

OIL & GAS



CANADA SECTOR STATS

- The GDP of Canada's oil and gas industry was C\$142.3 billion in 2017, representing 8.2% of Canada's total GDP.
- Canada is the 4th largest exporter of oil and the 5th largest exporter of natural gas in the world. The country's largest export market for petroleum products is North America.
- In 2017, foreign entities invested C\$177.3 billion into Canada's oil and gas sector.
- Over 250,000 Canadians are part of the oil and gas industry labour force, making up 1.4% of Canada's total labour force.

UAE SECTOR STATS

- The GDP of the UAE's oil and gas industry was US\$113.2 billion in 2017, representing 30.0% of the UAE's total GDP.
- The UAE is the 5th largest exporter of oil and the 25th largest exporter of natural gas in the world. The country's largest export market for petroleum products is Asia.
- 1.9 million workers are part of the UAE's extractive industries labour force, making up 31.0% of the UAE's total labour force.

Petroleum products power our world, whether in the form of fuel—for transportation, heat, or electricity generation—or in the form of feedstocks—for making chemicals, plastics, and synthetic materials—it's in nearly everything we use.

As two of the largest oil and gas producers in the world, Canada and the UAE have a great stake in the sector's success. The industry is a key economic driver for both countries, providing employment for their citizens and generating revenue for their governments. Although diversification away from oil and gas reliance has been a goal for both Canada and the UAE, its wide application and its necessity in industrial development means the industry is likely to maintain its importance in our world for years to come.

The global oil and gas sector is expected to grow over the next decade, as the rapid development of emerging markets in Asia, Africa, and Latin America will raise the global demand for petroleum products. Being leaders in oil and gas production, as well as innovation, Canada and the UAE are well positioned to take advantage of this future growth and bring cleaner, more efficient oil and gas solutions to the world.

THE CANADA-UAE SECTOR RELATIONSHIP

Perhaps the greatest connection Canada and the UAE have in this sector is through acquisitions and investments.

TAQA North—subsidiary of TAQA, a flagship company of the Abu Dhabi National Energy Corporation—has made significant acquisitions in Canadian oil and gas. In 2007, the company acquired Calgary-based Northrock Resources for US\$2.0 billion, Calgary-based PrimeWest Energy Trust for C\$5.0 billion, and the Canadian assets of Texas-based Pioneer Natural Resources for US\$540.0 million. Through these acquisitions, TAQA has extensive land holdings in North America with exploration and production rights. In Canada, they have at least two million acres of producing land and one million acres of non-producing land. The majority of this land is in Alberta, where they operate gas plants in Sousa, Chinchaga, Valhalla, Whitecourt, Bearberry, Caroline, Columbia, Sundre, and Brewster.

In 2009, Mubadala Investment Company, a state-owned holding company of Abu Dhabi, acquired Calgary-based

petrochemicals manufacturer, Nova Chemicals, for US\$2.3 billion. Through this deal, Mubadala gained petrochemical assets across Canada and the USA. In 2017, Mubadala made a significant investment of C\$2.0 billion to upgrade and expand two Nova Chemical facilities in the Sarnia-Lambton area of Ontario. This investment was the 2nd largest manufacturing investment in the last century in Ontario and cemented Sarnia's position as a leading centre for the chemical industry worldwide.

Another area of connection between Canada and the UAE is through trade. In 2017, Canada exported C\$17.2 million in oil and gas machinery to the UAE, making it the 16th largest export product from Canada to the UAE. Other materials and tools that have high export values and have application in the oil and gas sector include measuring and control instruments (C\$31.6 million) and metal valves (C\$9.0 million).

OIL & GAS IN CANADA

Canada is a powerhouse in this sector, being the 4th largest producer of oil and gas in the world. The country's industry is built upon its substantial petroleum reserves as well as local expertise that span all streams of the value chain. With its openness to private investment and its focus on leading-edge technology, Canada continues to be a top destination for major oil and gas companies from around the globe.

The Province of Alberta is Canada's main source of oil and gas activity—accounting for 81.0 per cent of oil production and 68.0 per cent of natural gas production in 2017. Not only does Alberta have major deposits in conventional oil and natural gas, it is also home to the Athabasca, Peace River, and Cold Lake Oil Sands—three crude bitumen deposits that, when combined, make up the third largest oil reserves in the world.



| TYPE | RESERVES | GLOBAL RANK IN RESERVES | PRODUCTION CAPACITY | GLOBAL RANK IN PRODUCTION |
|------------------|--------------------------|-------------------------|---------------------------------|---------------------------|
| Oil Sands | 163.4 Billion Barrels | 3 | 2.7 Million Barrels Per Day | 4 |
| Conventional Oil | 4.3 Billion Barrels | 3 | 1.5 Million Barrels Per Day | 4 |
| Natural Gas | 73.0 Trillion Cubic Feet | 17 | 16.1 Billion Cubic Feet Per Day | 4 |

OPPORTUNITIES FOR UAE COMPANIES IN CANADA:

- Investing in Oil & Gas Projects: Upstream, Midstream, & Downstream
- Oil & Gas Innovation: New Technologies for Extraction & Remediation

In addition to refining for fuel products, such as gasoline and diesel, Canada also uses its raw oil and gas resources in petrochemical manufacturing. This process uses feedstocks—such as ethane, methane, propane, and butane—to produce products we use every day such as electronics, plastics, fabrics, and fertilizers. Petrochemical manufacturing is Canada's 7th largest manufacturing sub-sector, with a GDP output of C\$11.6 billion in 2018. It has become a focus for the Government of Alberta who recently introduced the *Petrochemicals Feedstock Diversification Program* and the *Petrochemical Feedstock Infrastructure Program* to incentivize its growth as a key industry in the province.

An area of increasing importance and opportunity in Canada's oil and gas sector is innovation. As of the last few years, low prices, combined with high operating costs and the global desire for clean energy, has put pressure on the oil and gas industry. Thus, finding new and improved ways of extraction and remediation (more efficient and cleaner solutions) are becoming necessary for the continued growth of the sector. Natural Resource Canada offers funding through the *Energy Innovation Program (EIP)* to support development of clean oil and gas technologies, in order to help develop Canada's hydrocarbon resources in sustainable ways.

Another area of opportunity is investment; unlike other countries with major reserves, Canada's oil and gas is fully open to private investment. It is for this reason that many of the world's largest oil and gas companies from the United States, Europe, and Asia are located and operating in Canada. In addition, Canada offers foreign investors a stable economy, a stable political environment, and a highly-skilled pool of local oil and gas companies to draw from for their expertise, whether its in exploration, production, or transportation.

Feature Project: Inter Pipeline Heartland Petrochemical Complex

Announced in 2016, the Inter Pipeline Heartland Petrochemical Complex will convert locally sourced, low-cost propane (approximately 22,000 barrels per day) into 525,000 tonnes per year of propylene, a high value, easy to transport plastic used in the manufacturing of a wide range of finished products.

The C\$3.5-billion complex is being constructed in Alberta's Industrial Heartland, Canada's largest hydrocarbon processing region, and will consist of an integrated propane dehydrogenation (PDH) and a polypropylene (PP) facility—the first of its kind in Canada. It is expected to be complete in late 2021.



Rendering of the Inter Pipeline Heartland Petrochemical Complex



Propylene-Propane Splitter for the Complex

The complex was one of the first petrochemicals project to receive C\$200 million in royalty credits from the Government of Alberta as part of the province's *Petrochemicals Diversification Program*. The program provides credits to encourage companies to build manufacturing facilities that turn ethane, methane, and propane feedstocks into more valuable products, such as plastics, fabrics, and fertilizers.

OIL & GAS IN UAE

On the global scale, the UAE is the 8th largest oil producer and 14th largest natural gas producer—making it a major supplier of petroleum products to countries around the world. The sector is core to the UAE's economic wellbeing and has been a key component to its economic growth and diversification as a nation. With ambitious industrial development goals for the future, the oil and gas industry will continue to play a major role in the UAE's economy and provide opportunities for local and foreign players alike.



| TYPE | RESERVES | GLOBAL RANK IN RESERVES | PRODUCTION CAPACITY | GLOBAL RANK IN PRODUCTION |
|-------------|---------------------------|-------------------------|--------------------------------|---------------------------|
| Oil | 97.8 Billion Barrels | 7 | 3.5 Million Barrels Per Day | 8 |
| Natural Gas | 215.0 Trillion Cubic Feet | 7 | 1.0 Billion Cubic Feet Per Day | 14 |

The development of the UAE’s oil and gas industry is primarily governed by Abu Dhabi’s Supreme Petroleum Council and led by the state-owned Abu Dhabi National Oil Company (ADNOC). Most oil and gas production in Abu Dhabi is organized under production-sharing agreements between ADNOC and international oil and gas companies.

The majority of the UAE’s oil and gas activity is located in the emirate of Abu Dhabi. Abu Dhabi controls 94.0 per cent of the country’s oil and natural gas reserves, which are found both on and offshore. The emirate is also home to the Upper Zakum offshore oil field—the 2nd largest offshore field in the world, which produces 750,000 barrels of oil per day and has a reserve of 50 billion barrels.

OPPORTUNITIES FOR CANADIAN COMPANIES IN UAE:

- Oil and Gas Material Supplies, Machinery & Technology Exports
- Professional & Technical Services

Despite having some of the largest natural gas reserves in the world, the UAE is a net gas importer, with most of their own gas resources left untapped. One of the key reasons for this is that most of the UAE’s natural gas is sour (high in sulphur content), which makes it difficult and costly to extract and process. However, with technological advancements and the expected growth in global demand for energy resources, the UAE has moved to boost its natural gas production over the coming decade.

In November 2018, the Supreme Petroleum Council approved a five-year, US\$132-billion capital investment to increase the UAE’s overall oil and gas production capacity. Through this investment, the UAE aims to increase oil production to 4.0 million barrels a day by the end of 2020 and 5.0 million barrels a day by the end of 2030. The investment will also go towards ADNOC’s new integrated gas strategy, which aims to make the UAE self-sufficient in natural gas and potentially transition to a net gas exporter. This expansion aligns with ADNOC’s earlier goals to further develop the petrochemicals manufacturing in the UAE. In May 2018, ADNOC unveiled a US\$45-billion plan to create the world’s largest integrated refining and petrochemicals complex that would see the UAE triple

production of petrochemicals to 14.4 million tonnes per year by 2025.

For Canadian firms, major areas of opportunity in the UAE's oil and gas industry include supplying machinery, tools, materials, and technology, as well as professional and technical services that improve efficiency, safety, and environmental protection throughout the value chain. In addition, through the many freezones, the UAE has the potential to serve as a launchpad into the GCC region, providing foreign firms easier market access to other major oil and gas countries.

Feature Project: Ghasha Ultra-Sour Gas Concession Artificial Islands

The Ghasha Concession is Abu Dhabi National Oil Company's (ADNOC) offshore ultra-sour gas mega project, which consists of three major offshore gas and condensate fields - Hail, Ghasha, Dalma—as well as other offshore oil, gas, and condensate fields including Nasr, SARB, and Mubarraz.

In early 2019, ADNOC contracted the UAE's National Marine Dredging Company (NMDC) for US\$1.36-billion to construct 10 new artificial islands, two causeways, and expand an existing island in the Ghasha Concession to accelerate the development of off-shore gas with the objective of making the UAE gas self-sufficient.



The Future Location of 10 Islands in the Ghasha Concession

The project is one of the largest sour gas projects in the world and is expected to take three years to complete. Once operational, it will provide the infrastructure required to generate 1.5 billion cubic feet of gas and 120,000 barrels of oil and high-value condensates per day. ADNOC will retain a 60.0 per cent holding in the area, while the other 40.0 per cent is earmarked for foreign oil and gas companies to develop.

GOVERNMENT RESOURCES

- **Natural Resources Canada:**
www.nrcan.gc.ca
- **Canadian Energy Export Guide:**
canadianenergyexportguide.com
- **Canadian Energy Facts:**
www.nrcan.gc.ca/energy-facts
- **UAE Ministry of Energy and Industry:**
www.moei.gov.ae
- **Canadian Trade Commissioner Service in the United Arab Emirates:**

The Canadian Trade Commissioner Service has been helping Canadian companies navigate international markets for more than 120 years. Canadian trade commissioners are located in more than 160 cities worldwide, including Abu Dhabi and Dubai. Canadian trade commissioners in the UAE are each responsible for one or more key sectors. Their offices are at the Embassy of Canada to the United Arab Emirates (located in Abu Dhabi) and the Consulate General of Canada in Dubai.

www.tradecommissioner.gc.ca/united-arab-emirates-emirats-arabes-unis

E-mail: uae-eau.infocentre@international.gc.ca

- **Consulate General of the United Arab Emirates in Toronto:**

The Consulate General of the UAE in Toronto has a business development team that can point you in the right direction in Canada. The Consulate General of the UAE and the Embassy of the United Arab Emirates in Ottawa work together with key partners to support UAE companies interested in the Canadian market.

E-mail: torontocon@mofaic.gov.ae