

# PetroLMI

DIVISION OF ENERGY SAFETY CANADA

## GOING BEYOND:

SUPPORTING INDIGENOUS  
EMPLOYMENT IN CANADA'S ENERGY  
INDUSTRY THROUGH A PANDEMIC  
AND ECONOMIC CHALLENGES



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# 1. EXECUTIVE SUMMARY

As Canada's energy industry emerges from the challenges of the COVID-19 pandemic coupled with historically low oil prices, creating opportunities for Indigenous Peoples — particularly youth — to engage in energy industry activity will be critical. These opportunities will support long-term community well-being and growth in the face of unprecedented economic, infrastructure and social challenges. They will also support industry's own broader effort towards “economic reconciliation”, defined as creating ways to share economic opportunities arising from resource development, while continuing to learn, improve and grow strong relationships based on trust and respect.

PetroLMI's *Going Beyond: Supporting Indigenous Employment in Canada's Energy Industry Through a Pandemic and Economic Challenges* examines the current state of Indigenous participation in the industry. The report reviews the disproportionate impact

the economic downturn and COVID-19 have had on Indigenous communities, and outlines areas of opportunities and best practices related to overcoming barriers and enabling greater Indigenous engagement.

**Young Indigenous Peoples are among the fastest-growing demographic in Canada. Between 2006 and 2016, the Indigenous population grew at four times the rate of the non-Indigenous population, meaning that in less than five years 350,000 Indigenous youth will reach an age when they could become members of the workforce. They have the potential to increase the country's economy by \$27.7 billion per year if they have access to the supports needed to build essential skills through quality, targeted and culturally appropriate education, skills and training.<sup>1</sup>**

## Indigenous representation in today's energy industry

In 2019 approximately 13,800 self-identified Indigenous Peoples were directly employed in Canada's oil and gas industry, which represented just over 7% of total oil and gas employment — compared to 3% in other industries. Indigenous employment grew by 26%, or 2,900 positions, from 2014 to 2019, while non-Indigenous employment declined by nearly 19% or 40,500 positions. In 2019, the top occupation for Indigenous workers was oil and gas well drillers, servicers, testers and related workers (4,000) and the highest share of employment was power engineers and power systems operators (36%).

This changed dramatically with the onset of the pandemic. COVID-19 has had disproportionate impacts on Indigenous workers across all industries in Canada. In the oil and gas industry, the Indigenous unemployment rate rose 4.5 percentage points from January (8.6%) to May (13.1%) while the non-Indigenous unemployment rate rose 7.1 percentage points in the same period from 4.6% to 11.7%. From May to August the unemployment rate more than doubled for Indigenous Peoples (to 26.7%) while the non-Indigenous unemployment rate rose by just 1.4 percentage points to 13.1%.<sup>2</sup>

*“COVID has slowed everything down and that brings so many risks for our communities that already experience high levels of health concerns, people living below the poverty line, and lower levels of education. COVID paralyzes communities and, as this virus moves north, northern communities are already vulnerable.”*

*- Karen Ogen-Toews, CEO, First Nations LNG Alliance*

<sup>1</sup> Public Policy Forum (2020) *Mapping the Landscape: Indigenous Skills Training and Jobs in Canada*.

<sup>2</sup> PetroLMI and Statistics Canada Labour Force Survey, unadjusted three-month moving average

## Promising opportunities

A strong energy industry will be an important part of Canada's economic recovery from COVID-19. With the right conditions, natural resources and manufacturing could create up to 2.6 million new jobs and up to a 17% increase in real GDP according to estimates. This could amount to a nearly \$200 billion increase in potential labour earnings, while still moving Canada towards a low-emissions future.<sup>3</sup>

Looking ahead, collaboration between industry, communities, governments and other stakeholders will be critical in continuing and growing the opportunities for Indigenous engagement and benefits from the energy sector. Whether it is partnering in clean energy projects; procurement prospects such as opportunities for Indigenous oilfield service contractors through the Government of Alberta's Site Rehabilitation Program; or the developing LNG industry across Canada (particularly in British Columbia); the opportunities exist. And, with Indigenous entrepreneurship representing a fast-growing segment of the Canadian economy, the conditions for participation hold promise.

**Development of a Canadian geothermal industry could create over 5,000 new jobs for displaced oil and gas drilling contractors and oilfield service workers as many of the occupations are transferable.<sup>4</sup>**

## Overcoming barriers and sharing best practices

Indigenous Peoples face unique barriers that have affected their full participation in the energy industry. These include how they look for work, skills gaps, remoteness of Indigenous communities and the corresponding lack of access to internet, education and training opportunities and the intergenerational effects of the residential school system. With pre-employment training, targeted strategies to attract and retain Indigenous workers, culturally appropriate programming to upgrade essential skills including digital literacy, and arrangements like equity partnerships that support the economic and social resilience of communities, rates of employment and success can be improved.

**Well-governed communities with access to business opportunities — for example, those with treaty rights relevant to development of resource projects — realize employment benefits and higher community well-being scores.<sup>5</sup>**

## Occupational snapshots

The report concludes with a sampling of selected occupations across energy industry sub-sectors (exploration and production, oil sands, pipelines, oil and gas services and LNG) including educational requirements and the skills and competencies needed, with a focus on what are expected to be the most stable, in-demand roles. Whether through roles in business and operations support, engineering, skilled trades, environment, regulatory and stakeholder engagement, geosciences, or IT, there a variety of ways in which Indigenous Peoples can participate. These occupational snapshots can provide communities and employers with the information they need to support training, retraining and upskilling.

<sup>3</sup> <https://energynow.ca/2020/08/the-task-force-for-real-jobs-real-recovery-releases-natural-resource-focused-economic-recovery-plan/>

<sup>4</sup> <https://www.thinkgeoenergy.com/canadian-oil-service-sector-joins-forces-to-support-emerging-canadian-geothermal-industry/>

<sup>5</sup> CD Howe Institute (2020). *No Easy Answers: Insights into Community Well-Being Among First Nations*.



## 2. INTRODUCTION

### Oil and gas 101: How the industry works

Oil and gas is one of Canada's largest industries with activity in 12 out of 13 provinces and territories. It consists of three areas of activity (see Figure 1).

**Upstream** activities focus on finding and extracting crude oil and natural gas from the ground, both on and offshore. It includes planning and preparation—such as environmental studies, public consultations and engineering plans—as well as field activities, such as subsurface mapping, drilling wells, pumping oil, trucking supplies, mining the oil sands, land reclamation and more.

Activities in the **midstream** sector involve gathering, processing, storing, marketing and transporting oil and oil byproducts, natural gas and natural gas liquids.

Midstream also includes the sale and marketing of refined oil and gas products to downstream wholesalers and industrial and commercial companies.

The **downstream** sector is where oil and natural gas meet the consumer via oil refineries, petrochemical plants, retail gas stations and natural gas distribution companies.

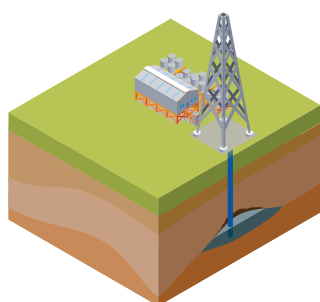
There are plentiful oil and natural gas reserves across the country (see Figure 2). Canada has the world's third-largest oil reserves after Venezuela and Saudi Arabia and is the world's fifth-largest producer of natural gas.<sup>6</sup> Producing more oil and natural gas than the country can consume, Canada exports its surplus production – primarily to the United States.

Figure 1: The three areas of activity in Canada's oil and gas industry

#### UPSTREAM

Finds and produces oil and natural gas

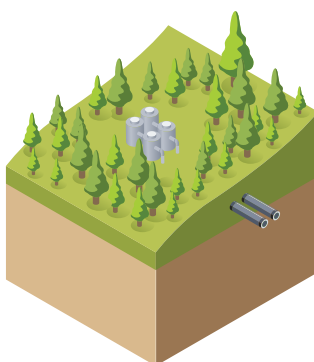
Includes exploration and production (E&P) across Canada including oil sands and offshore and oil and gas services



#### MIDSTREAM

Processes, stores, transports and sells oil and natural gas

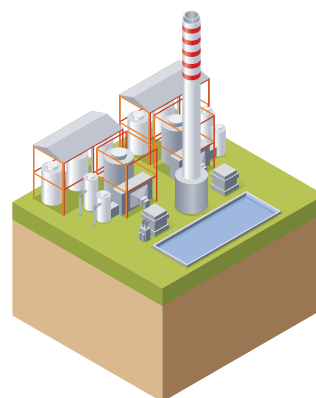
Includes pipelines, upgraders, natural gas processing and LNG facilities



#### DOWNSTREAM

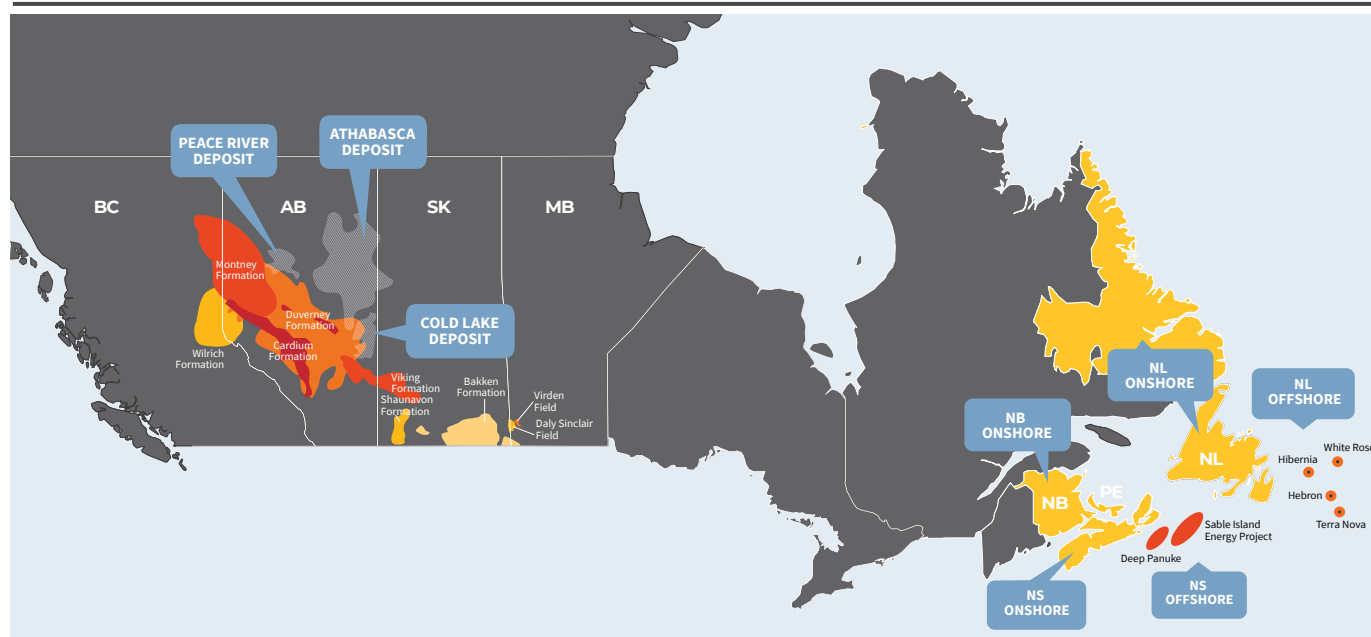
Processes oil and natural gas into different products, such as jet fuel, asphalt, plastics and fertilizers

Includes petrochemical plants, refineries and retail outlets



<sup>6</sup> <https://www.capp.ca/energy/world-energy-needs/>

**Figure 2: Location of Canada's oil and natural gas reserves**



## Experience the Energy: Take the Tour

Want to get an up-close and personal look at Canada's oil and gas industry? PetroLMI's **Experience the Energy: Take the Tour** virtual reality system lets you experience what it's like to be on

multiple worksites. You can check out conventional and automated drilling, steam assisted gravity drainage (SAGD) oil recovery, mining, processing, wellsite decommissioning and natural gas and

liquids pipelines. Get the real-life perspective of being onsite, and see the types of careers available and the leading-edge technologies that are transforming the Canadian energy industry.

## Industry employment and economic contribution to Canada

From coast to coast to coast, nearly half a million people are directly and indirectly employed by Canada's oil and gas industry.<sup>7</sup> Direct employment refers to those jobs in companies directly linked to the exploration and production of oil and gas, such as geologists and drillers. Indirect employment refers to those jobs in companies involved in the manufacturing and provision of goods and services that support the oil and gas industry, such as, trucking or drill bit manufacturing. There are also numerous jobs across the country that are "induced" or generated from the spending by oil and gas activity, such as catering or housing.

In 2019, the direct workforce accounted for more than 187,600 workers:

- 92,600 (49%) in exploration and production (including oil sands).
- 80,300 (43%) in oil and gas services.
- 14,700 (8%) in the pipelines sub-sector.<sup>8</sup>

Three-quarters (75%) of the direct workforce is in Alberta — where many oil and gas companies are headquartered — with the balance in Saskatchewan (7%), Central Canada (7%), British Columbia (6%) and Atlantic Canada (5%).<sup>9</sup>

As one of Canada's largest economic contributors, oil and gas activity generates more than \$100 billion, or approximately 6%, of the country's gross domestic product (GDP) annually. On average, between 2016 and 2018, the industry paid a total of \$8 billion a year in taxes and royalties to provincial and federal governments. The industry is supported by a multi-billion-dollar supply chain that includes approximately 10,000 businesses across the country.<sup>10</sup>

<sup>7</sup> Canadian Association of Petroleum Producers (2020). *A Vision for Canada's Recovery: Canada's Natural Gas Industry: Driving Economic Recovery and Environmental Leadership*.

<sup>8</sup> 2019 annual averages from <https://careersinoilandgas.com/what-is-lmi/employment-labour-data/>

<sup>9</sup> Ibid.

<sup>10</sup> Canadian Association of Petroleum Producers (2020). *A Vision for Canada's Recovery: Canada's Natural Gas Industry: Driving Economic Recovery and Environmental Leadership*.

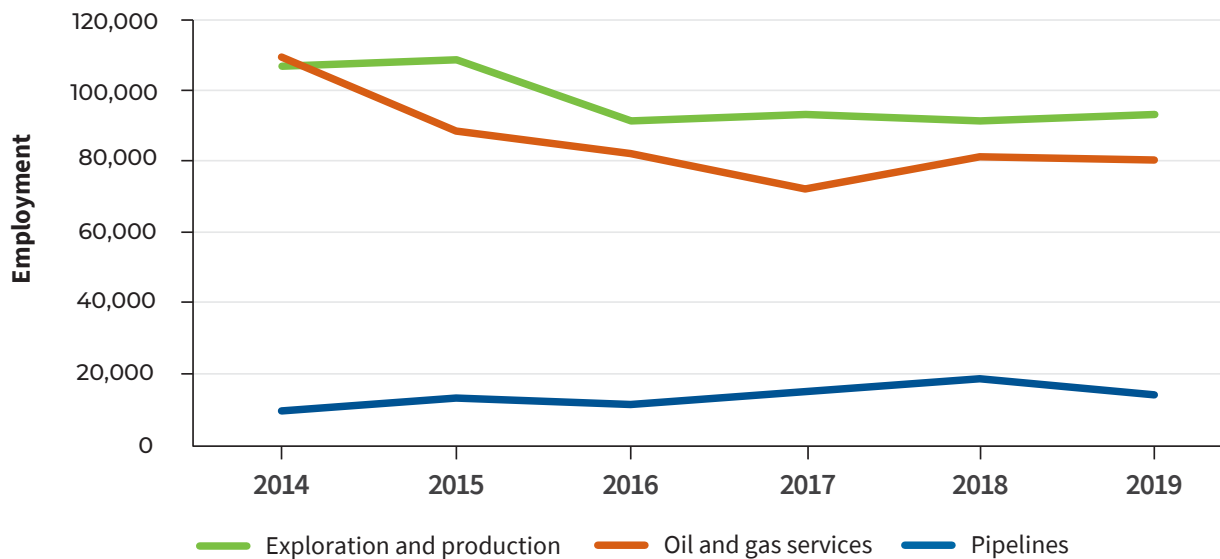
## COVID-19 impact: Exacerbating economic challenges in the energy industry

The onset of the COVID-19 pandemic had global economic impacts, with public health restrictions dramatically reducing energy demand and eroding oil prices. The toll on the oil and gas industry in Canada was especially severe as it followed five years of low growth due to a crash in commodity prices and a lack of pipeline capacity and investment to support getting product to market. Many companies in the oil and gas sector have had to reduce operations, scale back production or shut down completely. By late summer, the Canadian Association of Petroleum Producers (CAPP) released data that Canadian companies had decreased production by 740,000 barrels per day and announced \$8.7 billion of capital investment reductions representing a 32% decline compared with 2019.<sup>11</sup>

Canada's oil and gas industry is experiencing a persistent downturn. Since 2014, employment has declined 17% from a peak of 225,900 to 187,600 in 2019. Employment in the oil and gas

services sub-sector of the industry has been especially hard hit. Between August 2014 and February 2020, employment in this sub-sector fell by 31% — in other words, three in 10 oil and gas services workers lost their jobs during this period. Then, as measures to prevent the spread of COVID-19 were implemented in March 2020, the employment situation deteriorated further. As demand for oil and natural gas declined significantly, it aggravated an already pre-existing supply glut in Canada, which contributed to further job losses. Between February and August 2020, employment in the oil and gas services sub-sector plummeted by another 25% — a loss of 19,800 jobs. Notably, because of the industry's widespread supply chain, job losses impact every region of the country. CAPP estimates the loss of more than 107,000 indirect jobs in the sector in 2020.<sup>12</sup>

**Figure 3: Oil and gas employment in Canada by sub-sector, 2014 to 2019**



Source: Statistics Canada Labour Force Survey and PetroLMI

<sup>11</sup> Canadian Association of Petroleum Producers (2020). *A Vision for Canada's Recovery: Canada's Natural Gas Industry: Driving Economic Recovery and Environmental Leadership*.

<sup>12</sup> Ibid.

## COVID-19 and the impact on Canada's Indigenous employment

The COVID-19 pandemic has had disproportionate impacts on Indigenous Peoples across Canada, including labour market impacts and their ability to meet financial obligations or essential needs. While employment at the start of the pandemic initially declined by a similar share between Indigenous and non-Indigenous communities, employment among Indigenous Peoples has been slower to recover. By August 2020, the unemployment rate had decreased for non-Indigenous people to 11.2% but was little changed among Indigenous Peoples at 16.8%.<sup>13</sup>

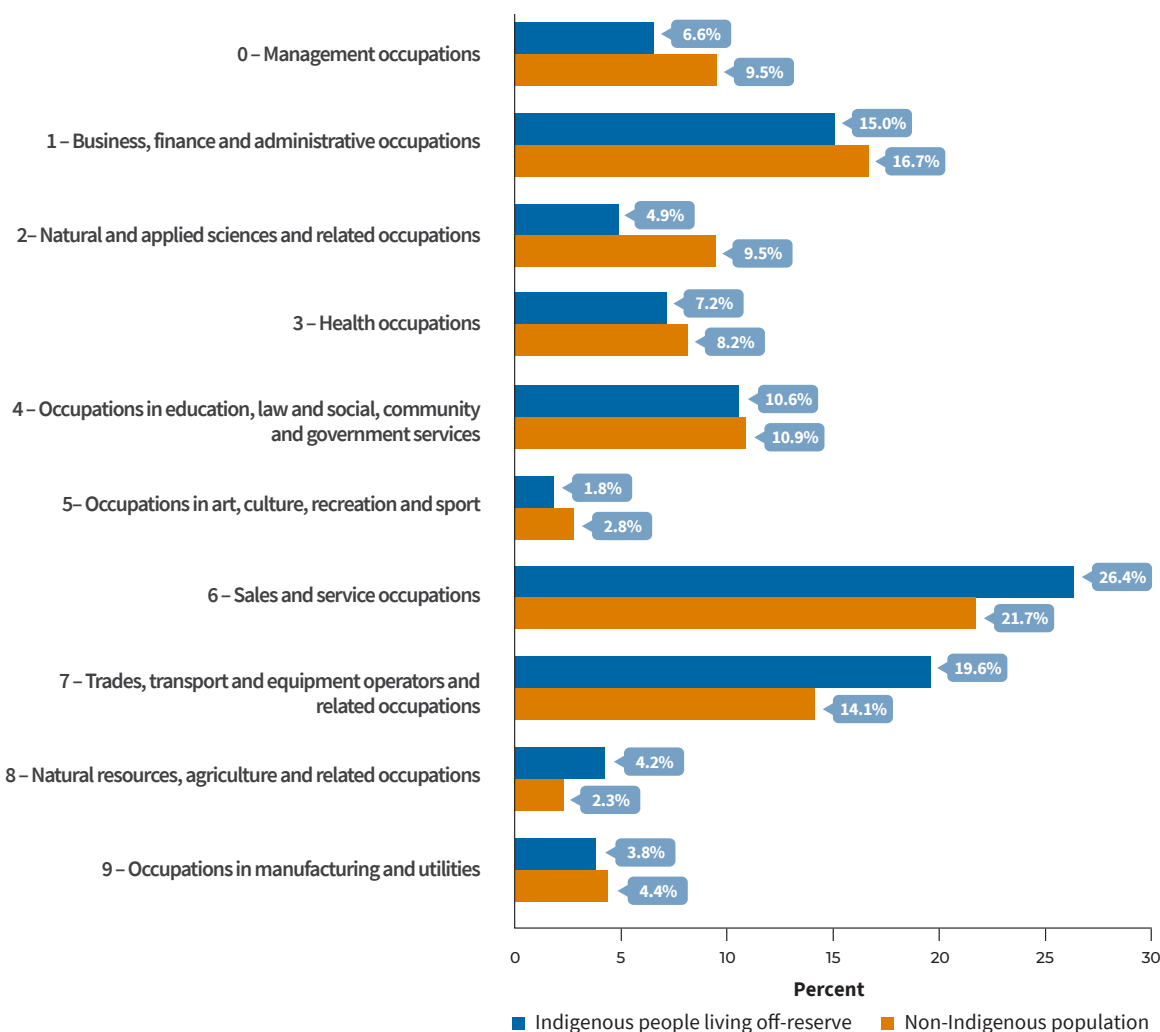
Part of the greater labour market impacts among Indigenous Peoples can be explained in their overrepresentation in certain occupations, such as trades, transport and equipment operators, as well as sales and service occupations. These occupations have

accounted for much of the employment declines since the start of the pandemic as shown in Figure 4.

Indigenous women and youth were also more likely to be disproportionately impacted by the pandemic, with employment and unemployment levels remaining further from their pre-pandemic levels as of August 2020.<sup>14</sup>

COVID-19 has also exacerbated disparities in the employment and skills ecosystem. According to a recent report by the Public Policy Forum in their *Skills Next* series, Indigenous communities — which lack much of the essential infrastructure to respond, such as educational supports, broadband infrastructure, and social and economic resources — are among the hardest hit.<sup>15</sup>

**Figure 4: Representation of Indigenous Peoples in occupations with the greatest employment declines during pandemic**



**Note:** Occupation categories are based on the 2016 National Occupational Classification (NOC, one-digit code).

**Source:** Statistics Canada, Labour Force Survey

<sup>13</sup> The LFS provides the timeliest data available on labour market characteristics of Indigenous people in Canada. It should be noted, however, that the LFS is not conducted on reserve, uses a different methodology to survey the Territories and does not include some remote communities. Because of these limitations, data in this report refer to Indigenous people living off reserve in the provinces.

<sup>14</sup> Statistics Canada (2020). *Labour Market Impacts of COVID-19 on Indigenous People: March – August 2020*. <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00085-eng.htm>

<sup>15</sup> Public Policy Forum (2020) *Mapping the Landscape: Indigenous Skills Training and Jobs in Canada*.



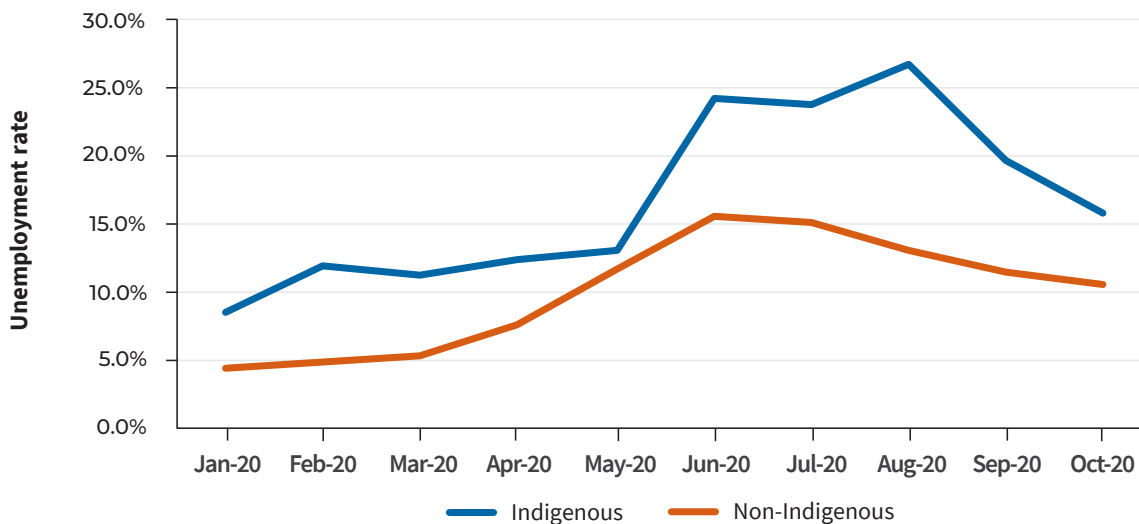
## COVID-19 and the impact on oil and gas Indigenous employment

Prior to the pandemic, the Indigenous unemployment rate was 8.6% in January while the non-Indigenous unemployment rate was 4.6%. From January to May, the unemployment rate rose 4.5 percentage points to 13.1% for Indigenous Peoples and 7.1 percentage points to 11.7% for non-Indigenous people. However the unemployment rate more than doubled for Indigenous Peoples from 13.1% in May to 26.7% in August. This doubling occurred in part because while the labour force increased, employment declined. Over the same period, the non-Indigenous unemployment rate rose by just 1.4 percentage points.

At its peak in August 2020, almost 4,800 Indigenous Peoples were unemployed in the oil and gas industry, or almost of 27% of the Indigenous labour force. This compares to 13% of the non-Indigenous labour force.

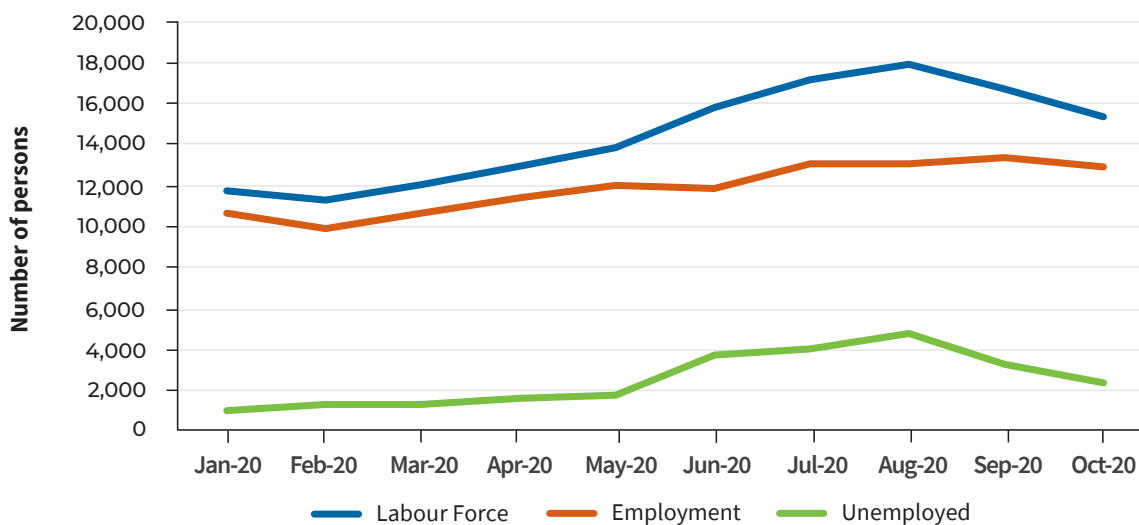
Karen Ogen-Toews, CEO of the First Nations LNG Alliance and former Chief of the Wet'suwet'en First Nation in British Columbia says, "COVID has slowed everything down and that brings so many risks for our communities that already experience high levels of health concerns, people living below the poverty line, and lower levels of education. COVID paralyzes communities — and as this virus moves north our northern communities are already vulnerable."

**Figure 5: Unemployment rate in Canada's oil and gas industry by Indigenous identity, January to October 2020**



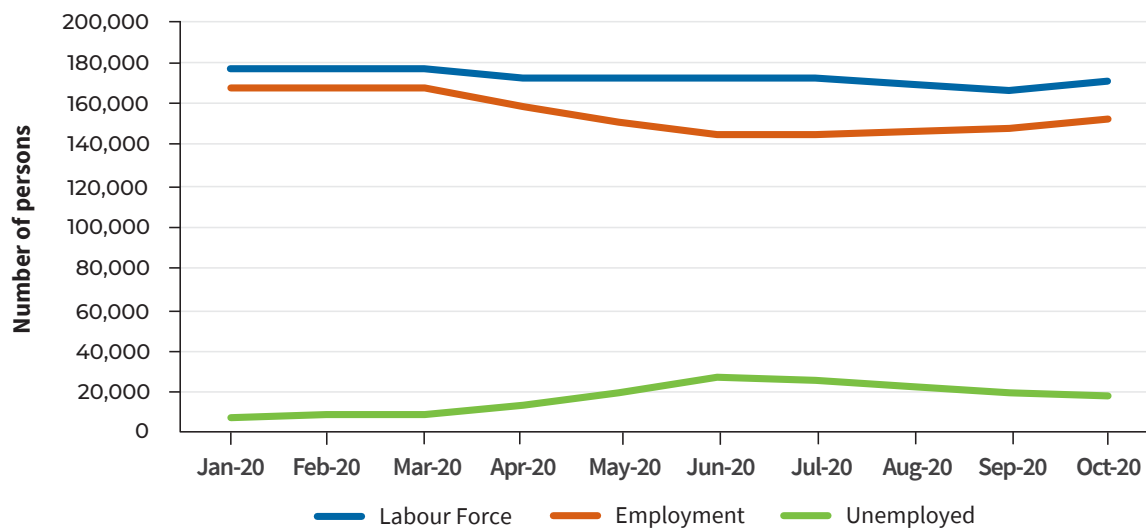
**Source:** PetroLMI and Statistics Canada Labour Force Survey, unadjusted three-month moving average for exploration and production (including oil sands), oil and gas services and pipeline transmission.

**Figure 6: Labour force characteristics of Indigenous People in Canada's oil and gas industry, January to October 2020**



**Source:** PetroLMI and Statistics Canada Labour Force Survey, unadjusted three-month moving average for exploration and production (including oil sands), oil and gas services and pipeline transmission.

**Figure 7: Labour force characteristics of non-Indigenous people in Canada's oil and gas industry, January to October 2020**



**Source:** PetroLMI and Statistics Canada Labour Force Survey, unadjusted three-month moving average for exploration and production (including oil sands), oil and gas services and pipeline transmission.



### 3. LABOUR MARKET INFORMATION

#### Indigenous representation in Canada's oil and gas industry

According to 2019 Statistics Canada data, approximately 13,900 self-identified Indigenous Peoples were employed in Canada's oil and gas industry, which represented just over 7% of the total industry workforce — as compared to 3% in other industries. Indigenous employment increased by nearly 5,000 roles between

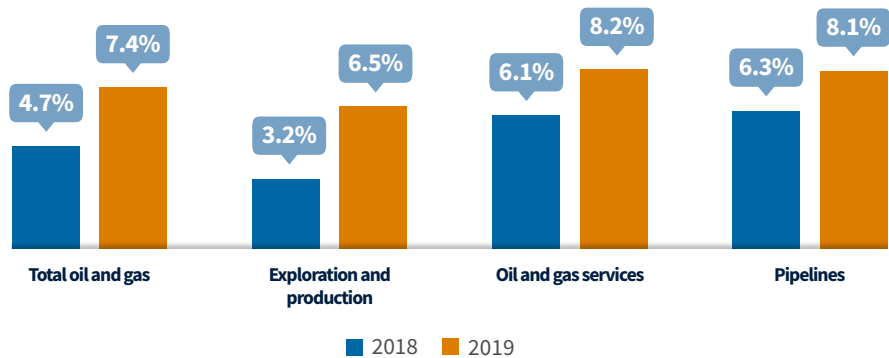
2018 and 2019. Oil and gas services had the largest proportion of Indigenous Peoples (8.2%) among the industry's three sub-sectors. Exploration and production represented 6.5% and the pipelines represented 8.1% (see Figure 8).

**Figure 8: Indigenous Peoples' share of Canada's oil and gas employment, 2018 and 2019**

#### INDIGENOUS PEOPLES EMPLOYED IN OIL AND GAS

**2018: 9,000**

**2019: 13,900**



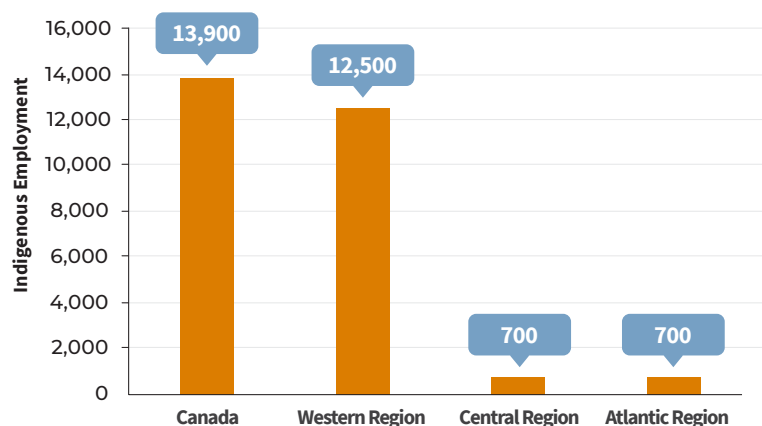
**Source:** PetroLMI estimates based on Statistics Canada Labour Force Survey custom order

**Note:** Includes Peoples who reported being an Indigenous person, that is, First Nations, Métis or Inuit, or those who reported more than one identity. Excluded from the survey's coverage are persons living on reserves and other Indigenous settlements in the provinces as well as those living in the territories.

#### Indigenous employment by region

As Figure 9 shows, Indigenous employment in the oil and gas industry touches every region of Canada, with most employment in Western Canada. Many Indigenous communities are close to industry operations — particularly in British Columbia, rural Northern and Southern Alberta and Saskatchewan (see Figure 10) — making them an accessible labour pool. In fact, due to their proximity, the oil and gas industry, along with mining and forestry, account for the most substantial employment opportunities available to Indigenous communities in remote regions.

**Figure 9: Indigenous Peoples oil and gas employment by region, 2019**

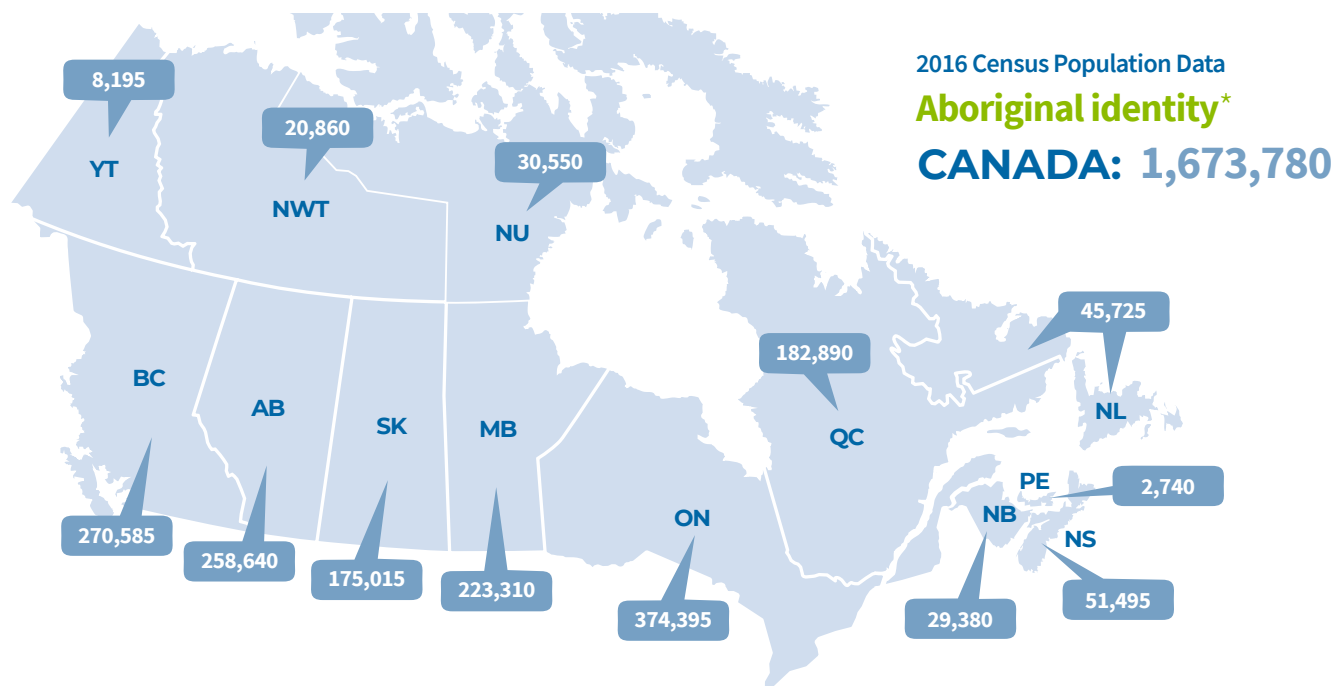


**Source:** PetroLMI estimates based on Statistics Canada Labour Force Survey custom order

**Note:** Western Region includes BC, AB, SK; Central Region includes MB, ON, QC;

Atlantic Region includes NL, NB, NS, PE

**Figure 10: Indigenous population in relation to oil and gas activity**



\* 'Aboriginal identity' refers to whether the person identified with the Aboriginal peoples of Canada. This includes those who are First Nations (North American Indian), Métis or Inuk (Inuit) and/or those who are Registered or Treaty Indians (that is, registered under the Indian Act of Canada), and/or those who have membership in a First Nation or Indian band. Aboriginal peoples of Canada are defined in the Constitution Act, 1982, Section 35 (2) as including the Indian, Inuit and Métis peoples of Canada.

**Source:** Statistics Canada, 2016 Census Population Data

## Indigenous employment by occupation

According to the 2019 labour force survey data from Statistics Canada, the oil and gas industry employed Indigenous Peoples in several occupations as Table 1 shows. The top occupation for Indigenous workers was oil and gas well drillers, servicers, testers and related workers (4,000), and the highest share of employment was power engineers and power systems operators (36%).

*“Indigenous workers earn on average three times as much in oil and gas compared with the average salary of all sectors: \$143,459 vs. \$47,596, according to Statistics Canada. If these dry up, there won’t be a lot of other good employment options waiting for us in our regions.”*

*- Greg Desjarlais, Chief of the Frog Lake First Nation<sup>16</sup>*

<sup>16</sup> <https://www.theglobeandmail.com/opinion/article-indigenous-communities-need-a-strong-oil-and-gas-industry-too/>



**Table 1: Estimated number and share of Indigenous Peoples employed in select oil and gas industry occupations in Canada, 2019**

OCCUPATION (NOC)	NUMBER OF INDIGENOUS PEOPLES EMPLOYED	SHARE OF INDIGENOUS PEOPLES EMPLOYED
Oil and gas well drillers, servicers, testers and related workers (8232)	4,000	14%
Contractors and supervisors, oil and gas drilling and servicers (8222)	1,200	7%
Power engineers and power systems operators (9241)	1,200	36%
Oil and gas drilling, servicing and related labourers (8615)	1,000	16%
Managers in natural resources production (0811)	600	13%
Oil and gas well drilling and related workers and services operators (8412)	400	11%
Central control and process operators, petroleum, gas and chemical processing (9232)	400	6%
Heavy-duty equipment mechanics (7312)	300	6%
Financial auditors and accountants (1111)	200	4%
Petroleum engineers (2145)	200	4%
Inspectors in public and environmental health and occupational health and safety (2263)	200	11%
Industrial electricians (7242)	200	5%
Transport truck drivers (7511)	200	7%
Industrial instrument technicians and mechanics (2243)	100	6%
Construction millwrights and industrial mechanics (7311)	100	5%

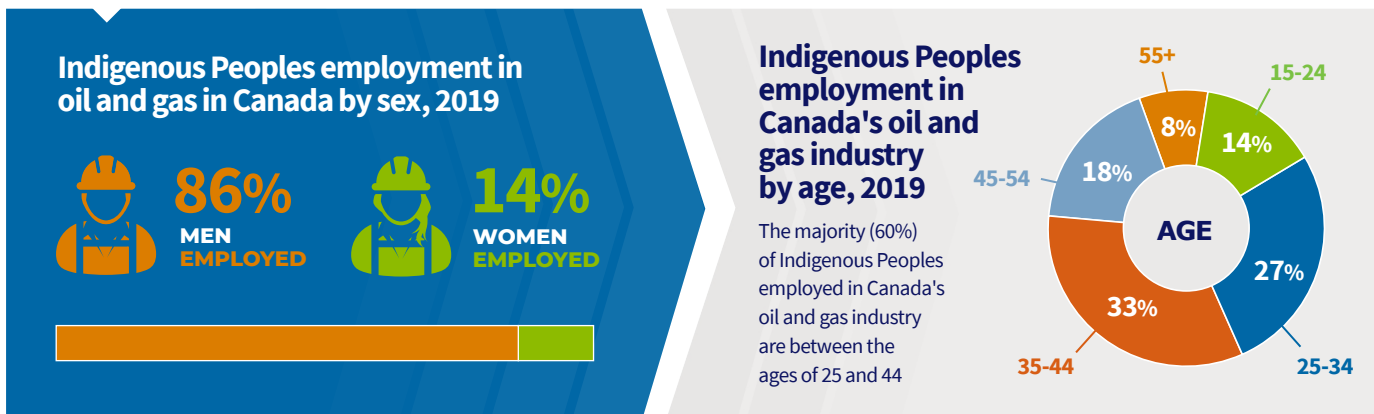
**Source:** PetroLMI estimates based on Statistics Canada Labour Force Survey custom order

## Demographics and labour force characteristics

Young Indigenous Peoples are among the fastest-growing demographic in Canada and represent an enormous future labour pool to the oil and gas industry. Between 2006 and 2016, the Indigenous population grew at four times the rate of the non-Indigenous population, meaning that in less than five years, 350,000 Indigenous youth will reach an age when they could become potential members of the workforce. They could boost the country's economy by \$27.7 billion per year if they are given the support they need to build essential skills

through access to quality, targeted and culturally appropriate education, skills and training.<sup>17</sup>

In 2019, youth aged 15 to 24 represented 14% of the Indigenous oil and gas workforce. The majority (60%) were between the ages of 25 and 44. The workforce is also six times more likely to be male than female, which is not surprising given their representation in occupations involving the trades or oil and gas services which are traditionally male roles.



**Source:** PetroLMI estimates based on Statistics Canada Labour Force Survey custom order

<sup>17</sup> Public Policy Forum (2020) *Mapping the Landscape: Indigenous Skills Training and Jobs in Canada*.

## 4. REALIZING OPPORTUNITIES

**A strong energy industry will be an important part of Canada's economic recovery from COVID-19. With the right conditions, it is estimated that natural resources and manufacturing could create up to 2.6 million new jobs and up to a 17% increase in real GDP. This could amount to a nearly \$200 billion increase in potential labour earnings, while still moving Canada towards a low-emissions future.<sup>18</sup>**

The Government of Canada and many provincial governments have released economic recovery plans targeting investment, job creation and training through infrastructure build outs, energy efficiency strategies and diversifying economies, including providing direct supports to Indigenous communities.

Much of Canada's natural resources development involves the traditional territories and lands of Indigenous communities. Over the years, many Indigenous communities have worked with the oil and gas industry to negotiate benefits associated with resource development, including employment and contracts for local Indigenous businesses to provide goods and services. Indigenous-led organizations such as the First Nations LNG Alliance and the First Nations Major Projects Coalition, have been established to assist Indigenous communities realize these benefits.

In response to the onset of the COVID-19 pandemic, the oil and gas industry has also worked with communities across Canada, including Indigenous communities, to provide immediate relief. For example, LNG Canada announced funding of up to \$500,000 to support the COVID-19 response in both Kitimat and Terrace, British Columbia, with half committed to Northern Health for equipment needs in the region. The remaining half was an

in-kind contribution to support local hospitals, Indigenous communities, frontline workers and service organizations. Shell Canada and Imperial Oil also offered complimentary fuel vouchers, food and coffee to essential workers, like health care providers and long-haul delivery truck drivers, at their retail stations across Canada. Teck Resources announced the creation of a \$20-million fund to support COVID-19 response and future recovery efforts. This funding will go to support critical social initiatives and increased healthcare capacity, including procuring one million masks to be donated for healthcare in British Columbia. These are but a few examples among many.<sup>19</sup>

Looking ahead, collaboration between industry, communities, governments and other stakeholders will be critical to continuing — and growing — possibilities for Indigenous engagement and benefits from the energy sector. Whether it's procurement prospects such as opportunities for Indigenous oilfield services contractors through the Government of Alberta's Site Rehabilitation Program<sup>20</sup>, or through the developing liquefied natural gas (LNG) industry across Canada (particularly in British Columbia), the opportunities are there. In this section, we highlight some areas of opportunity for 2021 and beyond.



<sup>18</sup> <https://energynow.ca/2020/08/the-task-force-for-real-jobs-real-recovery-releases-natural-resource-focused-economic-recovery-plan/>

<sup>19</sup> [https://context.capp.ca/articles/2020/article\\_canadas-energy-sector-steps-up](https://context.capp.ca/articles/2020/article_canadas-energy-sector-steps-up)

<sup>20</sup> <https://www.alberta.ca/support-for-indigenous-oil-field-service-contractors.aspx>

## Expanding Canada's energy mix - the clean energy transition

Indigenous Peoples' engagement in resource development — both from traditional sources and emerging areas — will pave the way for their participation in the future economy.

Canada's energy industry is transforming to one that is cleaner, greener and more efficient. As the energy industry looks to diversify beyond traditional areas of oil and gas production, new opportunities hold promise. Indigenous Peoples are already pursuing clean energy development (see spotlight on page 15 ), and the oil and gas sector is Canada's largest spender on clean technology, accounting for 75% of the 1.4 billion spent annually by all sectors.<sup>21</sup>

**Apart from Crown and private utilities, Indigenous communities and enterprises are the largest single owner of clean energy assets.**



### Renewables

Canada, with its large landmass and diversified geography, has substantial renewable resources that can be used to produce energy. Direct jobs from clean energy are expected to grow at a rate of 3.4% a year between 2020 and 2030 reaching nearly 600,000 jobs by the end of the decade, which is nearly four times the Canadian average.<sup>22</sup> Below are some examples of renewables and the opportunities.

**Geothermal** - Geothermal energy is captured from the heat stored beneath the earth's surface. According to Natural Resources Canada, the highest-temperature geothermal resources are in British Columbia, Northwest Territories, Yukon and Alberta. Development of a Canadian geothermal industry could create over 5,000 new jobs for displaced oil and gas drilling contractors and oilfield service workers as many of the occupations are transferable.<sup>23</sup> Several groups in the oil and geothermal sector have set up a new geothermal alliance to promote this opportunity.<sup>24</sup>

**Solar** - Solar technologies use the sun's energy to generate electricity to heat homes and water. Available solar energy varies depending on the season, weather and the technology used to harness the sunlight. Almost 12% of the medium- to large-scale

Indigenous clean energy projects already underway in Canada involve the use of solar energy.<sup>25</sup> An additional 6.4 gigawatts (GW) of solar capacity — enough to power 1.25 million homes — is expected to be added to Canada's energy mix by 2040 (see Figure 11).

**Wind** - Wind energy has been harnessed for centuries to propel sailing vessels and turn grist mills and water pumps. Today, the kinetic energy generated by wind can be converted into electricity. Turbines with large propellers are erected on "wind farms" strategically located in areas with consistently high winds and that are in proximity to existing electrical grids. Canada has significant potential to expand wind-generated power, which is expected to account for over a quarter of the additions to the country's energy mix by 2040 (see Figure 11). Almost one-quarter of all medium to large Indigenous clean energy projects in Canada are wind power projects, sometimes in collaboration with existing producers.<sup>26</sup> For example, as part of its renewable power portfolio, Suncor Energy has a partnership with the Aamjiwnaang First Nation in the Adelaide Wind Power Project near Sarnia, Ontario.

<sup>21</sup> CAPP (2020). *A Vision for Canada's Recovery: Canada's Natural Gas Industry: Driving Economic Recovery and Environmental Leadership*.

<sup>22</sup> <https://cleanenergycanada.org/canadas-clean-energy-sector-set-to-accelerate-amid-fossil-fuel-slowdown/>

<sup>23</sup> <https://www.globenewswire.com/news-release/2020/05/26/2038565/0/en/The-Canadian-Oil-Service-Sector-supports-the-Emergence-of-New-Canadian-Geothermal-Developers.html>

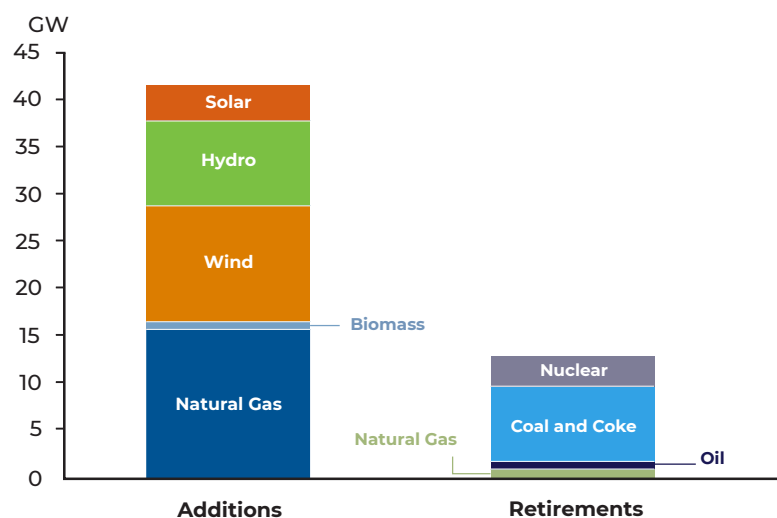
<sup>24</sup> <https://www.thinkgeoenergy.com/canadian-oil-service-sector-joins-forces-to-support-emerging-canadian-geothermal-industry/>

<sup>25</sup> Indigenous Clean Energy (2020). *Accelerating Transition: Economic Impacts of Indigenous Leadership in Catalyzing the Transition to a Clean Energy Future Across Canada*.

<sup>26</sup> Ibid.



**Figure 11: Forecasted additions to Canada's energy mix by 2040**



**Source:** <https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2018/chapter-3-reference-high-low-price-case-results.html>





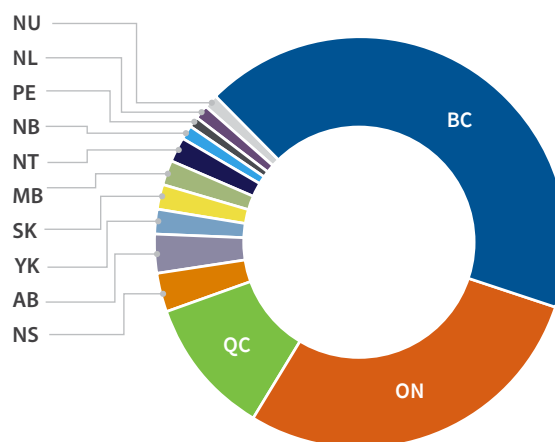
## SPOTLIGHT: Indigenous clean energy projects by the numbers

**Indigenous communities across Canada represent a powerful force in the transition to a clean energy future. There are currently close to 2,500 Indigenous clean energy projects encompassing power generation, electricity transmission, heat production and energy efficiency.<sup>27</sup> They include:**

Close to 200 medium to large renewable energy generating projects either in operation or in the final stages of planning or construction.

- Most of these projects involve partnerships between Indigenous communities and energy sector companies, utilities or developers.
- Since 2017, medium to large Indigenous renewable energy projects across Canada have experienced a 29.6% growth rate.
- Energy sources for these projects are hydro (56.5%), wind (22.9%), solar (11.8%), bioenergy (7.1%) and hybrid sources (1.7%).
- British Columbia, Ontario and Quebec are the top three jurisdictions in terms of primary Indigenous renewable power projects. This is partly due to provincial policies and procurement programs for independent power production (IPP), which promote and support Indigenous participation.

**Figure 12: Provincial and territorial distribution of medium to large Indigenous renewable energy projects**



Source: Indigenous Clean Energy (2020)

**“As the world shifts towards renewable energy, a digital economy and the Internet of Things (IoT), Indigenous communities stand to benefit significantly. In part this is due to necessity, but it is also because of the alignment with Indigenous cultural values, philosophies and worldviews.”**

— **David Isaac**, President,  
W Dusk Energy Group

**Listen** to David Isaac’s [podcast](#) here.



<sup>27</sup> Indigenous Clean Energy (2020). *Accelerating Transition: Economic Impacts of Indigenous Leadership in Catalyzing the Transition to a Clean Energy Future Across Canada*.

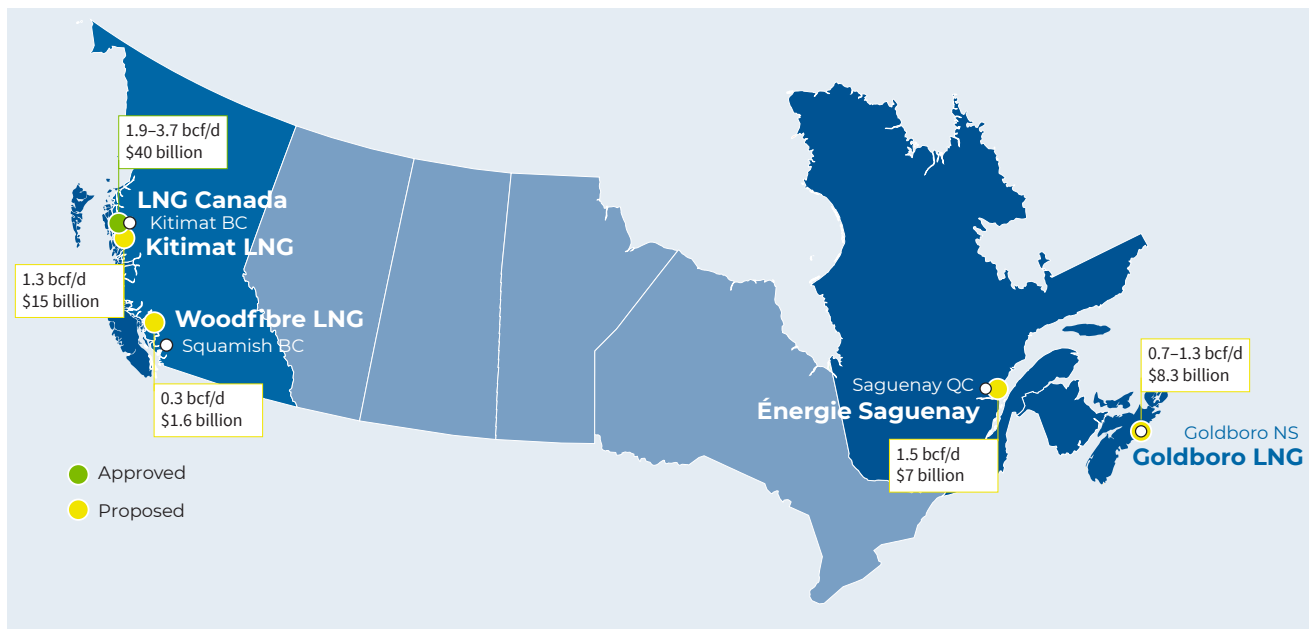
## New products and services

**LNG** - Serves markets for natural gas when pipeline access is not feasible. Unlike domestic distribution through North America's vast network of pipelines, shipping to markets overseas requires the natural gas to be cooled into a liquid state for ease, safe storage and efficient transportation of large volumes. The development of an LNG sector represents a significant opportunity for Canada's energy industry, including the ability to tap into new markets for its surplus production and meet the growing global demand for natural gas. At the same time, Canada can help reduce global carbon emissions by replacing the use of more carbon-intensive fuels such as coal and diesel with natural gas, particularly in developing countries.

A \$40 billion LNG Canada export facility is under construction at Kitimat, British Columbia, and is expected to be in operation by the middle of this decade. Other LNG projects at various stages of proposal or sanctioning include Kitimat LNG and Woodfibre LNG, also in British Columbia; Énergie Saguenay in Quebec; and Goldboro LNG in Nova Scotia.

Development of an LNG industry in Canada is expected to create or sustain 10,000 direct or indirect jobs nationally.<sup>28</sup>

**Figure 13: Key LNG projects in Canada**



**Source:** JWN Energy, *LNG Canada's Supply Chain Opportunities*



<sup>28</sup> PetroLMI (2020). *The LNG Opportunity in Canada: Employment Prospects and Requirements*.

## SPOTLIGHT: Indigenous Peoples and LNG

**A sustainably developed LNG industry represents new long-term opportunities for Indigenous communities to partner in economic development that brings skills training and jobs along with increased revenue and growth.**

LNG project proponents and developers along Canada's West Coast, for example, have worked with a vast number of local Indigenous groups to engage early, build relationships and incorporate Indigenous interests. Of the 634 Indigenous communities in Canada, one-third are in British Columbia.

As a result of these efforts:

In 2019, more than 600 people were employed on the LNG Canada project, 45% of whom were from the Kitimat and Terrace area and many of them Indigenous. The LNG Canada project workforce included almost 10% Indigenous workers at the end of 2019. LNG Canada has also concluded agreements with all Indigenous communities affected by the proposed LNG processing and export terminal project, which includes the procurement of goods and services.

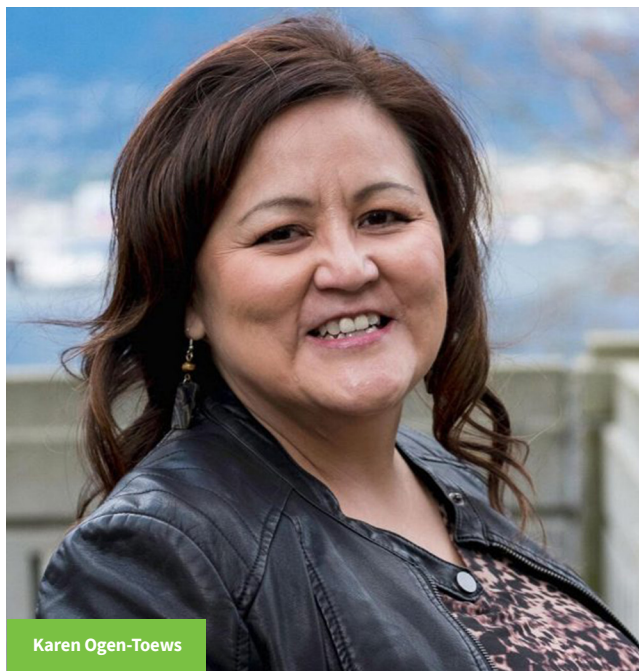
Meanwhile, contractors from the associated Coastal GasLink pipeline project employed 1,100 workers, of which 400 were Indigenous, mostly from the 20 British Columbia bands that have signed agreements. The owners proposed spending \$1 billion of its \$6.6 billion budget providing direct funding, employment and training opportunities for affiliated First Nations.<sup>29</sup>

The First Nations LNG Alliance, a collection of First Nations, have come together to create education and awareness about LNG so that Indigenous communities can make an informed decision about LNG development on their lands. It has advocated and is a proponent factor of these kinds of opportunities.

Karen Ogen-Toews, CEO of the First Nations LNG Alliance and former Chief of the Wet'suwet'en First Nation, explains the work of the alliance, which has focused on three primary streams that go beyond what is negotiated in benefits agreements: procurement opportunities including giving Indigenous companies first rights to bid on work; employment and training

opportunities, including tracking of these numbers to make sure Indigenous Peoples are 'represented on the line'; and, making sure of adherence to the highest environmental standards.

Like many other provinces, British Columbia is investing in Indigenous skills training projects and partnerships, providing \$30 million through the Indigenous Skills Training Fund for training programs delivered to Indigenous communities, primarily in Northern British Columbia. Since the fund was launched in 2015, more than 2,700 Indigenous Peoples were trained between 2015 and 2017 and another 1,000 were projected to access training in 2017/2018.<sup>30</sup>



Karen Ogen-Toews



**"We want to communicate what it takes to engage with Indigenous Peoples, including the importance of relationship-building and consultation. It needs to be an inclusive process. We need to be frank about how First Nations want economic reconciliation and what that means."**

**— Karen Ogen-Toews, CEO, First Nations LNG Alliance**

To learn more, [listen](#) to her [podcast](#).

<sup>29</sup> June Warren (2020). *Building Trust: Canadian LNG Developers and First Nations. Canada and the Natural Gas Economy Special Report 3.*

<sup>30</sup> [www.bclngalliance.com](http://www.bclngalliance.com)



**Reclamation** - A labour supply will also be needed for land reclamation work. Reclamation means returning disturbed land to a usable state once oil and gas operations have wound down. In April 2020, the federal government announced a \$1.7 billion program to reclaim inactive, or orphan oil and gas wells, in Western Canada, with \$1 billion of it destined for work in Alberta.

The program is designed to stimulate work in the hard-hit oil and gas services sub-sector – and to protect and maintain thousands of jobs - while reducing the environmental risk from aging infrastructure. Eligible work for the program includes closure work on inactive wells, pipelines and facilities, including remediation and reclamation, and environmental assessments. Many of the occupations associated with the activities are the same skilled workers found in the services sub-sector. These include occupations such as oil and gas well service rig workers, pressure pumpers, testers and related workers, heavy equipment operators and labourers.

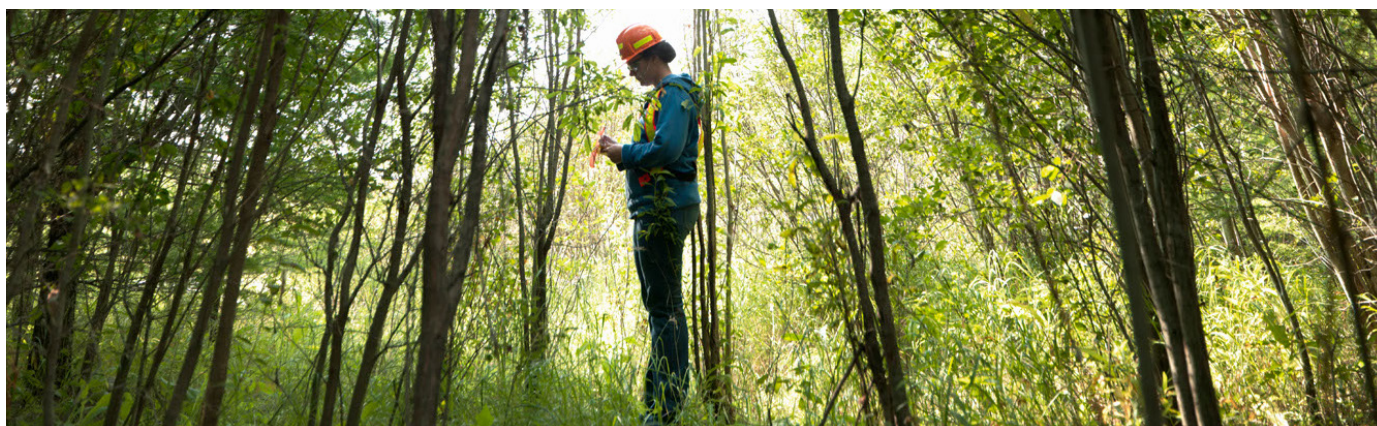
Broad Indigenous participation in the program is expected with provinces being asked to set aside 10% of the funding received to Indigenous groups.<sup>31</sup> In addition to the employment and business opportunities this creates for communities, the energy industry also benefits from local Indigenous knowledge, including deeper understandings of the land and traditional land use. Companies such as Indigenous-owned Backwoods Energy Services and Western Petroleum Management are among the first to be approved under the program.

**Trans Mountain Pipeline Expansion** – Work is currently underway on a project to triple the capacity of the Trans Mountain pipeline to transport product from Strathcona County (near Edmonton, Alberta) to Burnaby, British Columbia. Including direct, indirect and induced jobs, Trans Mountain expects that during construction the total workforce will reach the equivalent of 15,000 full-time direct, indirect

and induced per year, followed by a further 37,000 direct, indirect and induced jobs per year of operations.<sup>32</sup> To date, the project and its contractors have hired more than 8,470 people, more than 800 of whom are Indigenous. Trans Mountain says the primary objective of its engagement with impacted Indigenous communities is to maximize economic opportunities including contracting, employment and skills training. The company has announced 21 agreements with local governments along more than 95% of the pipeline route that will provide more than \$10 million in funds to help with a variety of locally determined projects.<sup>33</sup>

**Hydrogen** - Canada ranks in the top 10 global hydrogen producers and with about three million tonnes of hydrogen annually produced for industrial use — approximately 4% of the global total. Most hydrogen in Canada is produced by the chemical industry from fossil fuels (53%) and the oil and gas sector (47%). Geographically, most hydrogen is produced in Western Canada (76%), followed by Central Canada (17%) and Atlantic Canada (7%).<sup>34</sup> As a cleaner fuel source, hydrogen has the potential to be significant in reducing the country's overall carbon emission while contributing to economic growth. Both federal and provincial levels of government, including Ontario, British Columbia and Alberta, have announced strategies, including fiscal incentives, to spur the development of a hydrogen economy in Canada, estimated to have a \$1 billion potential.<sup>35</sup>

**Biomass**— Biomass is a biological material in solid, liquid or gaseous form with sunlight stored in the form of chemical energy, such as wood, peat and agricultural by-products. Biofuels derived from renewable sources are a growing form of energy in Canada. In 2013, Canada accounted for 2% of world biofuels production — the fifth-highest in the world after the United States, Brazil, the European Union and China, according to Natural Resources Canada. There are two main biofuel types produced in Canada: ethanol (a gasoline substitute) and biodiesel (a diesel substitute). Approximately 7% of medium to large Indigenous clean energy projects in Canada use power from biomass.<sup>36</sup>



<sup>31</sup> <https://www.cbc.ca/news/business/irc-site-rehabilitation-orphan-inactive-well-1.5629036>

<sup>32</sup> <https://energynews.ca/2020/09/seven-reasons-the-trans-mountain-pipeline-expansion-is-good-for-canada-deborah-jaremko-cec/?source=de&wtv=carol.howes@enform.ca>

<sup>33</sup> <https://www.transmountain.com/benefits> (accessed November 2020)

<sup>34</sup> <https://cleanenergycanada.org/hydrogen-as-part-of-canadas-energy-transition/>

<sup>35</sup> <https://financialpost.com/commodities/a-100b-opportunity-alberta-could-emerge-as-canadas-first-hydrogen-energy-hub-report-says>

<sup>36</sup> Indigenous Clean Energy (2020). *Accelerating Transition: Economic Impacts of Indigenous Leadership in Catalyzing the Transition to a Clean Energy Future Across Canada*.



## Supporting Indigenous entrepreneurship

According to the Canadian Council for Aboriginal Business (CCAB), Indigenous entrepreneurs are a fast-growing segment of the economy, creating new jobs while addressing community needs. In 2017, there were more than 19,000 Indigenous businesses in Canada, generating over \$10 billion in revenue, more than half in British Columbia.<sup>37</sup> Moreover, Indigenous-owned businesses are 40 times more likely to be involved in the mining and oil and gas sectors than the average Canadian business.<sup>38</sup>

Opportunities in the energy industry can support Indigenous entrepreneurship, further industry's commitment to economic reconciliation and foster innovation. For example, Wapahki Energy, owned by the Heartlake First Nation in Alberta, is producing bitumen pucks (known as Canapux) which would allow the product to be shipped around the world cost-effectively without the use of pipelines or tankers, and is potentially a game-changer.<sup>39</sup>

**Between 2015 and 2016, \$3.3 billion was spent by oil sands companies on procurement from approximately 400 Indigenous-owned companies across 65 Alberta communities.**<sup>40</sup>

### Economic Reconciliation

The energy industry's focus on Indigenous engagement is part of a broader effort to support "economic reconciliation". CAPP defines economic reconciliation, within the broader spirit of reconciliation, as identifying and finding feasible ways to share economic opportunities arising from resource development, while continuing to learn, improve, and grow strong relationships based on trust and respect. Reconciliation actions include the constitutional duty to consult, equity partnerships, benefit agreements, community investment and environmental management. Interested in learning more about how companies can create inclusive workplaces and support reconciliation?

**Listen** to this [podcast](#) with **Bob Joseph** with Indigenous Corporate Training about making reconciliation a reality.



<sup>37</sup> Statistics Canada (2019). *A Profile of Businesses in Indigenous Communities in Canada*. <https://www150.statcan.gc.ca/n1/pub/18-001-x/18-001-x2019002-eng.htm>

<sup>38</sup> <https://energynow.ca/2020/08/the-task-force-for-real-jobs-real-recovery-releases-natural-resource-focused-economic-recovery-plan/>

<sup>39</sup> <https://www.cbc.ca/news/business/cn-rail-canapux-1.4982153>

<sup>40</sup> CAPP (2018). *Toward a Shared Future: Canada's Indigenous Peoples and the Oil and Natural Gas Industry*.

## A Day in the Life: Alberta's Cold Lake First Nation's James Blackman and the Primco Dene Group of Companies

James Blackman was the youngest-ever elected council member to the Cold Lake First Nation in Northern Alberta and is President of Primco Dene Group of Companies. From catering, retail and maintenance to security, medical services and more, Primco supports oil and gas companies in a myriad of ways. And with Indigenous people comprising 76% of its approximately 750 employees, it is now the largest employer in the Cold Lake First Nation—a real point of pride for James and his community.

As an Indigenous leader for the last two decades, James learned early the benefits of partnering with the oil and gas industry to develop diverse employment opportunities for the Cold Lake First Nation and beyond. His role as a council member meant not only would he explore opportunities the energy industry presented for his community, but also that he would become deeply involved in the negotiations with government around the Cold Lake First Nation land claim. The land claim was successfully negotiated and includes, among other things, the requirement that any oil and gas development in the region requires consultation with the Cold Lake First Nation and benefits agreements with industry are created to provide employment, training and procurement opportunities for the community.

When James started on council, the unemployment rate in his community was between 65 and 75% for its 2,500 members at the time. The high unemployment solidified his desire to build something meaningful that could create long-term employment. As President of Primco Dene Group of Companies, he has done just that, and then some. At its peak, Primco was employing over 850 Indigenous workers, with 75 to 85% of the workforce coming from 112 Indigenous communities from three provinces – Alberta, Saskatchewan and Manitoba.

“Our first goal when working with industry was to get more of our people working in the trades and get a diverse set of work across services because not everyone wants to work as a heavy equipment operator,” says Blackman.

“The more diversity of employment we could create through our businesses, the greater our chances of employing and attracting more people and having the continuous Indigenous support we needed.”

Blackman says one of the most important things communities can do when working with industry is to be honest about their capacity, and to work with a partner if needed.

Even through COVID-19, Blackman is proud Primco Dene Group of Companies' sustained a high level of Indigenous employment for the Dene and Cree communities in the Cold Lake First Nation — reducing the workforce by only 5%.

His story demonstrates that strong leaders with a vision and sense of purpose for the future can work with their community and the energy industry to create long-term success and employment opportunities.

Equally important, Indigenous businesses mostly hire Indigenous workers: on average, Indigenous Peoples comprise more than half (54%) of employees in Indigenous-owned private firms.<sup>41</sup> Facilitating access to capital, developing Indigenous-focused financial services for communities, and improved educational opportunities will be key drivers in moving Indigenous entrepreneurship forward, according to Keith Martell, the president and CEO of First Nations Bank of Canada.<sup>42</sup>



James Blackman

<sup>41</sup> Public Policy Forum (2020). *Mapping the Landscape: Indigenous Skills Training and Jobs in Canada*.

<sup>42</sup> <https://thefutureeconomy.ca/interviews/keith-martell/>

## SPOTLIGHT: More than dollars and cents - Community Futures Treaty Seven Business Resources Group

**Community Futures Treaty Seven provides business loans to members with small businesses operating on treaty lands, but over the years has morphed into something more.**

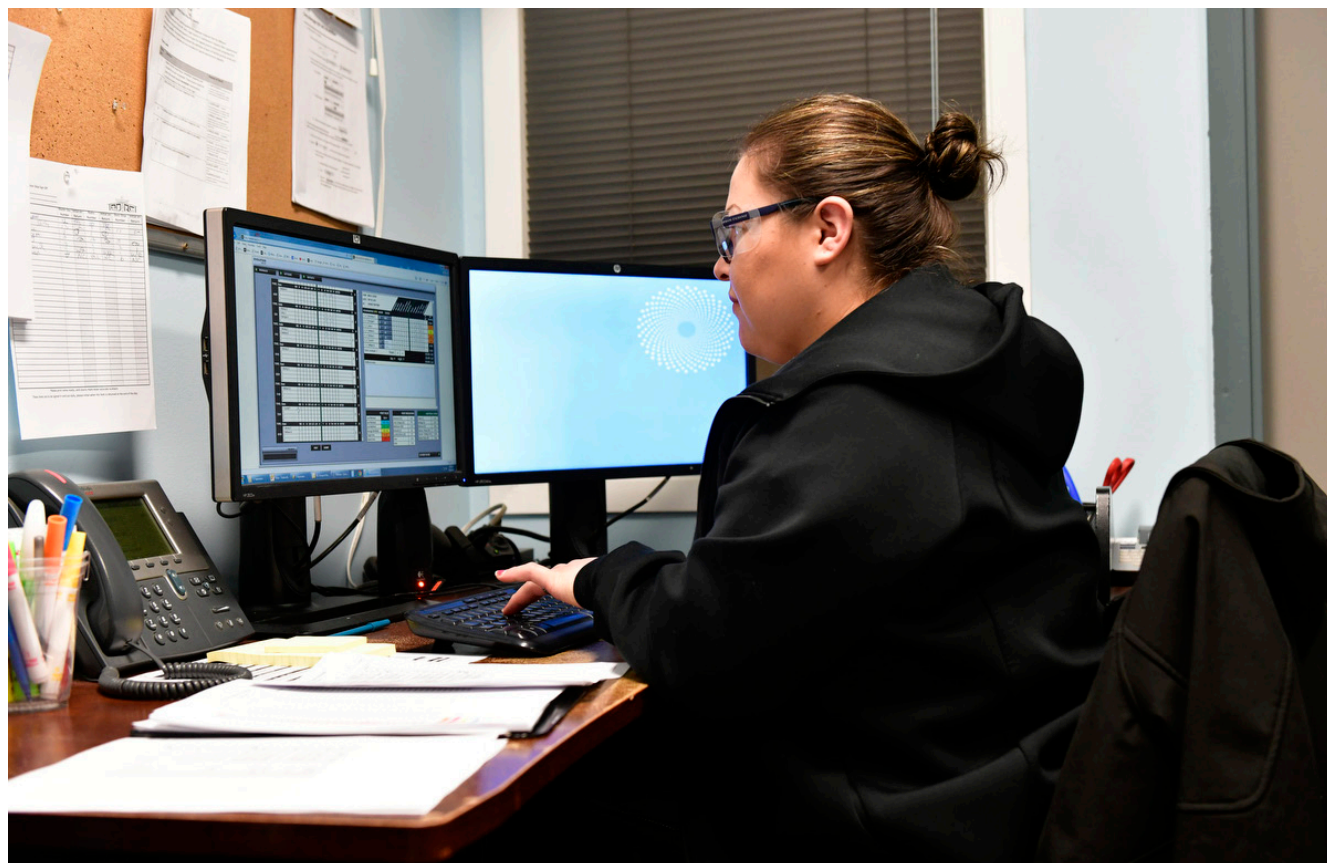
“We realized we needed to do more than financial lending to support Indigenous entrepreneurs. We needed to create a network of support and facilitate opportunities for learning and sharing,” says Shawna Morning Bull, Community Futures Treaty Seven Business Manager.

A core mandate of the program remains providing financing of up to \$33,000 to Treaty 7 Nation members to support business creation or expansion. The loans can be used for asset purchase or equity or joint venture participation, with an emphasis on loans to businesses that would not otherwise qualify at a conventional financial institution and whose activities will generate long-term full-time on- or off-reserve employment for Treaty 7 members. This financing is also supported by a Business Resources Group, which provides a circle of support to help these businesses thrive and succeed over the longer term.

“Whether running a contract readiness workshop so our members understand prequalification requirements for doing business, holding taxation seminars, or showcasing other successful entrepreneurs as role models, the Business Resource Group acts as a true entrepreneurial hub supporting members through more than just lending,” says Morning Bull.

“For example, throughout the pandemic we’ve compiled information on resources available to help small businesses, and hosted workshops related to mental health and how companies can reinvent themselves in the face of COVID-19.”

The Business Resource Group advisory committee includes representation from industry, other Indigenous associations, financial institutions, and government. It is viewed as a best practice by the Aboriginal Financial Officers Association of Canada.





## 5. OVERCOMING BARRIERS AND SHARING BEST PRACTICES

**Indigenous Peoples face unique barriers that have affected their full participation in the energy industry. These include how they look for work, skills gaps, remoteness of Indigenous communities, as well as the intergenerational effects of the residential school system.**

With pre-employment training, targeted strategies to attract and retain Indigenous workers, culturally appropriate programming to upgrade essential skills including digital literacy, and arrangements like equity partnerships that support the economic and social resilience of communities, rates of employment and success can be improved.

### Attracting and retaining Indigenous workers

To support Indigenous Peoples in overcoming the barriers they face when seeking work in the sector, understanding how Indigenous Peoples look for work can help.

According to 2017 data from Statistics Canada on the labour market experiences of First Nations people living off reserve, Métis and Inuit Canadians:

- Almost half of those seeking work in Canada contacted employers directly.
- More than 50% searched the internet for opportunities.
- About 20% found work through friends or relatives.
- About 16% reached out to public employment agencies such as the Service Canada Centre or the Canada Employment Centre (or provincial equivalent).
- Community bulletin boards and radio were used by about 7% of those seeking work.
- Only slightly more than 5% of Indigenous Peoples contacted an Indigenous organization or Indigenous employment agency.
- Being referred or seeking opportunities through a co-worker represented less than 5% of those seeking work.<sup>43</sup>

These findings have implications for how energy companies can target their recruitment strategies, with the most obvious being direct engagement with communities and targeted internet recruitment such as posting on Indigenous job boards (see Section 6 of this report).

Many companies are also committed to going the extra mile in diversifying their workforce and including Indigenous Peoples.

Some best practices have included:

- Establishing personal relationships through face-to-face interaction with leaders in Indigenous communities before beginning recruitment activities.
- Advance planning to increase the likelihood of forming a successful recruiting partnership - companies which have carefully planned their initial contact with communities and approached them to form a partnership that benefited both the company and the community have been the most successful.
- Corporate policies that set measurable goals for Indigenous employment.
- A plan for retention - prior to hiring - to set recruits up for success, such as multiple hiring, mentoring and cultural training for their people.
- Onboarding processes designed to assist new workers transition to full-time employment.
- Benefits tailored to workers.
- Assistance with transportation and accommodation arrangements for Indigenous employees working away from home.<sup>44</sup>



<sup>43</sup> Statistics Canada (2017). *Labour Market Experiences of First Nations People Living Off Reserve, Métis and Inuit, Canada*.

<sup>44</sup> PetrolMI (2014). *HR Trends and Insights: Aboriginal Employment in Saskatchewan's Oil and Gas Industry*.



## Indigenous workers and education

Indigenous youth, in particular, face a unique barrier when seeking work in the oil and gas sector: access to formal education. Formal education opportunities are often not available in remote communities, requiring them to leave or travel long distances to gain the education needed. This can be a deterrent and can also create cultural barriers between those who leave the community and those who do not. The significance of the oil and gas industry offering workplace training, mentoring and employment programs, such as apprenticeships, cannot be overlooked.

For example, in Northern British Columbia, Canbriam Energy and other energy partners are participating in Indigenous operator training initiatives, joint venture partnership job training, along

with providing scholarship opportunities at Northern Lights College. Similarly, the Northeast Alberta Apprenticeship Initiative (NEAA) is an example of a successful program that addresses skill shortages. The partnership is between industry, First Nations, post-secondary institutions and the Alberta and federal governments, and provides a blended distance-learning and support system for trades' apprenticeships for Indigenous and non-Indigenous workers. Training is delivered through various modes: online, mobile trades training unit, site-based, 3D simulations, and distance learning. Training can also be offered in home communities where possible, to minimize the number of barriers encountered by this segment of the population.

## Addressing skill gaps and facilitating the transition to a digital future

As the energy industry moves towards a more complex, technical, increasingly automated and digital environment, the nature of skills required to be successful has shifted as Figure 14 below shows.

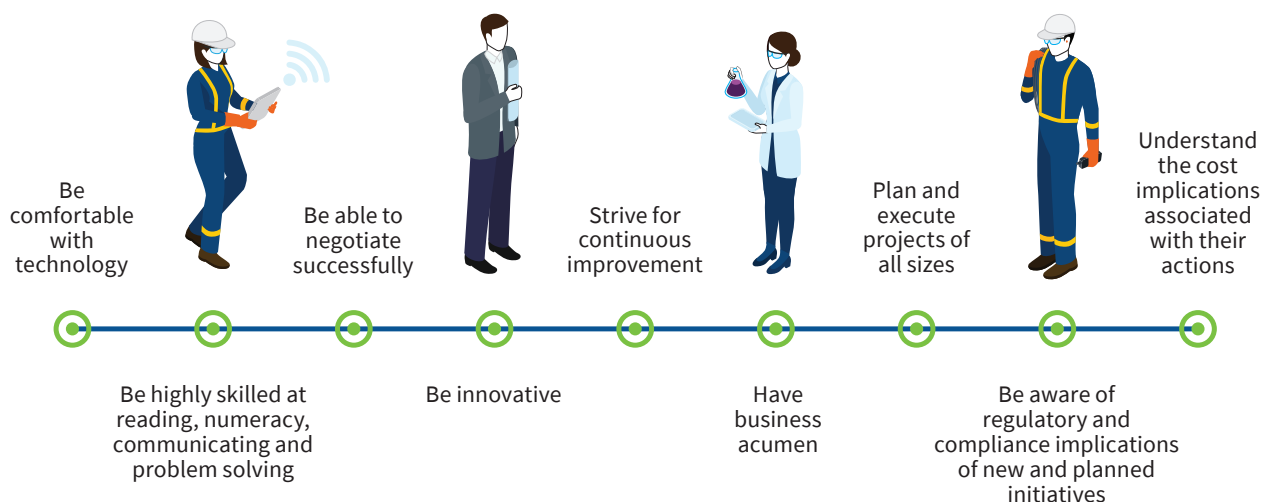
The shift has meant required levels of literacy are rising across occupations. Unfortunately, there is a lack of parity between Indigenous Peoples when it comes to education, particularly at the post-secondary level. According to the Canadian Council for Aboriginal Business, 25.6% of Indigenous Peoples aged 25 to 64 did not have a post-secondary degree, diploma or certificate. The corresponding percentage for the non-Indigenous population was 10.81%.<sup>45</sup>

Contributing factors have been identified as:

- Remoteness, including a lack of access to post-secondary and/or training/mentorship opportunities (Nunavut, for example, does not have a university).
- Intergenerational effects of residential schools.
- Lack of funding for on-reserve education.<sup>46</sup>

These factors have exacerbated existing literacy skills gaps while also increasing the challenge of transitioning to an increasingly digitally-enabled workplace.

**Figure 14: Persona profile of the modern energy worker**



<sup>45</sup> Canadian Council for Aboriginal Business (2020) *Digital Differences: The Impact of Automation on the Indigenous Economy in Canada*.

<sup>46</sup> Ibid.

**Figure 15: Vulnerable roles to automation: Indigenous employment vs. non-Indigenous employment by region<sup>47</sup>**

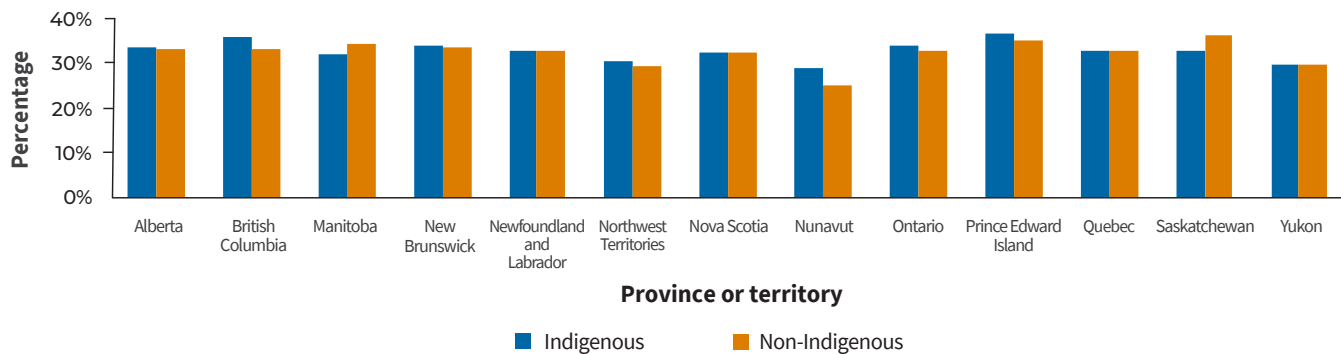
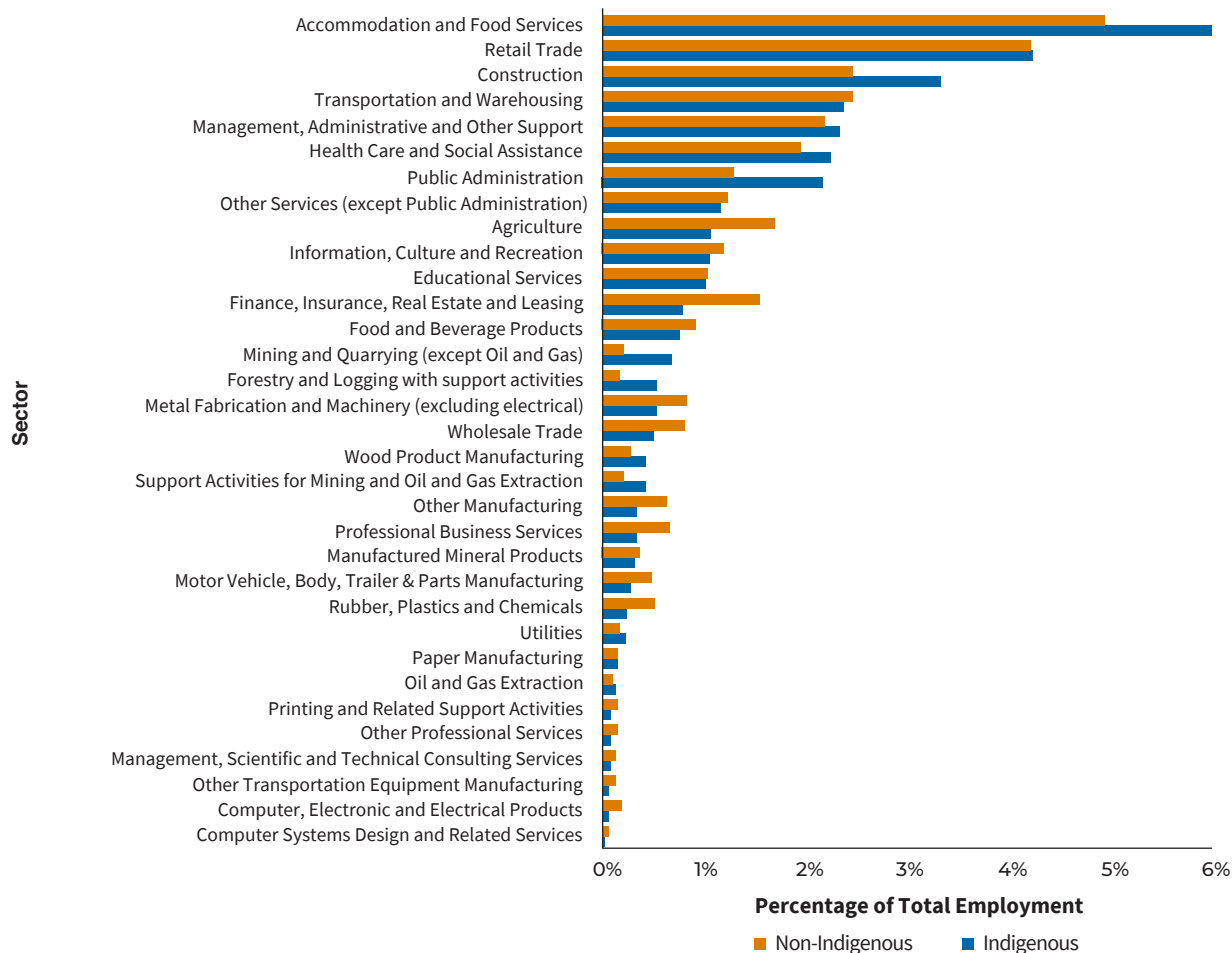


Figure 15 shows that Canada-wide, 33.81% of Indigenous workers are currently employed in roles with a high risk of vulnerability — that is, they risk being disrupted by automation — with Prince Edward Island (36.89%), British Columbia (36.12%), New Brunswick (34.37%), Ontario (34.14%) and Alberta (33.94%) all above the national average for this risk.<sup>48</sup>

Within the oil and gas industry specifically, workers are more

than 20% less likely than their non-Indigenous counterparts to be employed in professional or managerial Skill Level A and B type roles as Figure 16 illustrates. Professional/managerial occupations reflect the non-routine cognitive tasks that make them less likely to be at risk from automation, where Skill Level C or D roles typically involve routine tasks that are more likely to be automated.<sup>49</sup>

**Figure 16: Skill gaps by sector for Indigenous employees vs. non-Indigenous employees<sup>50</sup>**



<sup>47</sup> CCAB (2020) *Digital Differences: The Impact of Automation on the Indigenous Economy in Canada*.

<sup>48</sup> Ibid.

<sup>49</sup> Ibid.

<sup>50</sup> Ibid.

Some organizations looking to transition to a more digital workplace are preparing these workers and new entrants. Further, according to CCAB, organizations that employ a large number of Indigenous Peoples “have an obligation” to anticipate industry trends that may put segments of their workforce at risk of automation and implement an upskilling program to help retain Indigenous workers. Such a program should measure core skills and competencies and then develop a strategy to address current and future skills deficits.<sup>51</sup> For example, the Oil Sands Community Alliance (OSCA) works with active members, which includes Indigenous communities, to forecast employee numbers, identify required skills and help to retain an adequate supply of skilled workers in Alberta’s oil sands.

The good news is that Indigenous Peoples have higher attainment rates than non-Indigenous Canadians in college and the trades. Among those with a post-secondary education, Indigenous Peoples (38.3%) were more likely than non-Indigenous graduates (36.2%) to complete a program below the bachelor’s level (trades or college programs).<sup>52</sup>

The CCAB highlights this as an encouraging trend arguing every effort should be made to upskill the Indigenous workforce to participate in jobs that require more technical skills and are better insulated from the effects of automation. For employers, this could mean facilitating formal and informal training opportunities to learn new skills and build on existing ones.<sup>53</sup>



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<sup>51</sup> CCAB (2020) *Digital Differences: The Impact of Automation on the Indigenous Economy in Canada*. p. 16

<sup>52</sup> Ibid.

<sup>53</sup> Ibid.

## SPOTLIGHT: Digital training for youth

**Many eager, talented and capable youth lack the skills and/or access needed to launch successful careers in the tech sector. Conversely, many organizations across Canada have unfilled, entry-level information and communication technology (ICT) jobs. Despite an additional 61,000 tech workers last year Canadian companies posted job openings for 116,000 tech positions.<sup>54</sup>**

The [NPower Canada Digital Skills Training and Employment Program](https://npowercanada.ca/our-model/) bridges the gap between non-traditional and diverse job seekers and employers hiring ICT talent, providing participants with free in-demand digital and professional skills training, and connecting them to career opportunities with some of Canada's largest employers.

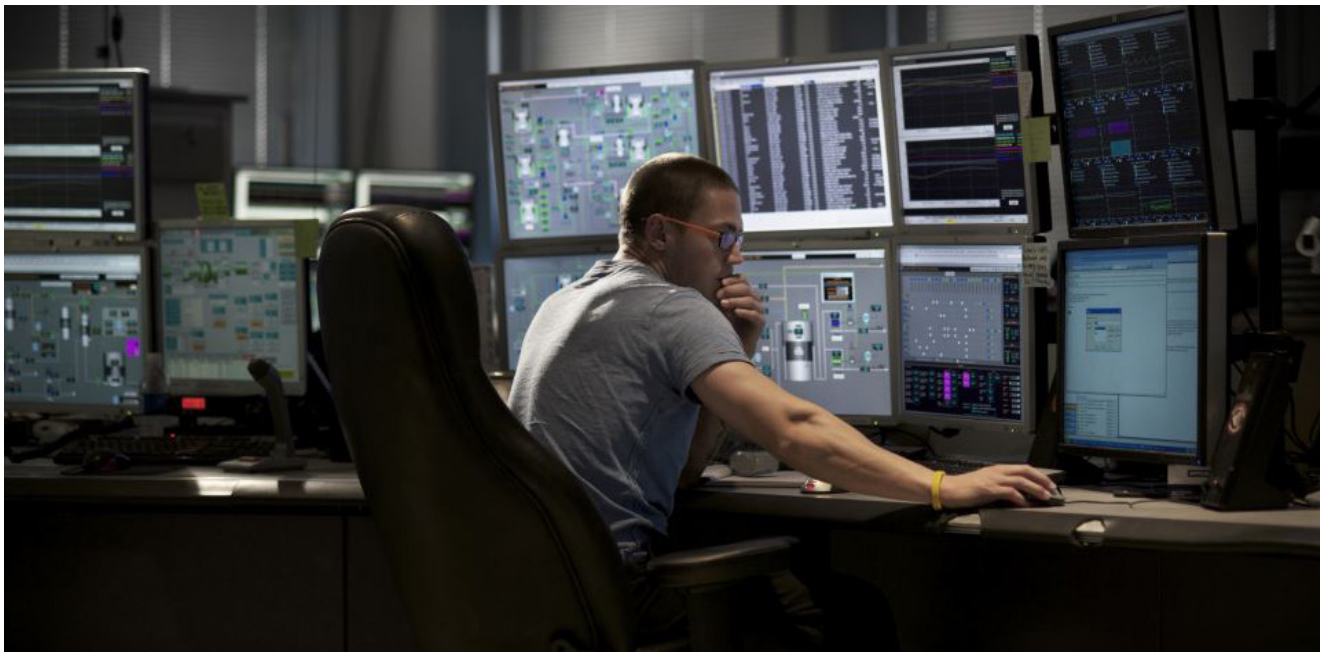
As part of this work, NPower Canada created a Tech Pathways program aimed at Indigenous youth aged 18 to 29 to assist them with securing entry-level roles in the world of technology. For Tech Pathways, NPower Canada partnered with the Miskanawah First Nation in Southern Alberta, part of Treaty Seven, to co-teach and deliver the cultural component of the program to Indigenous youth in that community.

While a core pillar of the program is technical training, professional development (resume writing, interview skills, LinkedIn profile building) and soft skills development (time management, interpersonal development) are also important aspects of the program that are included.

In addition, incorporation of traditional culture — like community Elder participation, sharing circles, and opportunities for expression through art — have been included to provide an additional level of support to students. Students are also given learning assessments so the program leaders can understand more about each student's specific learning style and tailor their teaching accordingly.

“What we are striving to achieve with this program is a culturally safe place where participants feel supported, where their confidence and trust is built up, and where they get the foundational and technical skills needed to launch their careers in the tech sector,” says Regional Director for Calgary, Lisa Moon.

Graduates of the program are followed for five years to provide them with additional in-demand technical training for their employment journey and career path.



<sup>54</sup> <https://npowercanada.ca/our-model/>



## Promoting and sustaining community well-being

A community's overall well-being is measured along four critical components: education, labour force activity, income and housing. According to the CD Howe Institute in their examination of the community well-being (CWB) scores of Indigenous communities across Canada, "well-governed First Nation communities with access to business opportunities – for example, those with treaty rights relevant to development of resource projects – realize employment benefits and higher CWB scores."<sup>55</sup> In terms of the energy industry, an analysis of the economic outcomes for four Indigenous communities involved in the oil sands showed less dependency on government transfers, lower unemployment, and higher incomes.<sup>56</sup>

Canada's oil and gas industry and Indigenous communities have been working together for decades on ways that the oil and gas industry can contribute to boosting community well-being. Between 2015 and 2016 industry investment in Indigenous communities was \$48.6 million. Funding went toward community activities, in-kind investments and contributions to community infrastructure.<sup>57</sup> And because companies would rather employ a local workforce than a remote one, many Indigenous communities have benefited due to their proximity to oil and gas operations. Employing local workforces rather than remote workers benefits the community and the company by reducing transportation costs, reducing negative social/community impacts, improving community well-being through job creation, community investment and procurement opportunities for local businesses.

In one example, Cenovus Energy is taking action to build housing in Northern Alberta, helping to alleviate an ongoing shortfall of adequate housing in Indigenous communities. Cenovus committed \$10 million annually for five years to build new homes in First Nation and Métis communities near the company's Christina Lake and Foster Creek oil sands projects. Better housing brings people back home and keeps them there.

Cenovus will also work with the communities to develop training programs, so local residents can participate in the building and maintenance of the new homes, creating sustainable education and employment opportunities over the long term.

**Learn more about how Cenovus works with communities from Lise Warawa, Community and Indigenous Affairs Advisor for Cenovus Energy.**

**Check out this podcast!**

**Listen** to Lise Warawa's [podcast](#) here.



Lise Warawa (centre)

<sup>55</sup> CD Howe Institute (2020). *No Easy Answers: Insights into Community Well-Being Among First Nations*.

<sup>56</sup> <https://www.canadianenergycentre.ca/research-brief-canadas-oil-sands-and-local-first-nations/>

<sup>57</sup> CAPP (2020) *Collaborating for Mutual Benefit: Indigenous Peoples and Canada's Energy Industry*.

## SPOTLIGHT: Equity partnerships

**Innovative business arrangements, such as opportunities for Indigenous communities to have an equity stake in planned development projects, are critical for the energy industry moving forward.**

Not only do these arrangements provide opportunities for Indigenous communities to play a role in how energy is developed, but they also provide sustainable long-term revenue to fund education, health care, infrastructure and other community priorities.

Examples of large equity partnership announcements include:

**Natural Law Energy (NLE), an Indigenous group, has indicated they will make an equity investment of up to \$1 billion in TC Energy's Keystone XL pipeline project.** The NLE represents a coalition of First Nations in Saskatchewan and Alberta. This agreement also includes the potential of pursuing an interest in future oil projects. TC Energy plans to apply a similar ownership model to additional Indigenous communities along the Keystone XL corridor, both in Canada and the United States.<sup>58</sup>

**Suncor's joint venture with Fort McKay and Mikisew Cree First Nations on its East Tank Farm Development was one of the first.** The two First Nations invested approximately \$500 million to acquire a 49% interest in a tank farm — a bitumen and diluent storage, blending and cooling facility located approximately 30 kilometres north of Fort McMurray, Alberta primarily dedicated to servicing bitumen production from Suncor's Fort Hills oil sands mining project.

Fort McKay First Nation Chief Jim Boucher said at the time:

"The deal represents the largest business investment to date by a First Nation entity in Canada, and not only demonstrates the great potential for partnerships between First Nations and industry but serves as a model for how First Nations can achieve greater self-determination through financial independence. This deal is built on a foundation of trust and collaboration between Fort McKay, Mikisew and Suncor; this is an example of how First Nations and natural resource development companies can find ways to support each other for the mutual long-term benefits."<sup>59</sup>

**Learn more about improving opportunities for Indigenous participation in the energy industry, including equity partnerships, from JP Gladu, former CEO of the Canadian Council for Aboriginal Business.**

**Check out this podcast!**

**Listen** to JP Gladu's [podcast](#) here.



<sup>58</sup> <https://www.tcenergy.com/announcements/2020-11-17-tc-energy-and-natural-law-energy-sign-definitive-agreement/>

<sup>59</sup> <https://www.suncor.com/en-ca/newsroom/news-releases/suncor-news-archive> (2017)



# 6. OCCUPATION PROFILES

The following section offers a sampling of selected occupations across the energy industry sub-sectors (E&P, oil sands, pipelines, oil and gas services and LNG) including educational requirements and the skills and competencies needed, with a focus on what are expected to be the most stable, in-demand roles across the sub-sectors.

These occupational snapshots can provide communities and employers with the information they need to support training, retraining and upskilling, and in planning and acting in collaboration.



## Business and operations support (Skill Levels A and B – post-secondary degree or diploma required)

Business and operations support roles include a wide range of occupations. These roles include functional service areas such as air transportation, energy asset management, administration and management.

Job Role	Job Role Description
Operations and Production Accounting Professionals	Ensure that information as it relates to the quantities, costs and revenues associated with oil and gas activities are properly accounted for and reported to stakeholders so that good decisions about planning or operating a facility or project can be made.
Pipeline Schedulers	Plan and schedule oil, gas or refined product distribution to designated pipeline systems, to be delivered to various markets around the world. They also analyze storage levels and adjust shipping schedules to meet marketing agreements.
Supply Chain Analysts	Source the materials and equipment that oil and gas companies need to get their work done – from procurement, to awarding supplier contracts and post-contract award management.

## Engineers

### (Skill Level A – post-secondary degree required)

Engineers work in all parts of the oil and gas industry. Work typically involves the professional design, construction, operation, maintenance, quality control and optimization of systems critical to the exploration, production, processing and transportation of oil and natural gas. Typical engineering roles are:

Job Role	Job Role Description
<b>Chemical Process Engineers</b>	Research, design and develop chemical processes and equipment to expand operations, improve efficiencies, reduce emissions and resolve issues. Also oversee the operation, performance, optimization and maintenance of petroleum production, processing, upgrading, liquefaction and refining.
<b>Electrical and Instrumentation Engineers</b>	Research, design, develop, test and supervise the manufacturing and installation of electrical equipment, instrumentation, controls, components and systems—and ensure that they run smoothly, safely, and to exact measurements.
<b>Environmental Engineers</b>	Source, plan, design and supervise a variety of industrial activities and processes in oil and gas to prevent, control or remediate potential environmental impacts. Can specialize in a specific area such as air, water or waste management. Environmental auditing, testing and regulatory compliance/reporting are key activities in this role. Liaising regularly with regulatory agents, contractors and internal staff to ensure activities meet environmental objectives or requirements is also required.
<b>Mechanical Engineers</b>	Provide technical support and quality management in the design, evaluation, procurement, modification and installation of mechanical equipment and systems that support the reliable, efficient and safe operation of oil and gas facilities.

## Environment, regulatory and stakeholder engagement

### (Skill Level B – post-secondary diploma required)

These employees across the industry work to plan, monitor and reclaim the environment as well as engage the communities and governments impacted by oil and gas activity.

Job Role	Job Role Description
<b>Environmental Advisors</b>	Assist in the development, administration and promotion of programs related to Environmental, Health and Safety policies and programs. Broad technical experience in environmental issues, planning, fisheries and regulatory compliance is required. Conducting research, preparing reports, and providing advice for meeting regulatory requirements and standards are key elements of the job.
<b>Environmental Technicians</b>	Undertake field or laboratory activities to investigate, monitor and remediate sites where the presence of hydrocarbons (e.g., diesel, gasoline, crude oil), salts or metals may have impacted soil, air and/or water quality. They may also undertake similar activities in non-hydrocarbon-related sites. They are actively involved at the planning stages of projects by providing environmental information regarding existing soil, air and water quality conditions. This occupation also contributes to surveys and monitoring programs of the environment to identify potential impacts. This role tends to be heavily focused on prevention and abatement.

Continued on next page



## Environment, regulatory and stakeholder engagement **continued**

Job Role	Job Role Description
<b>Health and Safety Professionals</b>	Review, evaluate and analyze work environments and design programs and procedures to control, eliminate and prevent disease or injury caused by chemical, physical and biological agents or ergonomic factors.
<b>Indigenous Relations Specialists</b>	Work with Indigenous communities and leadership to foster and maintain relationships between the company and Indigenous communities, recognizing that Indigenous Peoples in Canada have a special, traditional and unique legal relationship to the land.
<b>Stakeholder Relations Professionals</b>	Play an important role in cultivating and maintaining relationships with key community stakeholders, Indigenous communities and interest groups that affect, or are affected by, industry activity. They are often responsible for the development and implementation of projects and plans that support a company's social license to operate.
<b>Surface Land Professionals</b>	Participate in the planning of drilling, pipeline and facility projects, and perform a critical role in negotiating the acquisition of the surface rights access required to carry out drilling and production activities. Also provide valuable insights into surface, community, environmental and regulatory issues. They serve as an ambassador for the company and industry, and represent the company's interests when interacting with landowners, regulators and industry partners. They are typically the first point of contact between landowners and operators.

## Geosciences

### (Skill Level A – post-secondary degree required)

Geoscience professionals complete geological and geophysical work, and require an applied knowledge in geology, physics and mathematics. They locate, evaluate and economically develop and/or produce mineral, geothermal and oil and gas deposits.

Job Role	Job Role Description
<b>Geophysicists</b>	Study the structure, the composition and processes of the earth to locate, identify and extract oil and gas, minerals and groundwater.
<b>Petroleum Geologists</b>	Responsible for the discovery and identification of oil and gas deposits. In addition to determining locations to drill, they envision, strategize, coordinate and execute drilling programs.

## Information Technology

### (Skill Levels A and B – post-secondary degree or diploma required)

These workers are essential to the highly digitized workplace; working to select, establish, maintain and evaluate the technology systems in companies.

Job Role	Job Role Description
<b>Computer Network Administrators</b>	Study the structure, the composition and processes of the earth to locate, identify and extract oil and gas, minerals and groundwater.
<b>Data Scientists</b>	Explore and develop oil and gas resource data. In oil and gas companies, data scientists mine this data to glean useful insights from a wide variety of sources ranging from explorations, well drilling and production sensors. Data mining combines statistics, artificial intelligence (AI) and database research.

## Labourers

### (Skill Levels C and D – on-the-job training/high school or less)

Labourers work for drilling, oilfield servicing and seismic contractors on and offshore, supply and standby vessels, product carriers and tankers, as well as some pipeline companies. The roles tend to be routine in nature and the training is done on-the-job. These occupations provide a good entry point for workers into the industry. Typical labourer roles are:

Job Role	Job Role Description
<b>Drilling and Service Rig Labourers</b>	Assist operators on drilling rigs and service rigs with general labour, such as cleaning equipment to ensure it is properly functioning.
<b>Field Dispatchers</b>	Process and transmit information and instructions to coordinate the activities of oil and gas vehicle operators, crews and equipment using a variety of computer-aided communications and dispatching equipment. They ensure all the necessary resources and personnel are ready to go at the right place and time, whether it be an oil or gas well site or equipment storage yard.
<b>Well Services Labourer</b>	Inspect and load tools and equipment and prepare worksites.

## Operators

### (Skill Level C – high school diploma required)

Operator jobs typically involve the specialized operation of control systems and equipment related to plants and facilities, heavy equipment, rigs, wells and pipelines. Typical roles include:

Job Role	Job Role Description
<b>Control Centre Operators</b>	Responsible for oil and gas processing plants and pipelines safe and reliable operations—this includes monitoring and controlling the operation of their processing and pipeline units remotely from within the plant or from a centralized control room.
<b>Power Engineering Technologists and Stationary Steam Engineers</b>	Operate and maintain reactors, steam and gas turbines, boilers, generators, stationary gas and diesel internal combustion engines, and auxiliary equipment or controls to generate electrical power. The oil and gas industry runs on power, and power engineers (also known as stationary engineers or steam engineers) know how to create energy by harnessing steam created from operations.

## Trades

### (Skill Level B - apprenticeship training required)

Tradespeople play a big role in the oil and gas industry. They are involved in the industry's day-to-day functions or work in maintenance roles where they keep facilities and equipment in good repair and reliable working order. A compulsory trade is one where, by law, an individual must be a certified journeyman or a registered apprentice to do the work of that trade.

Job Role	Job Role Description
<b>Boilermakers</b>	Construct, assemble, test, maintain and repair boilers, tanks, LNG processing trains and other large containers that hold liquids and gases.
<b>Industrial Electricians</b>	Install, maintain, test, troubleshoot and repair industrial electrical devices and equipment in a variety of operations and facilities. Also, plan and lay out electrical systems based on technical specifications and drawings and interact with equipment operators to detect faulty equipment issues.

Continued on next page

## Trades continued

Job Role	Job Role Description
<b>Ironworkers</b>	Hoist, bolt, fasten, cut, bend, weld and erect components for giant storage tanks, towers and other oil and gas structures.
<b>Millwright and Industrial Mechanics</b>	Install, maintain, troubleshoot, overhaul and repair stationary industrial machinery and mechanical equipment. Work on new or maintenance projects at manufacturing, processing and production facilities or on construction sites and have a mindset for troubleshooting and repair to keep facilities and equipment running.
<b>Steamfitter, Pipefitter and Sprinkler System Installers</b>	Maintain and repair storage vessels, pipes and spools for piping or sprinkler systems, and build and maintain piping systems used to produce or transport oil and gas. This includes the lay out, assembly, fabrication, maintenance and repair of piping systems carrying water, steam, chemicals or fuel in oil and gas processing plants.
<b>Welders</b>	Work with tools such as blow torches and hand-welding and flame-cutting equipment to fuse metal parts together or to fill holes, indentations or seams of fabricated metal products – a vital function when it comes to oil- and gas-related construction, operations or maintenance projects. Use of advanced digital tools for some high precision work may be required.

## Technicians/Technologists

### (Skill Level B – post-secondary diploma required)

Technicians and technologists help engineers with planning, designing and constructing. Technician work involves equipment installation, operation, servicing, monitoring, troubleshooting and fixing. Technologists design devices and equipment, decide which equipment to use on a project, determine how to use it and supervise its installation and use. Examples of occupations include:

Job Role	Job Role Description
<b>Civil Engineering Technologist</b>	Assist engineers in planning, designing, constructing and maintaining a wide variety of oil and gas facilities. These facilities may include production plants, pumping and compressor stations, pipelines, storage facilities, tanks and reservoirs, oil and gas wellsites, offshore drilling and production rigs and oil sands surface mining sites.
<b>Instrumentation Engineering Technologist</b>	Operate and maintain electrical and electronic equipment and systems. They may work with engineers and others to design, specify, size and select measurement and control systems. Instrumentation Engineering Technologists may also program and configure microprocessor-based measurement and control systems or oversee diagnostic programs and the installation of instrumentation systems.

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For a full list of occupation profiles, visit [CareersinOilandGas.com](https://careersinOilandGas.com)

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## 7. RESOURCES FOR MORE INFORMATION

If you are looking for more information about Indigenous-specific resources and programming in the energy sector, information on occupations (or to take a self-assessment), or general industry information – these resources can help.

### **For information on Canada's economic recovery plans:**

- [Alberta's Recovery Plan](#)
- [BC's Economic Recovery Plan](#)
- [Infrastructure Growth Plan Supporting Canadians](#)

### **For information on Indigenous-specific resources/training/programming:**

- [Aboriginal Futures](#)
- [Alberta Aboriginal Employment Training](#)
- [Alberta Site Rehabilitation Program](#)
- [BC Oil and Gas Commission Indigenous Education Program](#)
- [Business Link Indigenous Services](#)
- [Canadian Council for Aboriginal Business](#)
- [Community Futures Treaty Seven Business Resources Group](#)
- [First Nation-Municipal Funding Resources](#)
- [Government of Canada-Funding Opportunities](#)
- [Indian Oil and Gas Canada](#)
- [Indian Resource Council](#)
- [Indigenous and Northern Affairs Canada](#)
- [Indigenous Natural Resource Partnerships](#)
- [Indigenous Resource Network](#)
- [North East Native Apprenticeship Initiative](#)
- [Saskatchewan First Nations Natural Resource Centre of Excellence](#)
- [Saskatchewan Indian Institute of Technologies](#)

### **For information on job opportunities, occupations in the industry, or to take a self-assessment of your skills and abilities:**

- [Aboriginal Job Board](#)
- [AHKI Jobs & Careers](#)
- [Bowen Group-Indigenous Recruitment](#)
- [Careers in Oil + Gas – Career Explorer](#)
- [Careers Indigenous Link](#)
- [ECO Canada](#)
- [First Nations Job Board](#)
- [Indigenous Careers](#)
- [Indigenous Works](#)
- [Job Bank](#)
- [WorkBC-Resources for Indigenous People](#)



**For general industry information:**

- [Canada Energy Regulator](#)
- [Canadian Association of Geophysical Contractors](#)
- [Canadian Association of Oilwell Drilling Contractors](#)
- [Canadian Association of Petroleum Producers](#)
- [Canadian Energy Pipeline Association](#)
- [Canadian Energy Research Institute](#)
- [Canadian LNG Alliance](#)
- [Canadian Society for Unconventional Resources](#)
- [Explorers and Producers Association of Canada](#)
- [First Nations LNG Alliance](#)
- [Natural Resources Canada](#)
- [PetroLMI](#)
- [Petroleum Services Association of Canada](#)
- [Resource Works](#)

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For more information, contact:  
**Petroleum Labour Market Information (PetroLMI)**  
Phone: 403.516.8100  
Email: [info@CareersinOilandGas.com](mailto:info@CareersinOilandGas.com)

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DIVISION OF ENERGY SAFETY CANADA

[info@CareersinOilandGas.com](mailto:info@CareersinOilandGas.com)  
403.516.8100 or toll free 1.866.537.1230  
150, 2 Smed Lane SE, Calgary, AB, T2C 4T5  
[CareersinOilandGas.com](http://CareersinOilandGas.com)