

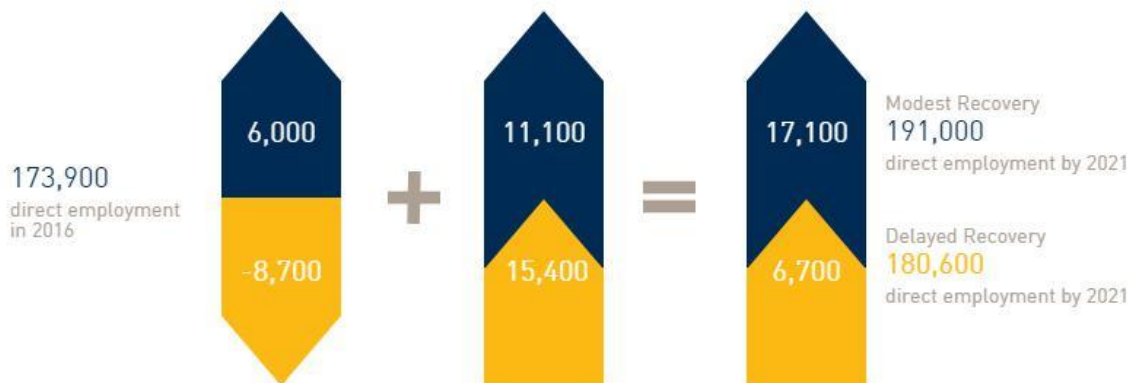
Employment Opportunities in Canada's Oil and Gas Industry

Two years of low oil prices severely impacted the oil and gas industry globally. In Canada alone, the industry was forced to cut 25%, or about 52,500, people directly employed to survive the downturn. Although 2017 started out more positively with hiring for certain industry sub-sectors and occupations, it is still largely uncertain what the remainder of the year holds.

If oil prices average over US\$50 per barrel (/bbl) in 2017 and rise to \$75/bbl by 2020-2021, the industry will see a modest recovery and is expect to hire 6,000 new workers this year and an additional 11,100 from 2018 to 2021. If oil prices remain below \$50/bbl for an extended period of time through 2017, and increase to \$60/bbl by 2020-2021, activity will slow down again and further spending cuts and layoffs are expected occur, delaying recovery until 2018. In this scenario, an additional 8,700 jobs could be cut in 2017, followed by a quick recovery where the industry would need to add 15,400 new jobs between 2018 and 2021.

The *Labour Market Outlook 2017 to 2021 for Canada's Oil and Gas Industry* available at www.careersinoilandgas.com presents workforce projections by sub-sector and occupation for a **Modest Recovery** scenario and a **Delayed Recovery** scenario. The chart below highlights the direct employment impacts of both scenarios from 2017 to 2021.

Oil and gas expansion demand summary



Depending on which scenario unfolds, each industry sub-sector is impacted differently and will experience its own challenges during the forecast period. This report includes details on the key industry sub-sectors:

- **Conventional exploration and production (E&P):** exploration and production of oil and gas for onshore and offshore conventional and unconventional reserves except oil sands.
- **Oil and gas services:** contracted exploration, extraction and production services to the oil sands and non-oil sands E&P sectors, including drilling and completions services, geophysical services and petroleum services.
- **Oil sands:** extraction, production and upgrading of bitumen, specifically within mining, in situ and upgrading operations.
- **Pipelines:** storage and mainline transmission of oil and gas.

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Across all of the sub-sectors, hiring is expected to be more challenging if recovery is delayed to 2018. A third year of cost-cutting and layoffs is expected to discourage more potential workers from entering or staying in the industry.

Oil and gas services:

81,500

2016 Estimated Employment
(27,900 jobs lost since 2014)

6,700
(+8%) -600
(-1%)

Job Gains/Losses in 2017 – 2021
(Modest and Delayed Recovery)

For the **oil and gas services sector**, 2017 will be a challenging year regardless of which scenario unfolds. In a **Modest Recovery** scenario this sector has the most job gains over the five year period, and increases in activity levels may have many companies scrambling to fill positions. In a **Delayed Recovery** scenario, the sector is expected to lose jobs through 2017 due to continued cost-cutting and restructuring. In 2018 hiring is expected to resume, however, the sector isn't expected to return to its 2016 employment level.

Conventional E&P:

53,800

2016 Estimated Employment
(21,600 jobs lost since 2014)

5,500
(+10%) 2,600
(+5%)

Job Gains in 2017 – 2021
(Modest and Delayed Recovery)

For the **conventional exploration and production (E&P) sector**, companies are unlikely to commit to full-time employees until there is greater confidence that oil prices and investment are stable. Both scenarios see the sector growing; in the **Modest Recovery** scenario an estimated 5,500 jobs will be added, and in a **Delayed Recovery** scenario another 2,600 jobs will be created.

Oil sands:

28,900

2016 Estimated Employment
(2,400 jobs lost since 2014)

4,000
(+14%)

Job Gains in 2017 – 2021
(Modest and Delayed Recovery)

For the **oil sands sector**, major projects under construction will move into production beginning in 2017, and the sector will continue to focus on improving operational reliability and efficiency. An estimated 4,000 jobs will be added by 2021 regardless of when hiring commences, surpassing peak levels in 2014.

Pipelines:

9,700

2016 Estimated Employment
(600 jobs lost since 2014)

1,000
(+10%) 800
(+8%)

Job Gains in 2017 – 2021
(Modest and Delayed Recovery)

For the **pipelines sector** growth in natural gas production will drive demand. Increasing automation, efficiency and productivity advancements could reduce the number of workers required. Currently, an estimated 1,000 new jobs are expected in the **Modest Recovery** scenario, and 800 jobs in the **Delayed Recovery** scenario by 2021.

Across all of the industry sub-sectors, regardless of the pace of job creation, growth is projected to plateau in 2020-2021 as a result of productivity improvements and Canada's limited ability to compete in the global energy market – at least within the five-year forecast. For full job recovery, Canada will need to access world markets via new pipelines. The industry's workforce will play a key role in further innovation and technical advancements that will be required to compete and support an industry transition through carbon regulations.

Employment Opportunities in Canada's Oil and Gas Industry

Top 10 occupations with the greatest job growth from 2017 to 2021, in both scenarios

| Occupation (NOC 2011) | 2016 Estimated Employment | Scenario | Expansion Demand | | |
|--|---------------------------|----------------|------------------|---------------|---------------|
| | | | 2017 | 2018-2021 | Total |
| Total industry | 173,900 | Modest | 6,000 | 11,100 | 17,100 |
| | | Delayed | -8,700 | 15,400 | 6,700 |
| Supervisors and contractors, oil and gas drilling and services (8222) | 7,940 | Modest | 860 | 625 | 1,480 |
| | | Delayed | -450 | 1,080 | 630 |
| Oil and gas well drillers, servicers, testers and related workers (8232) | 10,600 | Modest | 825 | 550 | 1,375 |
| | | Delayed | -475 | 980 | 505 |
| Heavy equipment operators (except crane) (7521) | 8,565 | Modest | 225 | 980 | 1,205 |
| | | Delayed | -120 | 1,075 | 955 |
| Power engineers and power systems operators (9241) | 6,735 | Modest | 175 | 750 | 925 |
| | | Delayed | 75 | 770 | 845 |
| Oil and gas well drilling workers and service operators (8412) | 4,690 | Modest | 480 | 315 | 795 |
| | | Delayed | -250 | 570 | 320 |
| Purchasing agents and officers including landmen (1225) | 3,290 | Modest | 295 | 420 | 710 |
| | | Delayed | -215 | 565 | 350 |
| Managers in natural resources production, drilling and well servicing (0811) | 5,075 | Modest | 260 | 375 | 635 |
| | | Delayed | -410 | 590 | 180 |
| Oil and gas drilling, servicing and related labourers (8615) | 5,390 | Modest | 365 | 260 | 625 |
| | | Delayed | -220 | 450 | 230 |
| Geologists and geophysicists (2113) | 3,550 | Modest | 160 | 255 | 410 |
| | | Delayed | -245 | 380 | 135 |
| Heavy-duty equipment mechanics (7312) | 2,860 | Modest | 70 | 280 | 355 |
| | | Delayed | -80 | 325 | 245 |
| Petroleum engineers (2145) | 3,970 | Modest | 90 | 270 | 355 |
| | | Delayed | -255 | 375 | 120 |

In addition to the jobs required for Canada's oil and gas industry expansion, one in 10 workers are eligible to retire between 2017 and 2021, creating the potential for up to 23,000 vacancies. How many of these will be filled will be dependent on a number of factors, including, the use of new technologies.

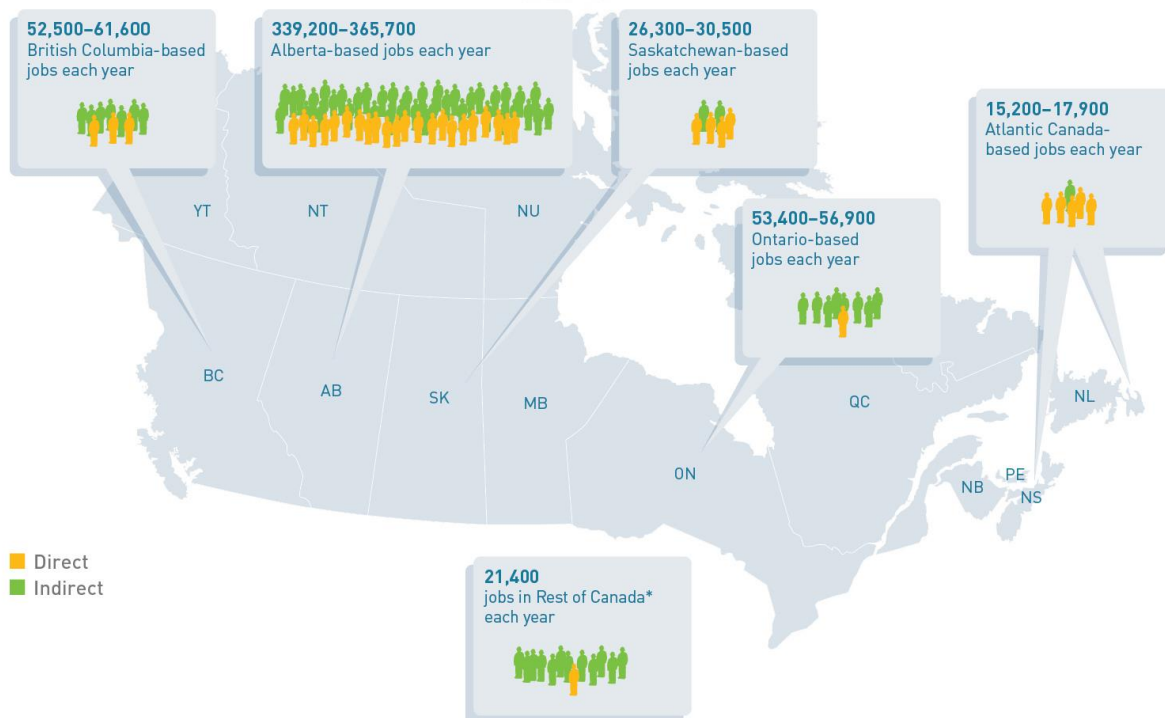
Employment Opportunities in Canada's Oil and Gas Industry

Oil and gas activity occurs in 12 of Canada's 13 provinces and territories. In 2017 producers are focused on oil plays that will offer the best financial returns, such as:

- Reserves that respond to technology that enhances well efficiency and productivity, such as multi-pad horizontal drilling and multi-stage hydraulic fracturing,
- Reserves in regions that have established infrastructure including roads, pipelines and processing facilities.

As a result, reinvestment is occurring in more traditional regions in the Western Canadian Sedimentary Basin (WCSB) that spans British Columbia, Alberta and Saskatchewan. Based on production and investment projections for both scenarios, an estimated annual average of 510,000 to 550,000 direct and indirect jobs will be supported by Canada's oil and gas industry between 2017 and 2021. Indirect oil and gas activity and jobs are geographically widespread as the industry sources goods and services across Canada. Indirect jobs are those primarily in oil and gas engineering and other construction, wholesale and retail trade, professional and consulting services, manufacturing, transportation and other technical and business sectors.

Employment impacts on oil and gas activity across Canada (Delayed – Modest Recovery scenario)



* Rest of Canada includes Manitoba, Quebec, the Northwest Territories, Yukon and Nunavut, for both scenarios.