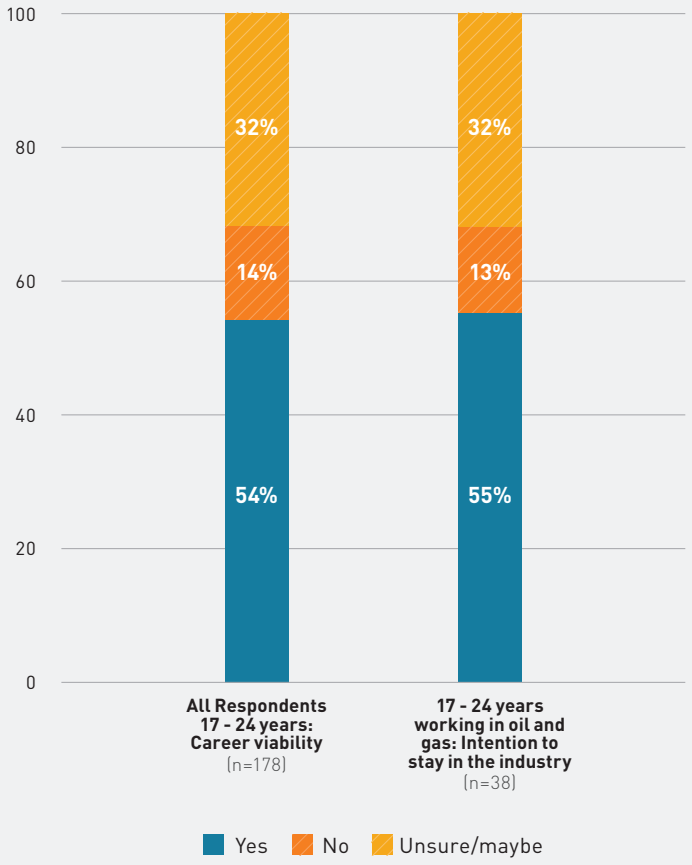
A recent study by Ernst & Young (EY) provides some interesting insight into how youth more broadly view the oil and gas industry.

EY's 2017 study summarized in a recent CNN article surveyed 1,200 young Americans ages 16 to 35 years. The research found that 62% of the under-20 age group said a career in oil and gas was unappealing or very unappealing. Two-thirds of those polled said that a job working in green energy sounds appealing.

The study also revealed a significant gender gap with a greater percentage of young men finding oil and gas more appealing than women – 54% versus 24% respectively.

EY's findings suggest that environmental challenges and the boom-to-bust nature of the industry have created negative perceptions, making it more difficult to attract talent in the future.

Career viability and intention to stay in the oil and gas industry: 17 – 24 year olds

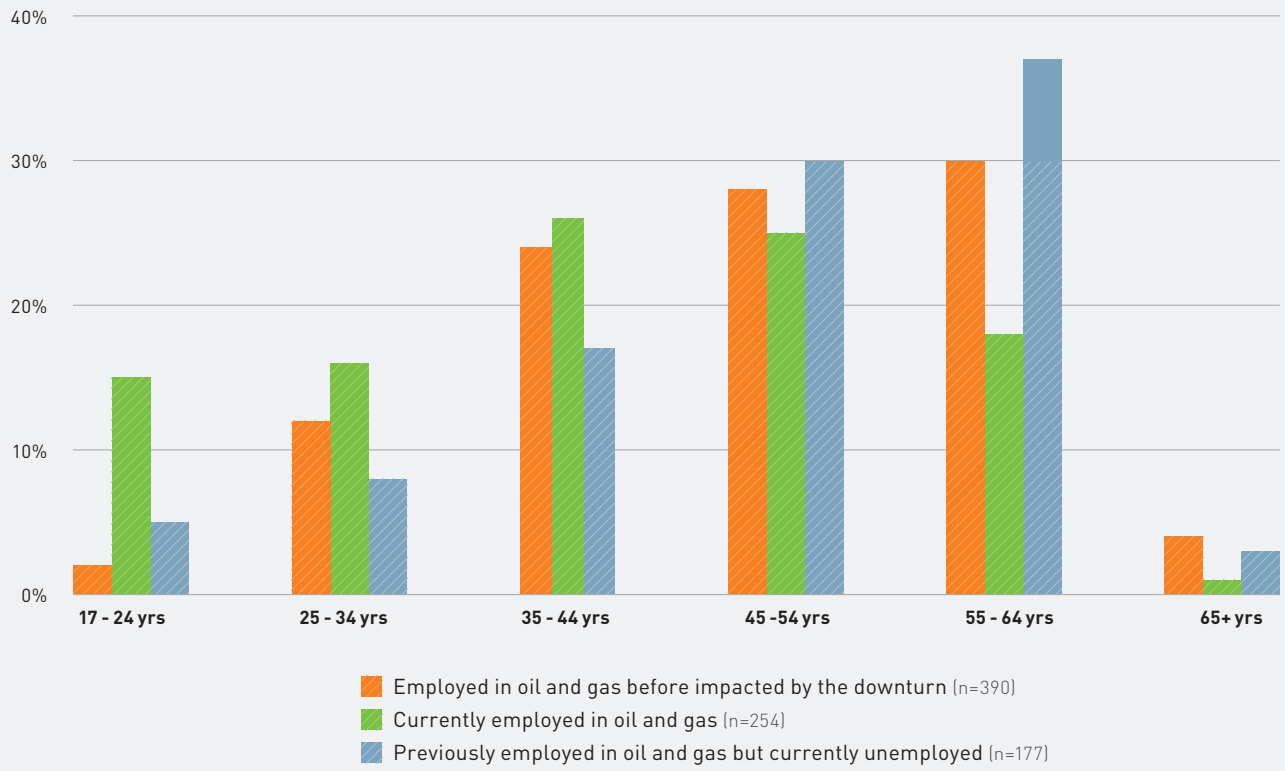


Despite a considerable level of uncertainty among youth regarding the viability and sustainability of the oil and gas industry, there is evidence that this age group weathered the downturn better than some older age groups. Potential factors contributing to their relative success could be that demand in the oil and gas services sector provides more job opportunities for this age group and that all sectors of the industry continue to be committed to maintaining a pipeline of new talent by hiring new grads, providing internships and offering entry-level opportunities. While the "talent pipeline" investment is reduced, many companies have not abandoned this recruitment strategy completely.

"Our senior leaders continue to build the talent pipeline at the earliest possibility – resulting in ongoing commitment to our summer intern and new graduate programs."

— **Kimberly Border**
Manager, Development, Encana

Oil and gas employment status by age group



Potential risk to supply of new engineering graduates

Engineering was the one discipline with survey respondents from students to provide specific insights. Engineering students expressed their greatest concern is the ability to find a job in their field following the completion of their education.

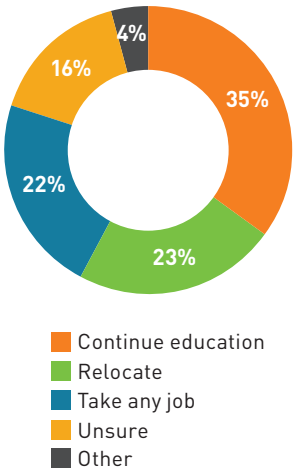
When asked what they would do if they are unable to find work in their field, the majority appeared motivated to stay within the engineering field either by continuing their education or relocating for work.

A potential risk for the oil and gas industry is that 35% of the engineering students participating in the survey indicated they are no longer planning to work, or are interested in, the oil and gas industry as a result of their experience during the downturn. Consultations with post-secondary institutions indicated engineering students are showing interest in biomedical, renewables, water, utilities and technology development.

A shortage of job opportunities for new graduating engineers presents a significant labour supply risk to the oil and gas industry as they play a key role in developing technical talent and succession planning.

Engineering students: what will you do if unable to find work in your field?

(n=107)



Some post-secondary institutions are moving away from petroleum-specific programming

Post-secondary education institutions have begun to look for ways to deliver graduates with skills that are transferable across broader industry sectors rather than delivering petroleum-specific programs. In consultations post-secondary representatives indicated they are developing more integrated programs as well as increasing business-related programming in response to the shifts in demand. Examples include: programming to incorporate the full energy industry, both renewable and non-renewables; combining IT with instrumentation; building cross-disciplinary and connected labs; introducing mechatronics programs which combine electronics and mechanical engineering; adding courses to respond to digitization trends; and, offering more courses such as business and project management to help students increase their employability.

Ultimately, the oil and gas industry may find greater competition from other industries for these engineering graduates who have had integrated training and now have a broader range of career options.

THE CASE FOR TAKING ACTION

There are potential risks to a healthy labour supply pool for Canada's oil and gas industry, as well as other workforce challenges as employers restructure in response to the industry downturn.

None of the industry's regular talent sources are exempt from questioning the viability of a long-term career in oil and gas. New graduates, unemployed experienced workers and even current oil and gas employees are questioning the sustainability of a career in the industry.

Equally concerning is those interested in pursuing a career in a transformed industry are not aware of what it will take to be successful. Industry consultations confirm that the identification of occupations and skills required to implement the process improvements and technological solutions underway or under consideration is only just beginning.

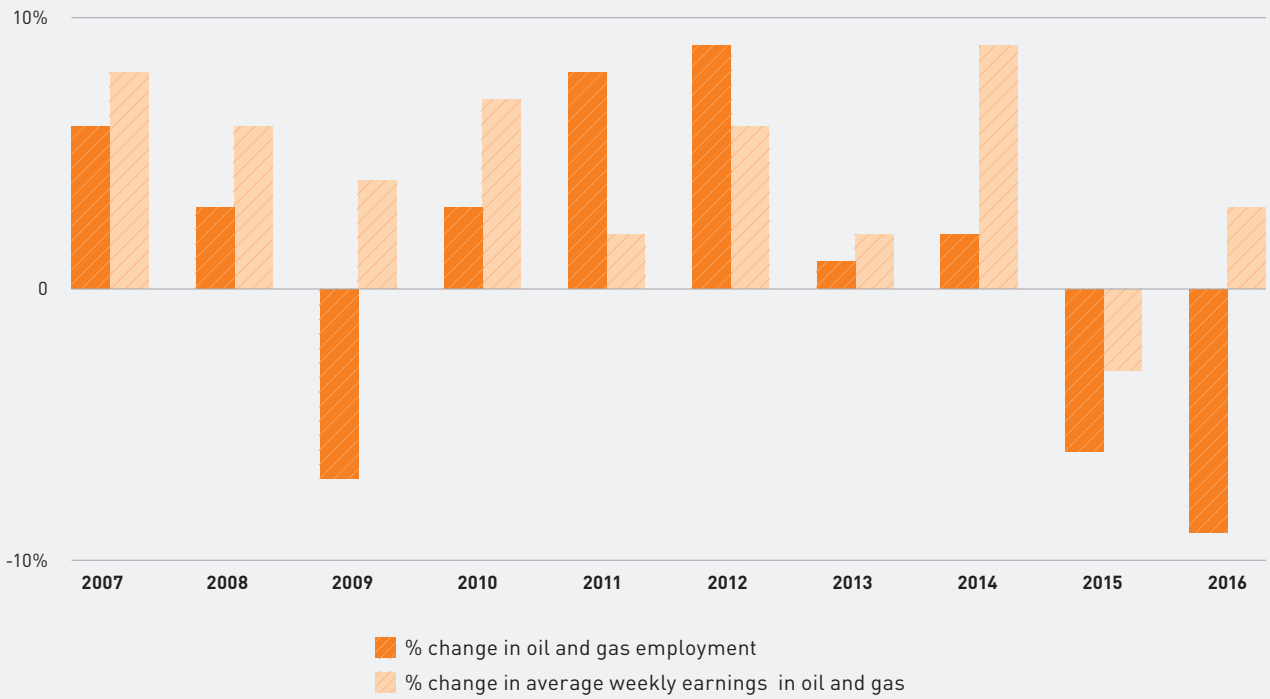
A serious and present risk is the industry's ability to attract the workforce it will require and retain the workers it currently employs.

As the industry continues to manage a longer-term low oil price, the focus will be on developing the most efficient resource plays and tightly managing costs. The oil and gas industry has a history of relying heavily on compensation to attract and retain workers. The chart below illustrates the average weekly earnings of oil and gas workers continued to increase during the 2008-2009 downturn despite employment losses.

While average weekly earnings for oil and gas workers declined in 2015 during the downturn, they rose in 2016, alongside a further decline in employment levels. The cost savings incurred by companies in 2016 appear to have been driven by the volume of layoffs, not necessarily due to management of compensation levels for those remaining in the industry.

Compensation is only one factor today's talent pool is taking into consideration when making employment choices. Work/life balance, career development and job security also ranked as highly important, among survey respondents. This is a marked change from years past.

Changes to average weekly earnings of oil and gas workers vs employment



Source: Statistics Canada CANSIM 282-0008 and 281-0024

Opportunities for action

When the oil and gas labour market tightened during heightened activity in 2012-2014, oil and gas companies realized tangible benefits by collaborating with post-secondary institutions, labour supply stakeholder groups, industry associations, governments and each other to find solutions for skill and labour shortages.

Today, as industry cautiously adds back investment and activity levels begin to pick up, the need to be proactive and work together is re-emerging with the threat of competition for talent. The following are suggested actions:

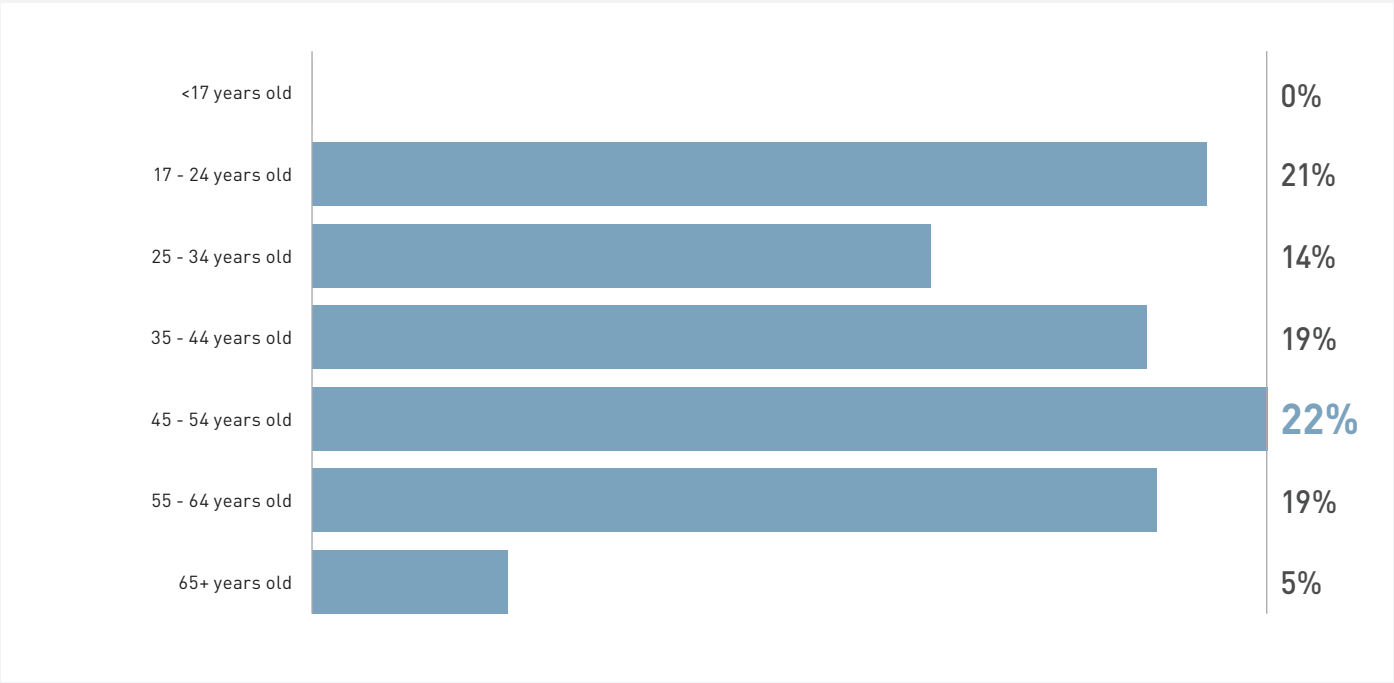
- The opportunity is ripe to revisit collaborative efforts utilized in the past to address workforce challenges before they hinder industry's sustainability and competitiveness.
- Re-frame careers and occupational demand. Describe and define today's oil and gas occupations both qualitatively and quantitatively.
    - Depict what is meant by "next-gen" careers that include an emphasis on environmental, safety and technical elements as well as broader "business strategy relevant" skill requirements
    - Determine labour demand requirements through improved labour market information
- Continue to measure and understand the size and nature of labour supply for the oil and gas industry.
- Communicate more broadly how technology and process improvements are shaping future skill requirements and how this will make oil and gas industry careers attractive.
- Communicate the industry's value proposition in a way that best addresses potential workers' needs for work/life balance, career development and job security.
- Shift the industry narrative from one which conveys a lack of stability and competitiveness to an industry that is viable and changing with the times.
- Grow local talent pool capacity in oil and gas operating areas and provide pathways back into industry. Provide information on training certificates and the aptitudes and skills needed for entry to mid-level jobs.
- Launch broad career and sectoral transition initiatives for the highly specialized oil and gas workers whose jobs are unlikely to return to the industry.

APPENDIX: YOUR CAREER EXPERIENCES, PLANS AND EXPECTATIONS SURVEY

Below are the questions and answers for the labour supply survey conducted over a six-week period from May 26 to July 5, 2017. There were 864 respondents, however not all questions were mandatory nor asked of all survey participants and some questions were open-ended, so responses have been consolidated appropriately. In addition, if a question didn't receive enough responses to be statistically sound, it was not included in the summary below. Percentages provided may not add up to a hundred percent due to rounding.

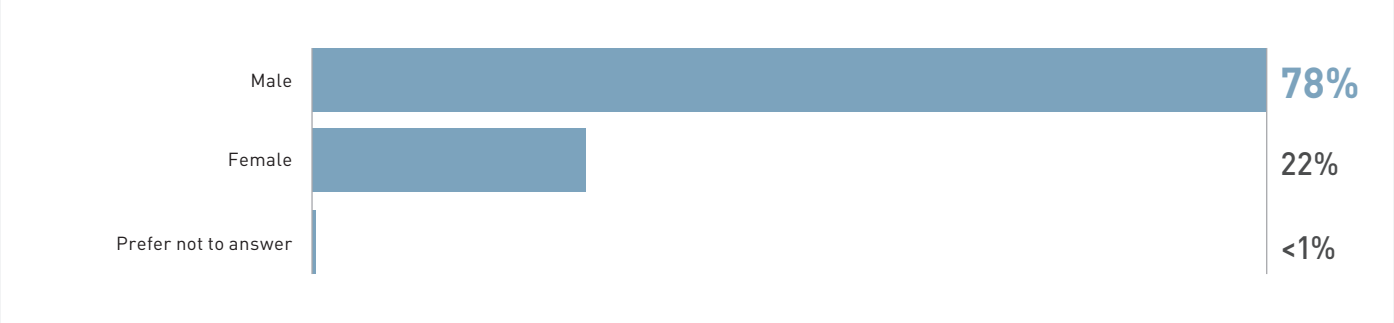
Q1

What is your age? Please select the age group you belong to. (n=864)



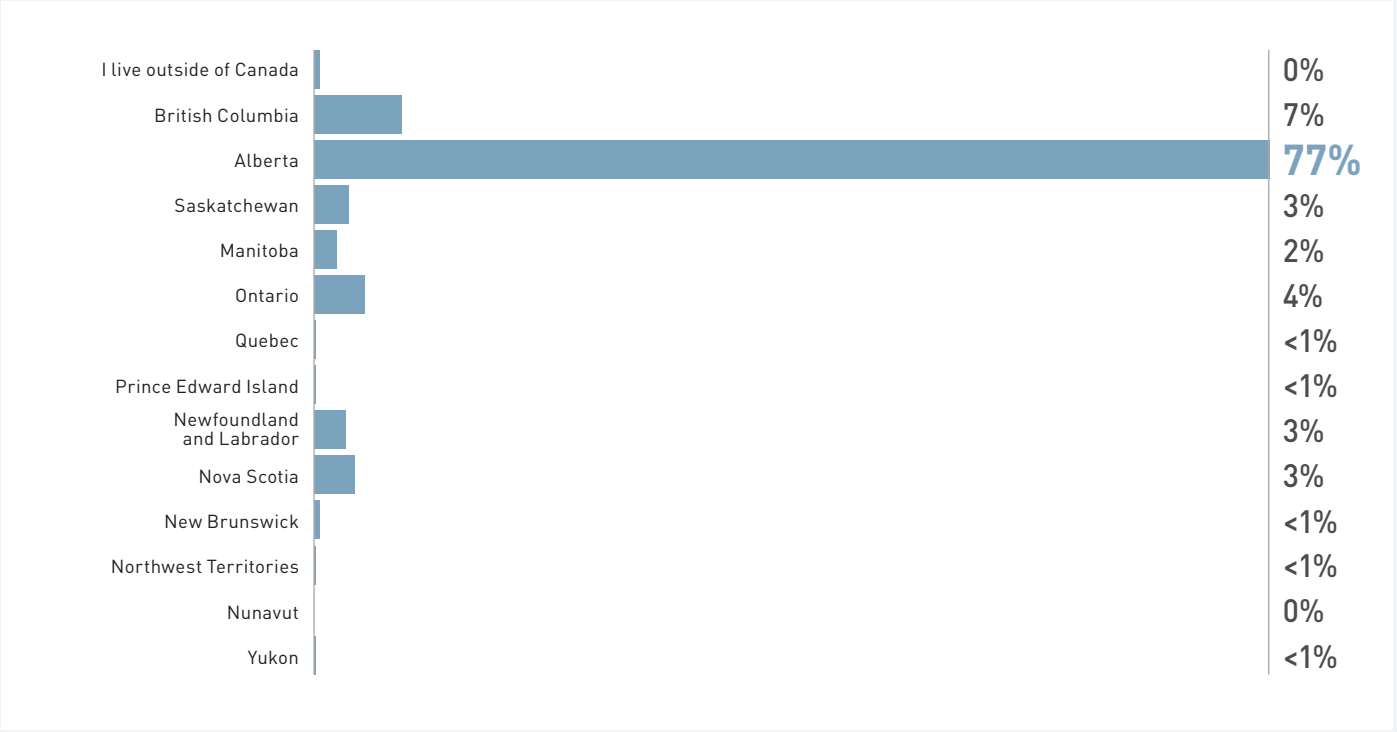
Q2

Gender (n=864)



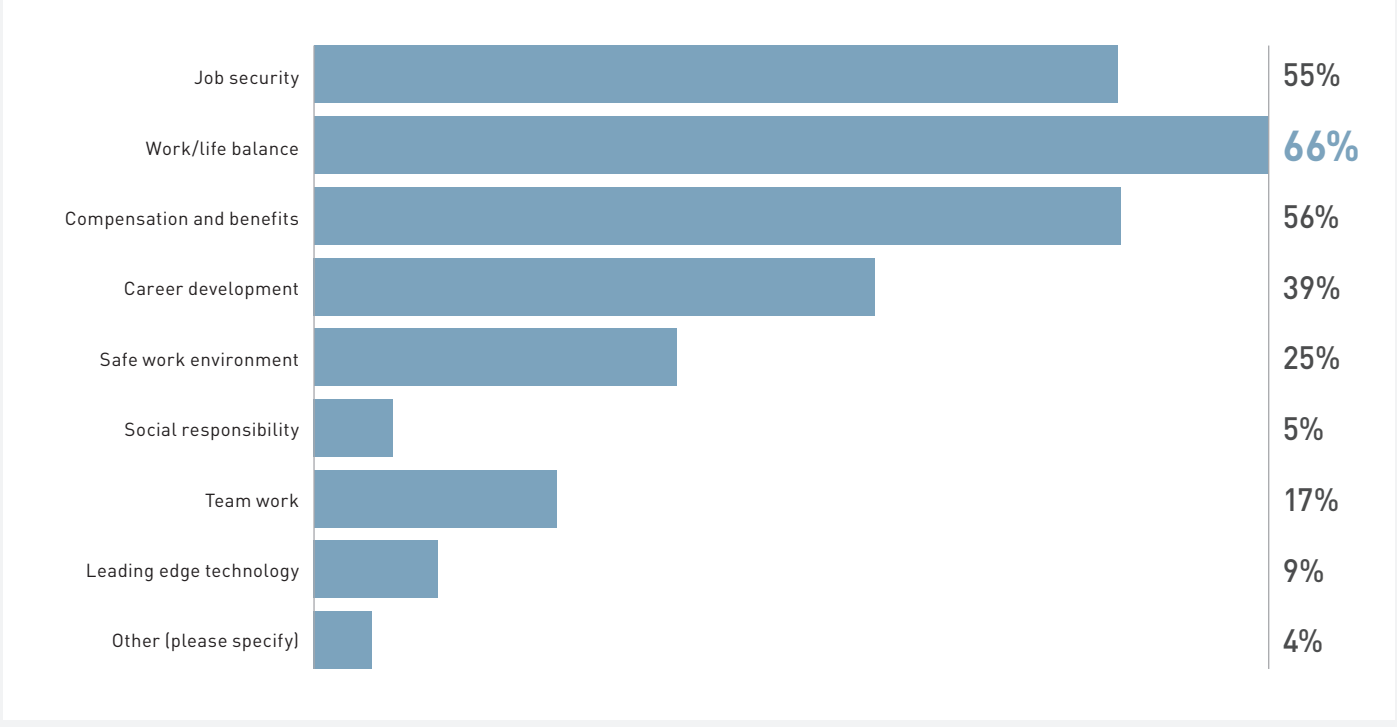
Q3

Which province or territory in Canada do you currently reside in? (n=864)



Q4

What work/career characteristics are most important to you? Select the top three. (n=832)

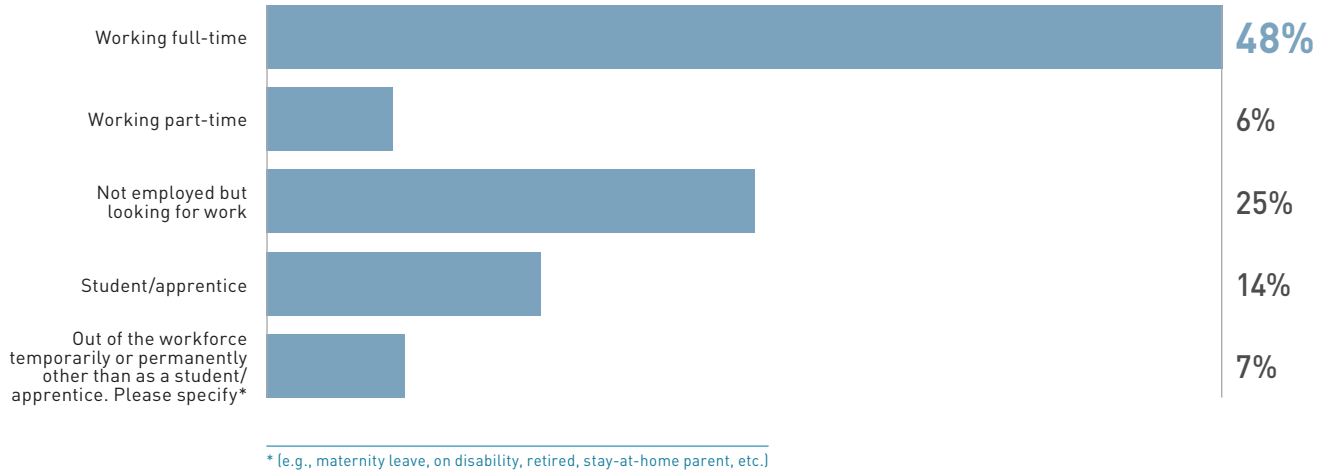


Q5

Do you see the oil and gas industry as a viable career option? (n=832)

Q6

Which of the following categories best describes your current employment status? (n=832)

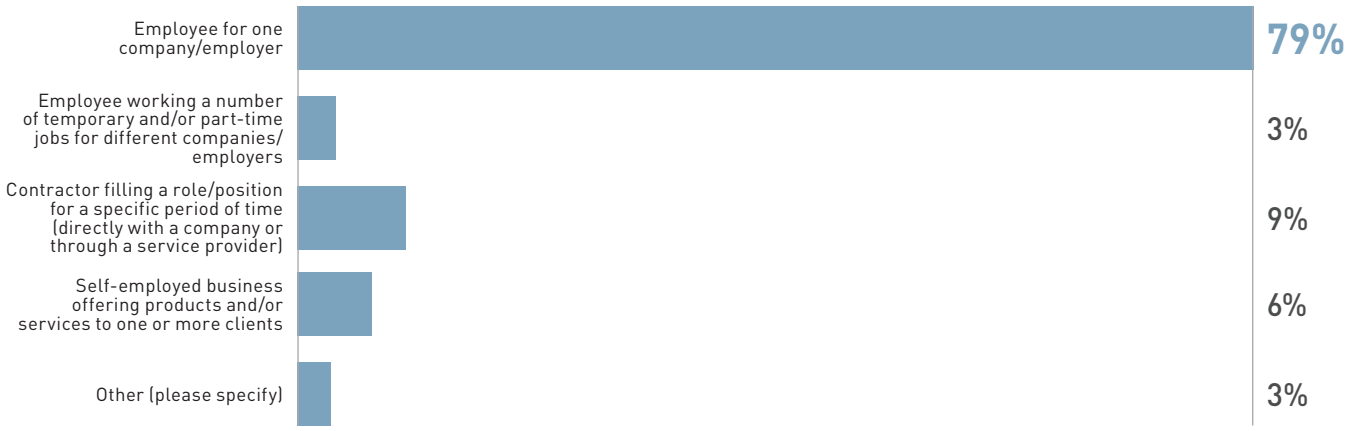


* (e.g., maternity leave, on disability, retired, stay-at-home parent, etc.)

Q7

What is your current work arrangement?

Based on those who are currently working full-time or part-time, as per Q6 (n=437)



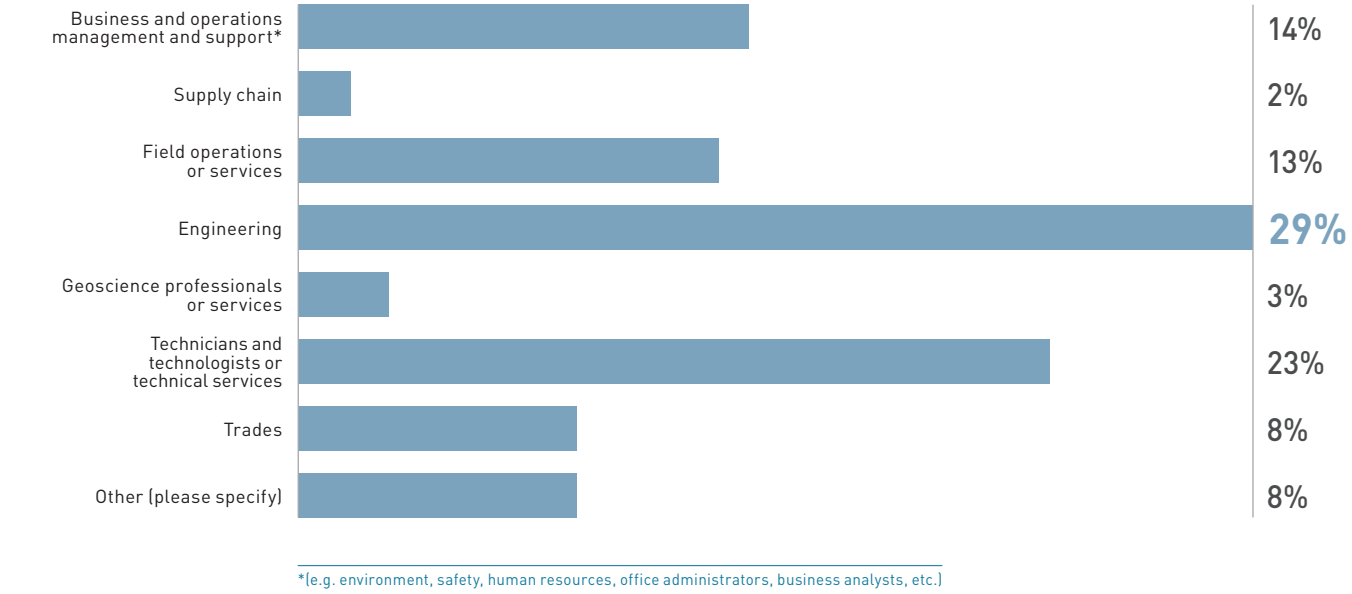
Q8: What is your current role/occupation? If self-employed, please specify the nature of your business.

(the information for this question is not included as it was open-ended)

Q9

Which of the following categories does your role/work fall under? Select the one that best applies to you.

Based on those who are currently working full-time or part-time, as per Q6 (n=436)



*(e.g. environment, safety, human resources, office administrators, business analysts, etc.)

Q10

Do you feel your job/work/business may be at risk?

Based on those who are currently working full-time or part-time, as per Q6 (n=436)

Q11

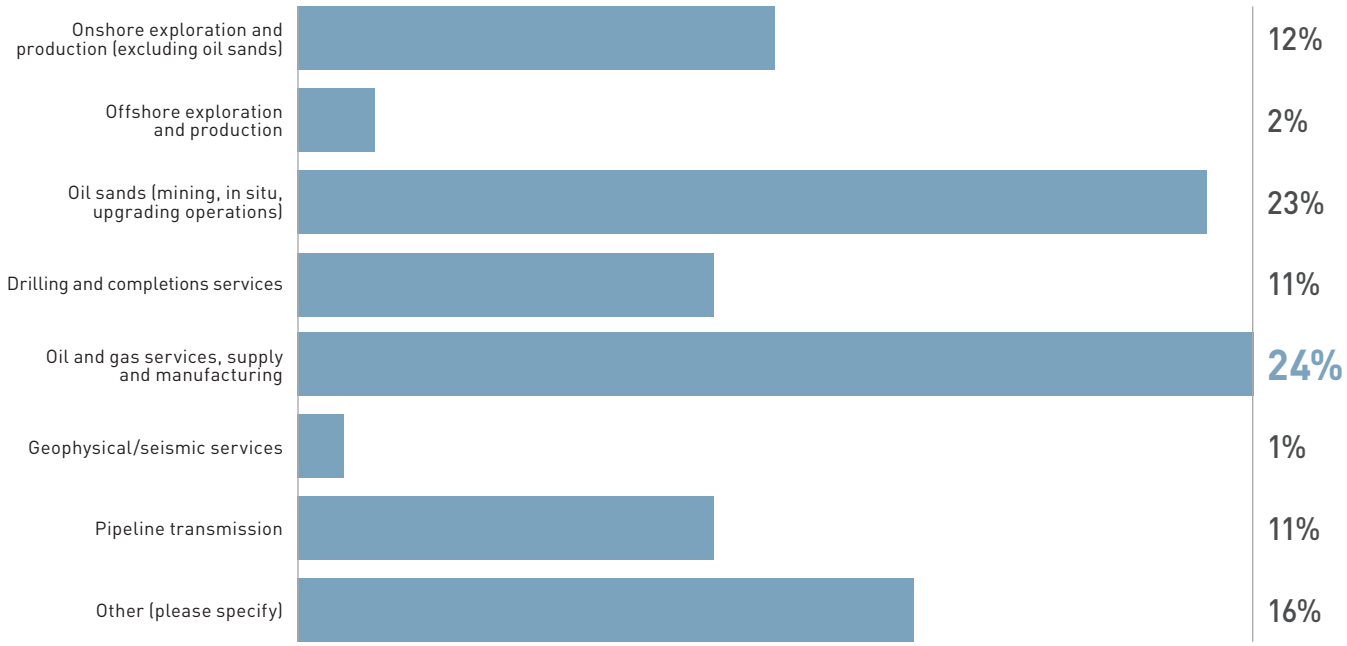
Are you currently working in or providing products or services to the oil and gas industry?

Based on those who are currently working full-time or part-time, as per Q6 (n=437)

Q12

Which oil and gas sector do you currently work in or if self-employed, provide products and services to? Please select the primary sector.

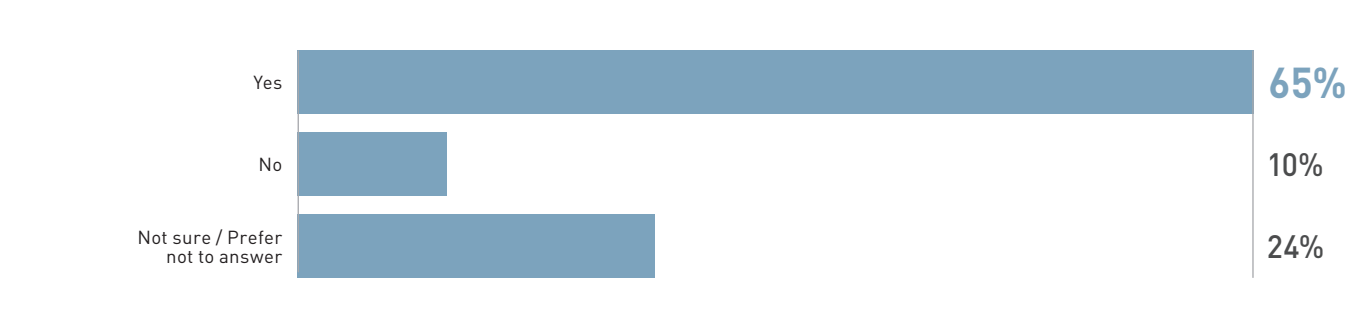
Based on those who are currently working FT or PT in the O&G industry, as per Q6 and Q11 respectively (n=254)



Q13

Do you intend to stay in the oil and gas industry?

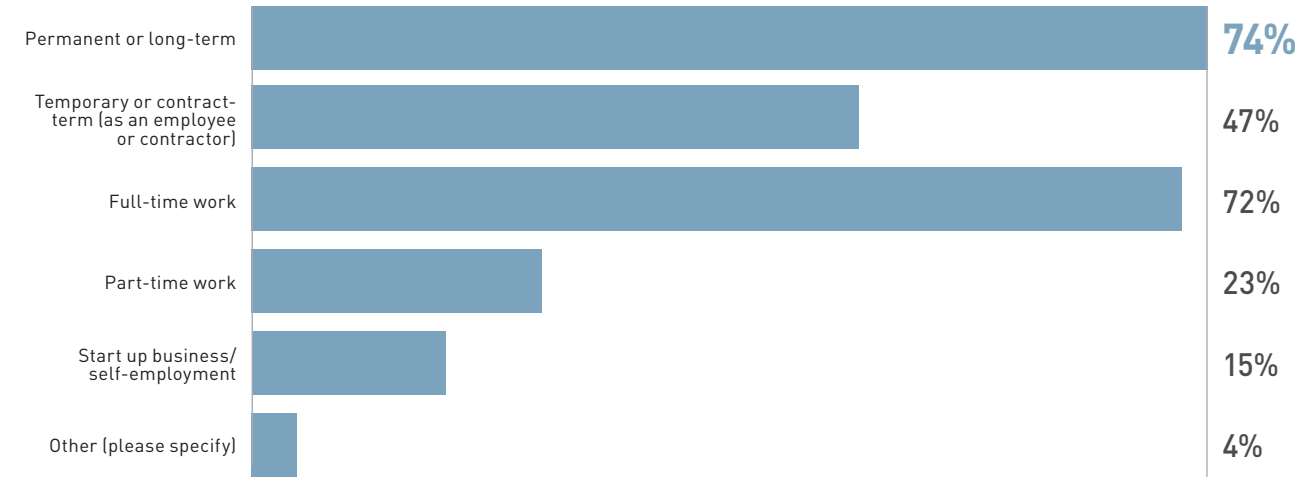
Based on those who are currently working FT or PT in the O&G industry, as per Q6 and Q11 respectively (n=254)



Q14

What type(s) of work arrangements are you seeking? Select all that apply.

Based on those who are currently unemployed but looking for work, as per Q6 (n=199)



Q15: What roles/jobs or opportunities are you applying for?

(the information for this question is not included as it was open-ended)

Q16

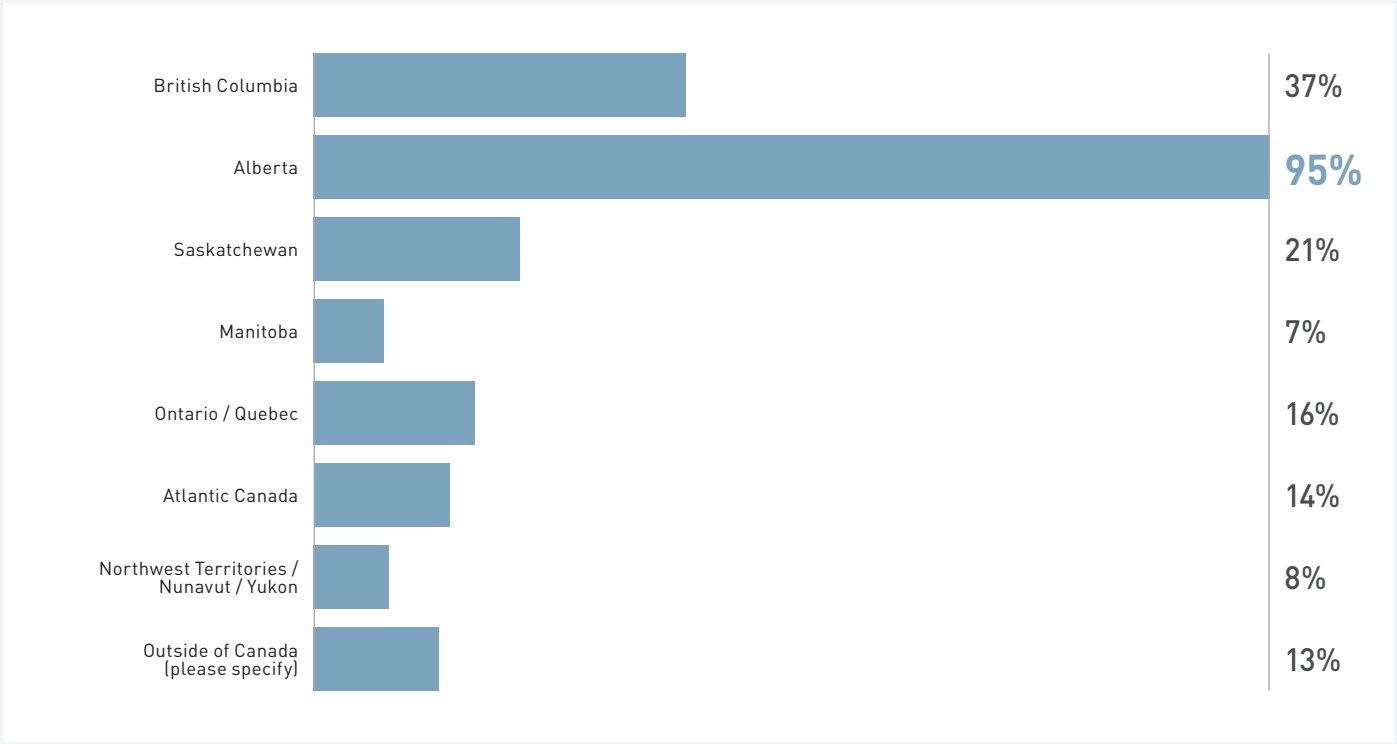
In which industry (or industries) are you currently seeking work?

Based on those who are currently unemployed but looking for work, as per Q6 (n=200)

Q17

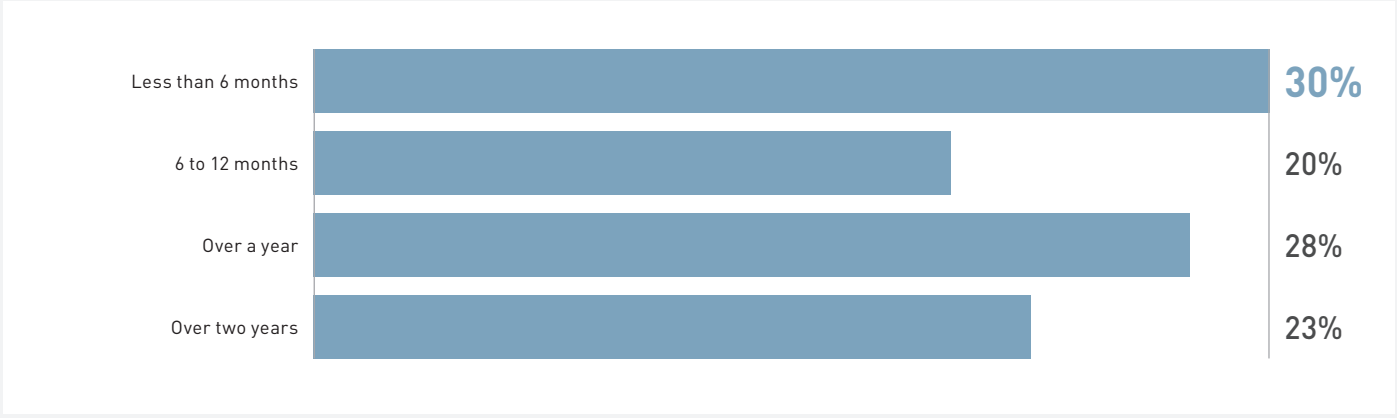
In which provinces and/or territories are you currently seeking employment (or conducting job search)? Select all that apply.

Based on those who are currently unemployed but looking for work, as per Q6 (n=199)



Q18

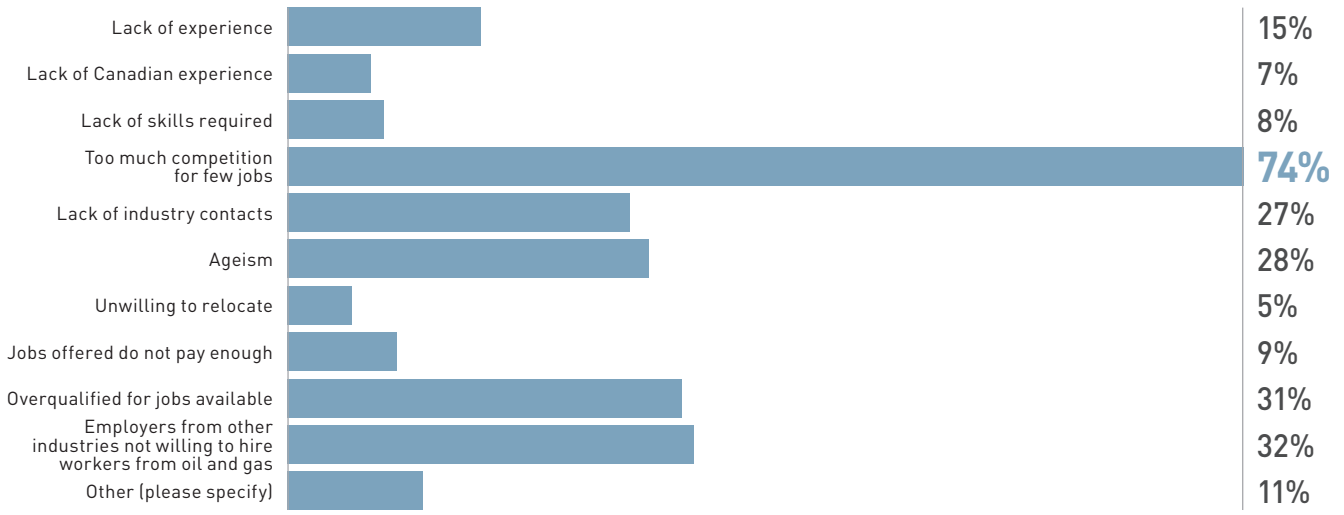
How long have you been out of work? Based on those who are currently unemployed but looking for work, as per Q6 (n=200)



Q19

What do you perceive to be the greatest barrier to obtaining work? Select the top three.

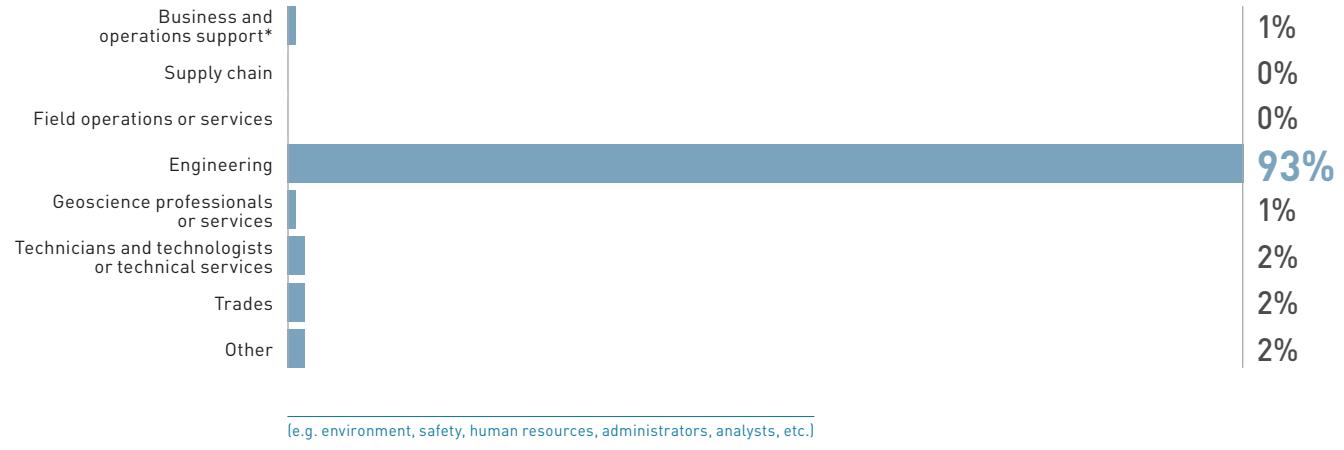
Based on those who are currently unemployed but looking for work, as per Q6 (n=200)



Q20

What is your field of study or program?

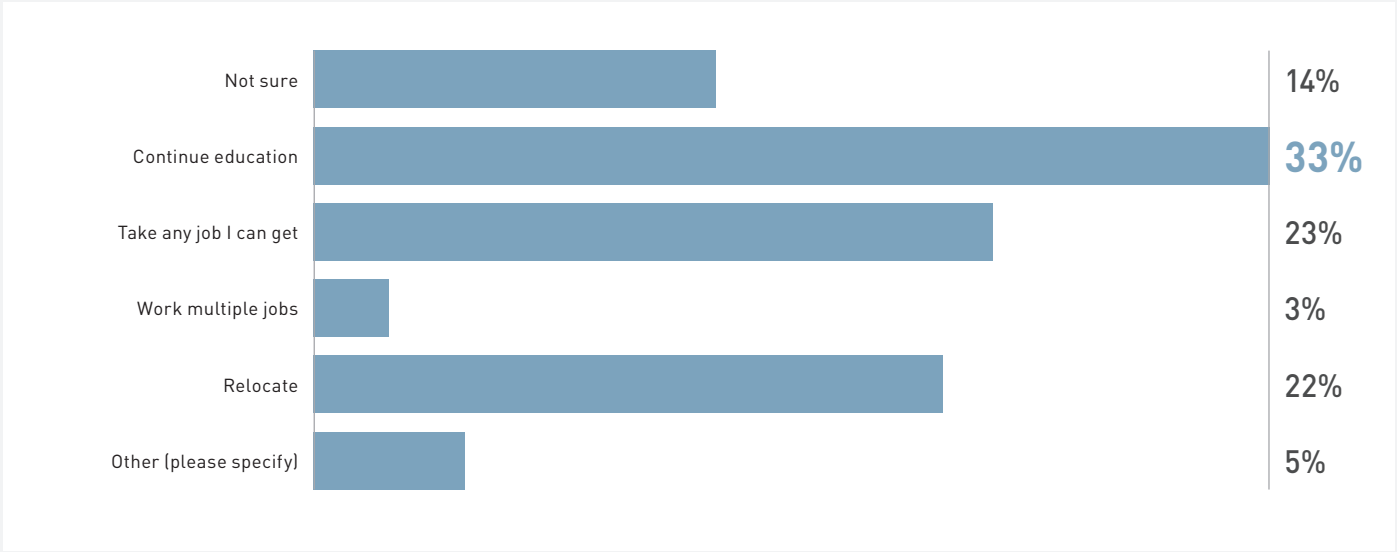
Based on those who are currently a student or apprentice, as per Q6 (n=115)



Q21

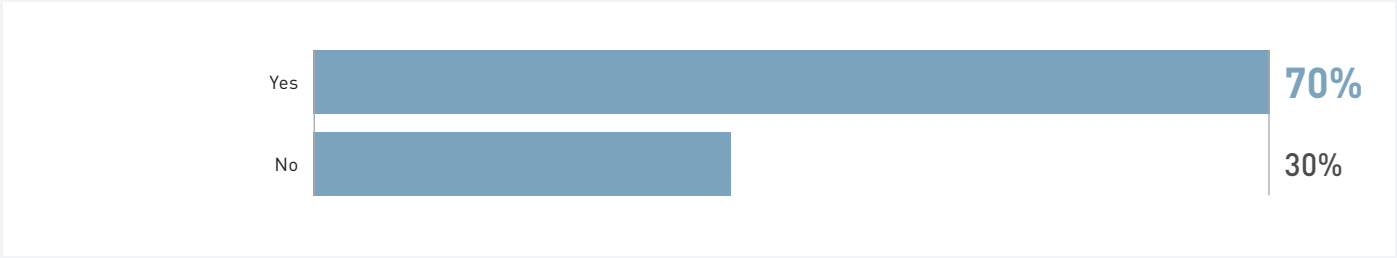
What will you do if you don't find work in your field?

Based on those who are currently a student or apprentice, as per Q6 (n=115)



Q22

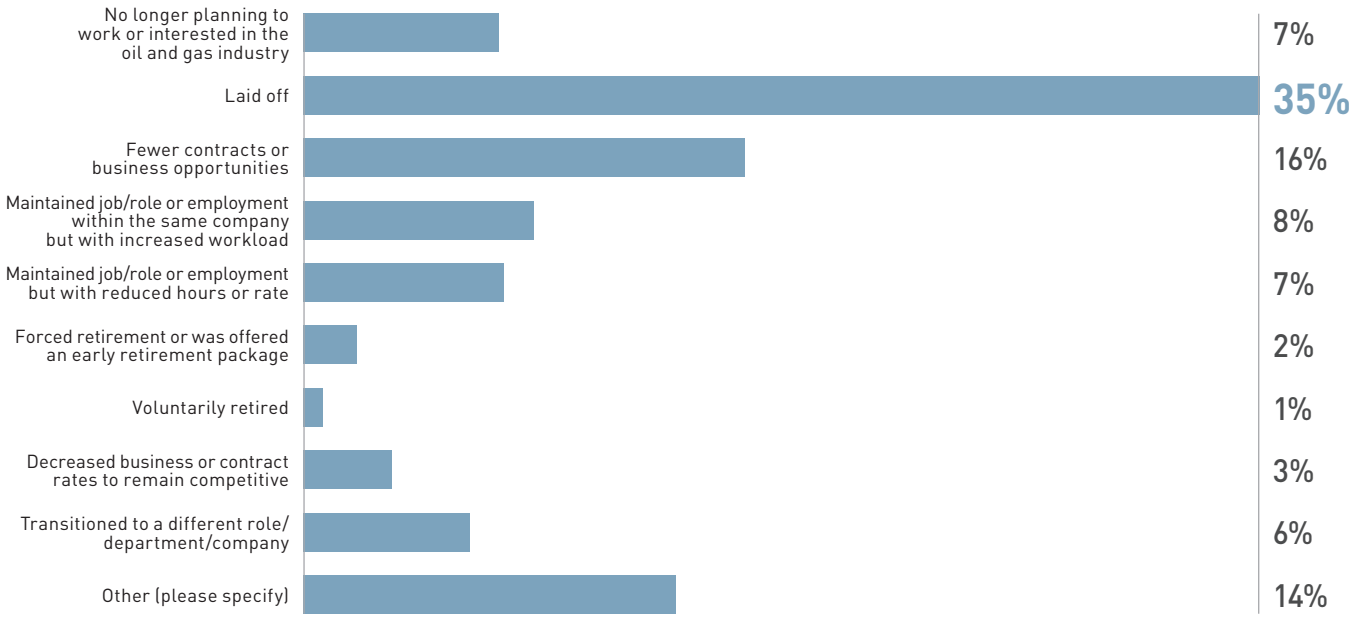
Was your job/work, employment situation or career plan impacted at all by the oil downturn that began in 2014? (n=799)



Q23

How has the downturn impacted your employment situation or career plan? Select the option that best applies to you.

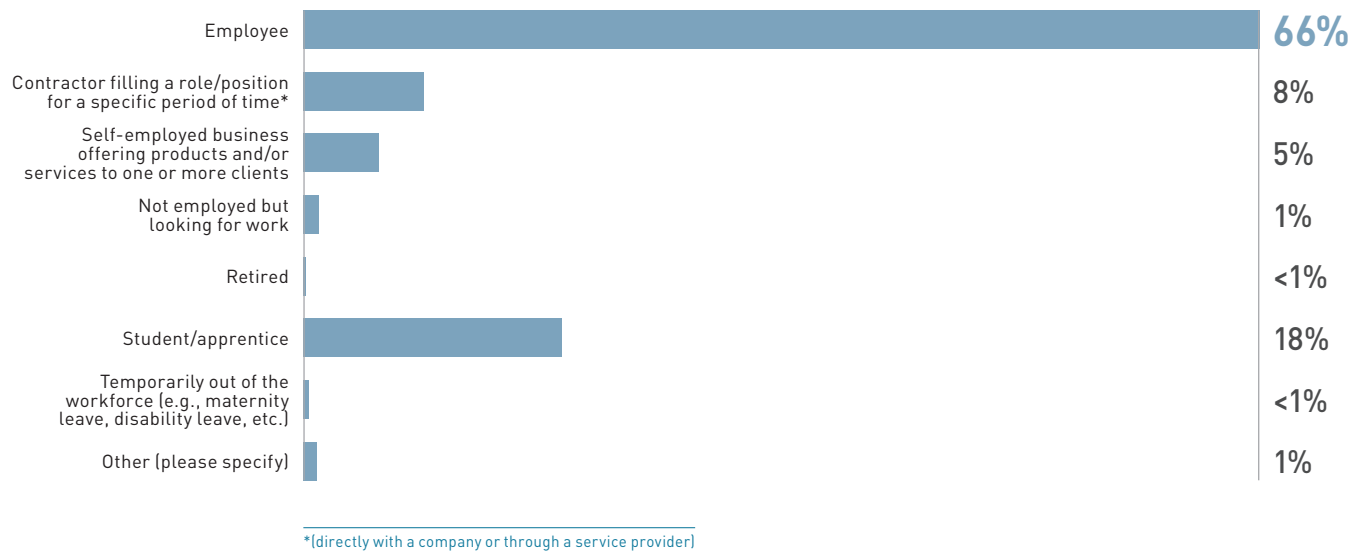
Based on those who were impacted by the downturn, as per Q22 (n=556)



Q24

What was your employment status before you were impacted by the downturn?

Based on those who were impacted by the downturn, as per Q22 (n=554)



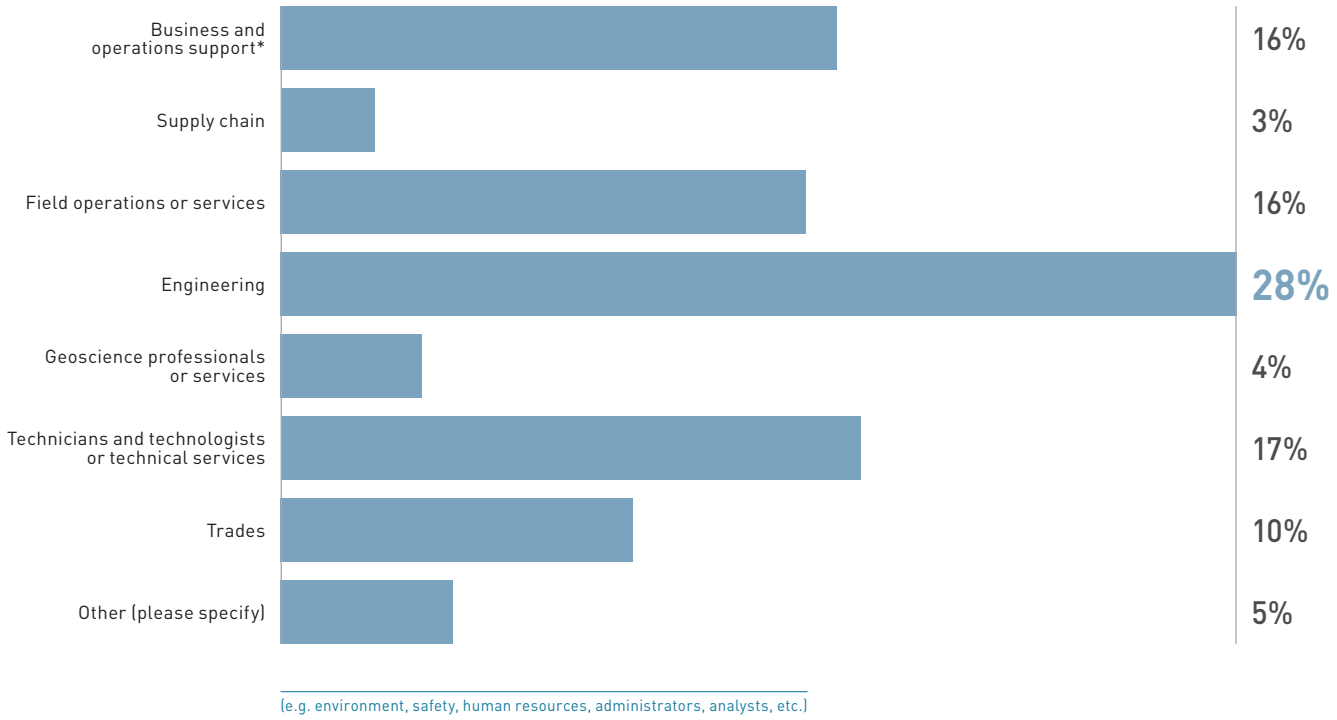
*(directly with a company or through a service provider)

Q25: What was your role/occupation before you retired or were impacted by the downturn? If you were self-employed, please specify the nature of your business.

the information for this question is not included as it was open-ended

Q26

Which of the following categories did your previous role/work fall under? Select the one that best applies to you. Based on those who were impacted by the downturn, as per Q22 and were working or retired, as per Q24 (n=431)



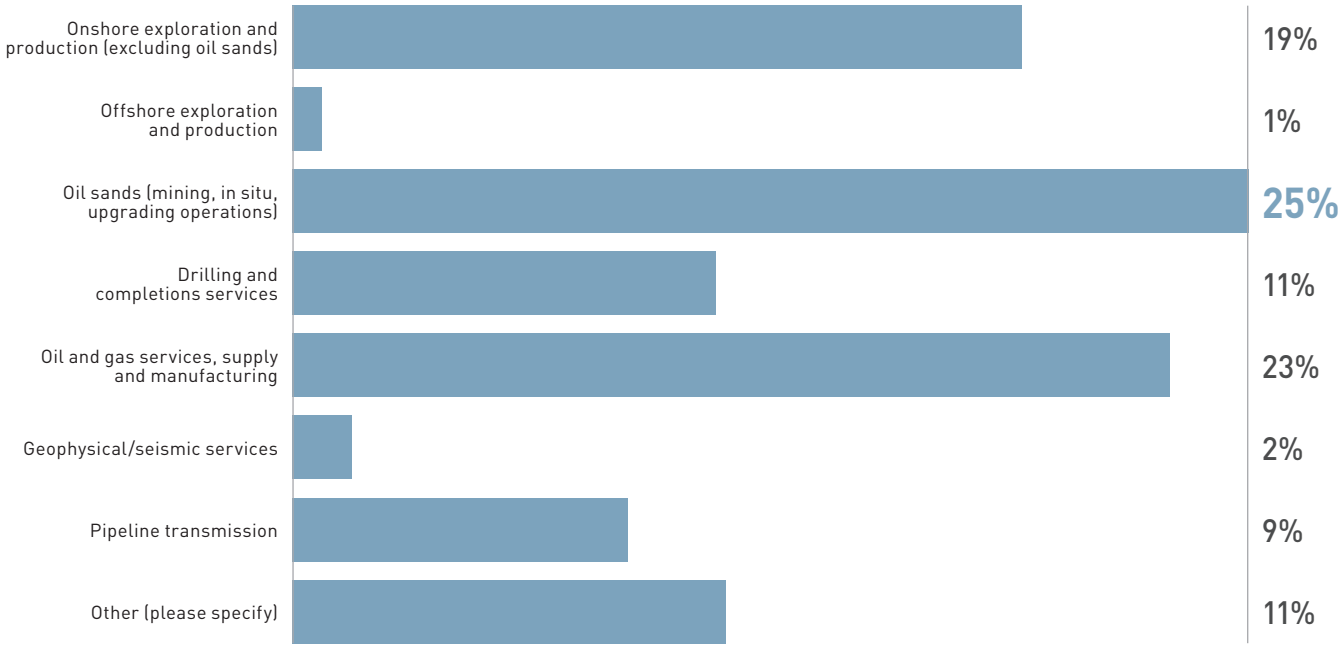
Q27

Which industry or industries were you employed in or if self-employed, offering your products and/or services to before you retired or were impacted by the downturn?

Based on those who were impacted by the downturn, as per Q22 and were working or retired, as per Q24 (n=435)

Q28

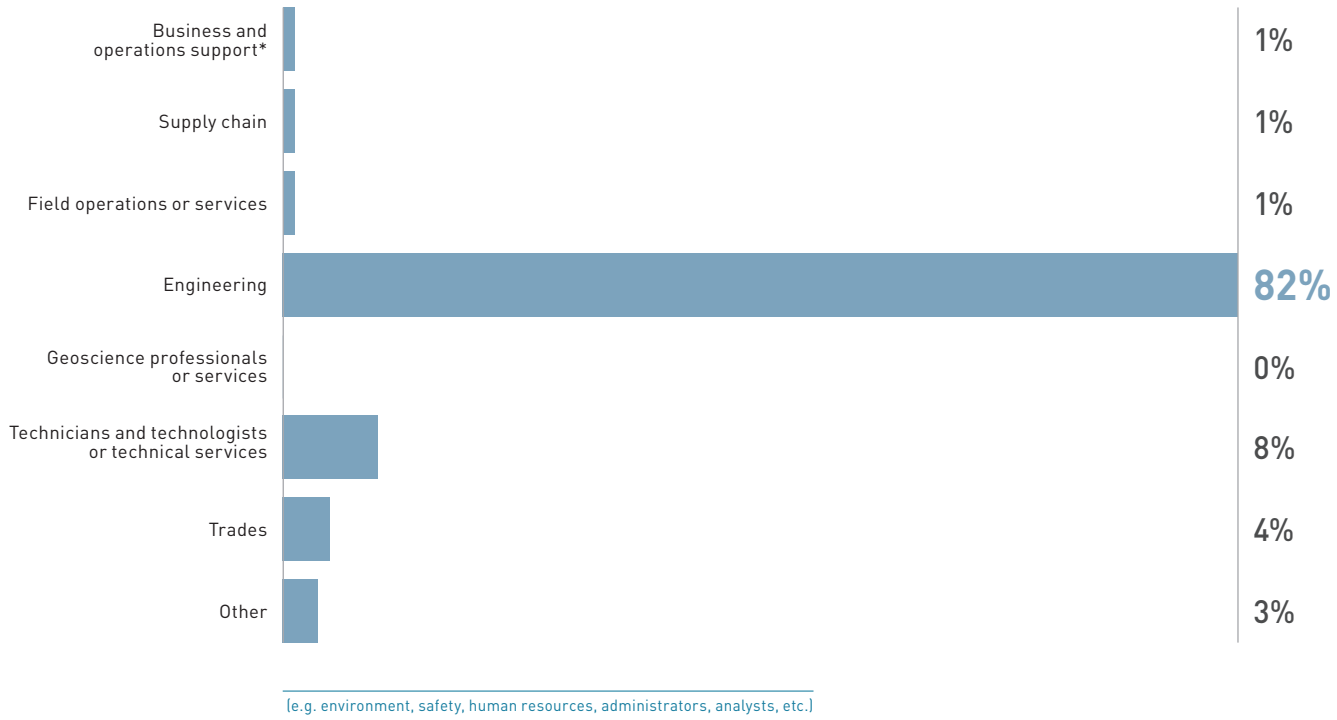
Which oil and gas sector did you work in before you retired or were impacted by the downturn? Please select the primary sector. Based on those who were impacted by the downturn, as per Q22 and were working in or retired from the oil and gas industry, as per Q24 and Q27 respectively (n=390)



Q29

What was your field of study or program before you were impacted by the downturn?

Based on those who were impacted by the downturn, as per Q22 and was a student/apprentice prior, as per Q24 (n=98)



Q30

Were you preparing for a career in a particular industry before you were impacted by the downturn? If so, which one?

Based on those who were impacted by the downturn, as per Q22 and was a student/apprentice prior, as per Q24 (n=98)

Q31: Before your career or job search plans were impacted by the downturn, which industry or industries were you seeking employment in?

(the information for this question is not included as it did not receive sufficient response)

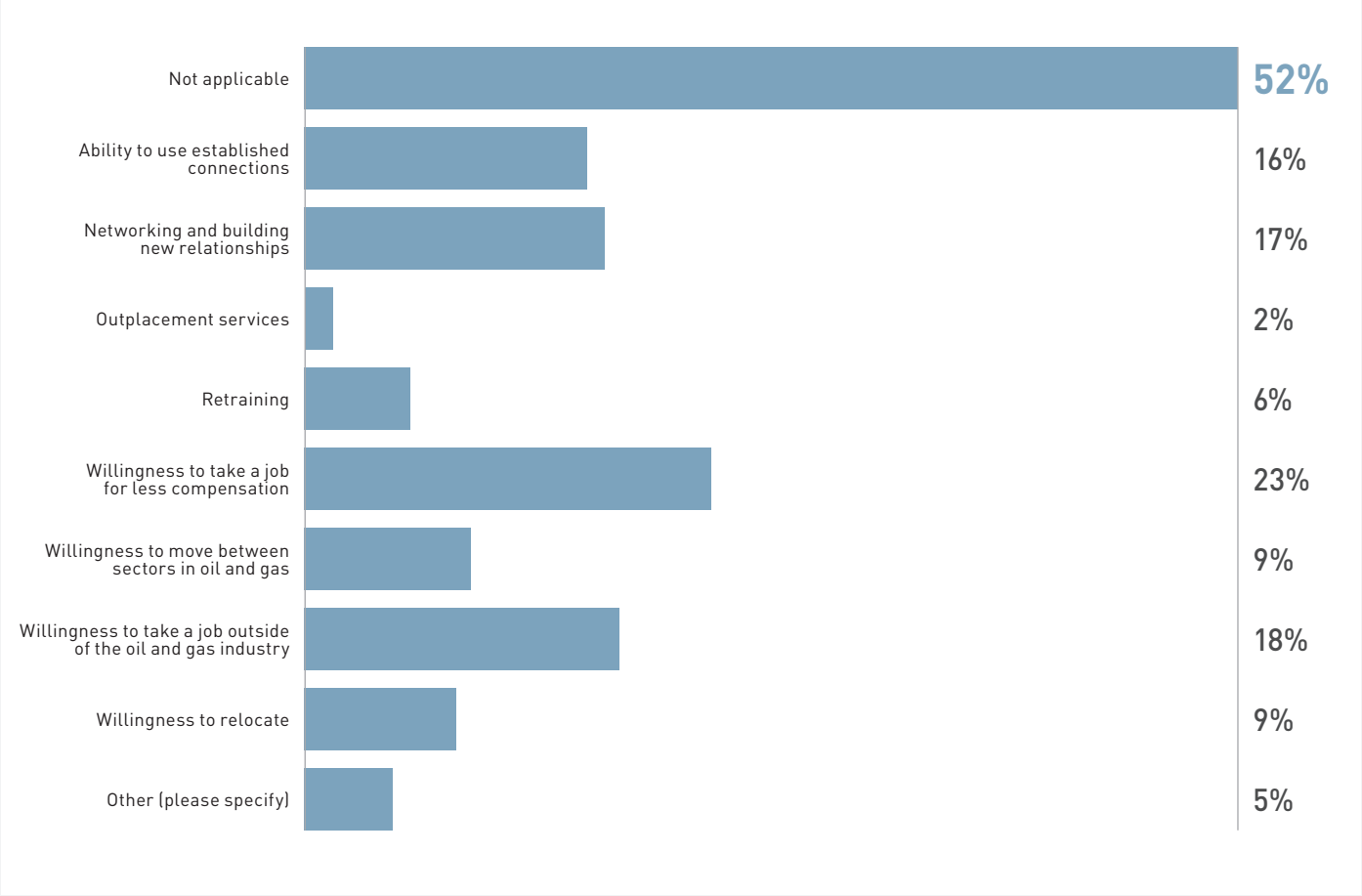
Q32: What was your field of work/business before you were impacted by the downturn?

(the information for this question is not included as it did not receive sufficient response)

Q33

If you are working again after being laid off or dissolving your business because of the downturn, what do you believe assisted you the most in finding work? (Select top three)

Based on those who were impacted by the downturn, as per Q22 (n=505)



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- Calfrac
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- Cenovus Energy
- DMG Events
- Dynawise Inc.
- Employment Connections
- Encana
- Goldmind Project
- Higher Landing
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- Laid Off Calgary
- McBride Career Group Inc.
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- Methane Emissions Leadership Alliance
- North Island Employment Foundations Society (NIEFS)
- Northern Lights College
- Petrel Robertson Consulting
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LABOUR MARKET ANALYSIS AND INSIGHTS

The Petroleum Labour Market Information (PetroLMI) is a leading resource for labour market information and trends in the Canadian petroleum industry.

PetroLMI specializes in providing petroleum labour market data, analysis and insights, as well as occupation profiles and other resources for workforce and career planning.

With the support of industry, PetroLMI has developed the **Careers in Oil + Gas** website to provide its resources and key industry information to those in workforce planning or who are planning and pursuing careers in the oil and gas industry.

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