

# **CANADA'S METHANE OPPORTUNITY:**

***INNOVATION***



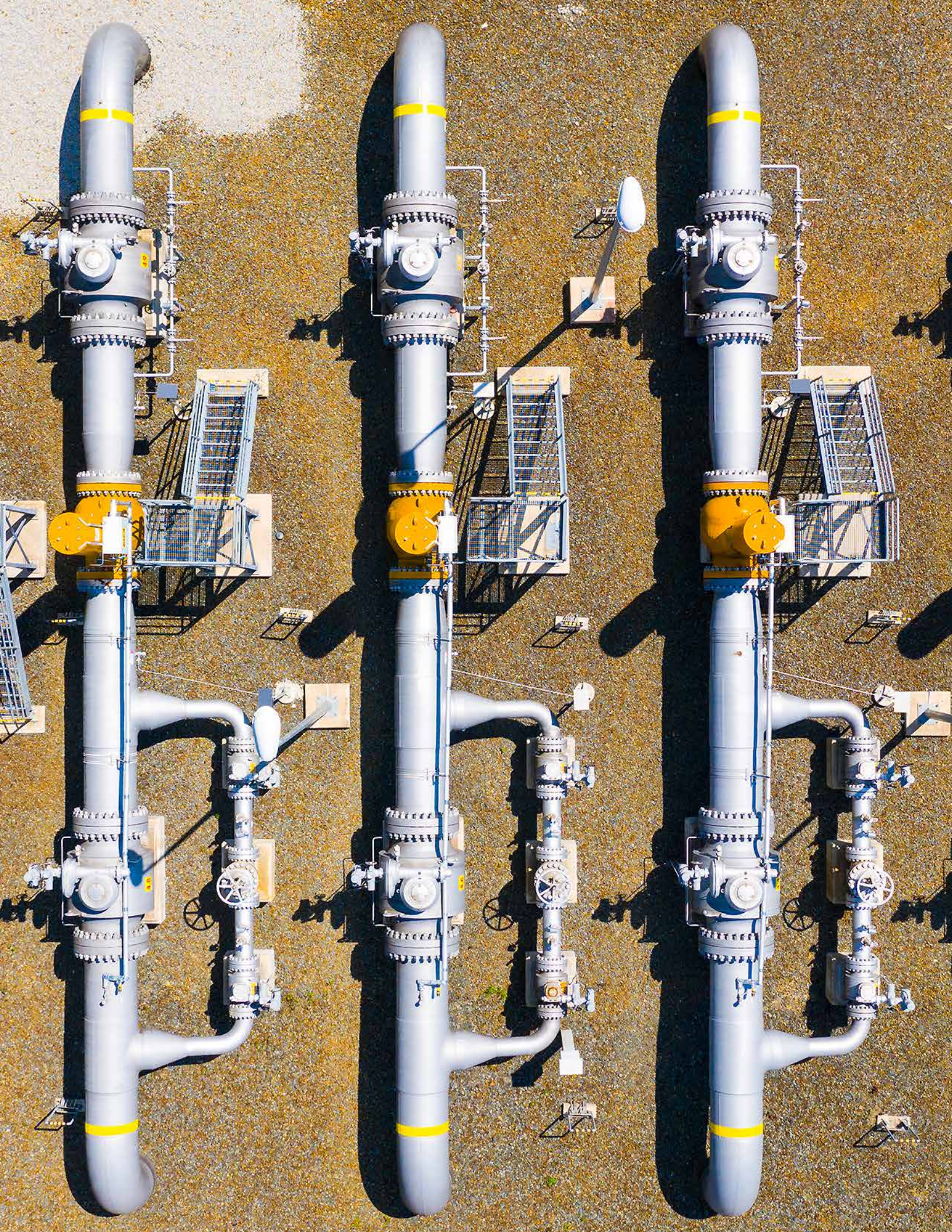
***EXPORTS***



***JOBS***



**DATU RESEARCH  
2025**



# TABLE OF CONTENTS

<b>Executive Summary</b> .....	<b>4</b>
<b>Introduction</b> .....	<b>6</b>
Mitigating Climate Change and Local Air Pollution .....	6
Providing Solutions that Pay for Themselves .....	6
Creating Good Jobs.....	6
<b>Manufacturing: Mitigation Equipment Categories</b> .....	<b>7</b>
<b>Services: Leak Detection Platforms</b> .....	<b>8</b>
<b>Methodology</b> .....	<b>9</b>
<b>Industry Characteristics</b> .....	<b>10</b>
Firm Count.....	10
Firm Roles .....	10
Firm Size .....	12
Firm Maturity.....	14
<b>Jobs</b> .....	<b>15</b>
Geography.....	15
Wages.....	17
<b>Company Profile: GHGSat</b> .....	<b>18</b>
<b>Company Profile: Sirius Controls</b> .....	<b>20</b>
<b>Conclusion</b> .....	<b>22</b>
<b>Bibliography</b> .....	<b>23</b>
<b>Manufacturing Firm List</b> .....	<b>24</b>
<b>Service Firm List</b> .....	<b>27</b>

## TABLES

<b>Table 1.</b> Methane Mitigation Technologies .....	7
<b>Table 2.</b> Methane Leak Detection and Measurement Technologies and Platforms.....	8
<b>Table 3.</b> Number of Manufacturing Firms in Canada Providing Methane Mitigation, by Technology, 2024 .....	10
<b>Table 4.</b> Number of Service Firms in Canada Providing Leak Detection & Measurement, by Technology and Platform, 2024.....	11
<b>Table 5.</b> Median Wages in Methane Mitigation Manufacturing in Canada, Key Occupations, 2023.....	17
<b>Table 6.</b> Median Wages in Methane Mitigation Services in Canada, Key Occupations, 2023.....	17

## FIGURES

<b>Figure 1.</b> Number of Employees, Methane Mitigation Manufacturing Firms in Canada, 2024....	12
<b>Figure 2.</b> Annual Sales, Methane Mitigation Manufacturing Firms in Canada, 2024 .....	12
<b>Figure 3.</b> Number of Employees, Methane Mitigation Service Firms in Canada, 2024 .....	13
<b>Figure 4.</b> Annual Sales, Methane Mitigation Service Firms in Canada, 2024.....	13
<b>Figure 5.</b> Methane Mitigation Firms' Age, in Years, 2024 .....	14
<b>Figure 6.</b> Number of Manufacturing Firm Locations in Canada, by Type, 2024 .....	15
<b>Figure 7.</b> Number of Service Firm Locations in Canada, by Type, 2024.....	15
<b>Figure 8.</b> Map of Methane Mitigation Firm Locations in Canada, 2024.....	16
<b>Figure 9.</b> Methane Mitigation Firm Locations in Canada, by Province, 2024 .....	16

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# EXECUTIVE SUMMARY

Canadian methane mitigation firms play a crucial role in reducing methane emissions from the oil and gas sector. These firms manufacture equipment that reduces the methane that escapes through leaks or through intentional venting and flaring. They also perform leak detection and measurement to help operators find and repair leaks. This report highlights five key characteristics of the methane mitigation industry in Canada, showcasing its robustness, geographical distribution, economic impact, and job quality:

## FIVE KEY CHARACTERISTICS OF THE METHANE INDUSTRY IN CANADA ARE HIGHLIGHTED IN THIS REPORT.

1. **Canada has a robust methane mitigation industry.** A total of 81 manufacturing firms and 55 service firms provides oil and gas operators with the equipment and services they need to directly reduce methane emissions.
2. **Many of the firms have multiple employee locations in Canada.** Manufacturing firms account for 200 employee sites and service firms for 159, for a nationwide total of 359. Alberta, at 189 locations, is home to over half of this total. Other provinces with large numbers of employee locations — including those for manufacturing and for service — include Ontario (78), Quebec (31), British Columbia (29), and Saskatchewan (17). This widespread presence ensures that the benefits of the industry are felt across the country.
3. **Most of the firms are small businesses, known to be a powerful source of economic growth.** In manufacturing as well as services, small businesses account for more firms than all the other size categories combined.
4. **These are high-quality, well-paying jobs.** Dozens of job types are involved in manufacturing and services for mitigating methane, with relevant median wages ranging from CA\$20 to CA\$60.58 per hour depending on job type. Many of them require work onsite at oil and gas facilities, making them less susceptible to offshoring.
5. **Mitigating methane emissions not only helps combat climate change and local air pollution but also benefits oil and gas producers.** The International Energy Agency estimates that 33% of Canada's total methane emissions from oil and gas operations could be avoided at no net cost, thanks to the market value of the captured methane (International Energy Agency 2024).<sup>1</sup> This makes methane mitigation a financially viable and environmentally beneficial endeavor.

Markets from Europe to Asia are moving toward requiring natural gas come from low-emitting sources. Canada's methane mitigation industry has the potential to enable Canadian producers to meet this and other future standards required to ensure the competitiveness of Canadian energy in the global market to address global climate change.

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<sup>1</sup> Dunskey (2023) further finds that Canada could achieve its methane emissions reduction target of 75% at an average cost “well below the current and projected federal carbon price.”



# INTRODUCTION

This research aims to explore and understand the number of companies that provide the oil and gas sector with equipment and services to mitigate methane emissions. It includes an inventory of relevant firms, detailing their size, stage of maturity, and the range of technologies and innovations they deploy. In addition, it documents the geography, roles, and wages of methane mitigation jobs. Overall, the number of methane mitigation firms and employee locations in Canada indicates that in addition to reducing emissions, methane mitigation is a job creator.

## **MITIGATING CLIMATE CHANGE AND LOCAL AIR POLLUTION**

Methane, the primary component of natural gas, has an exceptionally high heat-trapping capacity, making it a significant contributor to global warming. In 2022, methane accounted for 17% of all human-caused greenhouse gas emissions in Canada, second only to carbon dioxide (CO<sub>2</sub>) (Environment and Climate Change Canada 2024). However, methane's warming potential is much higher than that of carbon dioxide: for the first 20 years after its release into the atmosphere, methane from fossil fuel sources has 84-87 times the heat-trapping effect of carbon dioxide (Greenhouse Gas Protocol 2024). About 49% of Canada's current total methane emissions are from the oil and gas sector (Government of Canada 2024a). Besides contributing to global warming, harmful VOCs are also released as co-pollutants when natural gas is emitted during oil and gas operations. These chemicals can contribute to cancers and other illnesses. When natural gas is flared, nitrogen oxides and

PM<sub>2.5</sub> are produced, posing a threat to public health (Chen Chen et al. 2022).

## **PROVIDING SOLUTIONS THAT PAY FOR THEMSELVES**

The International Energy Agency estimates that, based on 2023 energy prices, 33% of total methane emissions from oil and gas operations in Canada could be avoided with currently available technologies at no net cost (International Energy Agency 2024). This is because costs for mitigation measures are lower than the market value of the additional natural gas captured and sold or used. Further research finds that Canada could achieve its methane emissions reduction target of 75% at an average cost “well below the current and projected federal carbon price” (Dunsky Energy + Climate Advisors 2023). Conserved gas also translates into more royalties to fund essential government services (Aaron Wolfe and Scott Seymour 2024). This report inventories Canada's manufacturing and service firms that are ready to help operators achieve these significant, often profitable, reductions.

## **CREATING GOOD JOBS**

Mitigating methane creates well-paying jobs. A diverse and steadily expanding range of skills is required, from field technicians to chemical engineers to data scientists. Much of the manufacturing requires field work to customize, install, maintain, repair, and inspect mitigation equipment. Similarly, leak detection and measurement services typically require onsite inspections, meaning that the methane mitigation industry includes many jobs that are not likely to be offshored.

**IN ADDITION TO REDUCING EMISSIONS, METHANE MITIGATION IS A JOB CREATOR.**

# MANUFACTURING: MITIGATION EQUIPMENT CATEGORIES

Methane emissions in the upstream oil and gas industry comprise two types: vented emissions and fugitive emissions. Vented emissions are intentional and result from certain product designs and processes. For example, many facilities use pneumatic devices that derive energy from pressurized natural gas to operate mechanical equipment; these devices release gas either continuously or intermittently to control process conditions such as pressure and temperature. In contrast, fugitive emissions are

unintentional and primarily occur as leaks, which can be caused by failing seals, deteriorating materials, or valves that are stuck open, among other things.

Equipment options for the oil and gas industry to address methane emissions are long-established and well-known (see Table 1). The cost of this equipment is often offset by the value of the natural gas prevented from being emitted.

**TABLE 1: METHANE MITIGATION TECHNOLOGIES**

## **LOW-EMISSION ROD PACKING AND DRY SEALS**

Compressors are used to pressurize and transport natural gas; replacing typical seals with these low-emission seals and rod packing helps prevent compressor leaks.

## **LOW-EMISSION VALVES**

Various valves are used to vent excess gas pressure for safety, or to stop the flow of gas when a line is severed or a pilot light is unlit. To avoid leaks, operators can replace failing valves early, preferably with low-leak valves.

## **ALTERNATIVES TO PNEUMATIC DEVICES**

Pneumatic devices such as actuators, controllers, and pumps use energy from pressurized gas to operate equipment. They vent gas to modulate pressure, flow, and more. Sites can replace gas-driven devices with compressed instrument air, electric, and solar alternatives.

## **REDUCED EMISSIONS COMPLETIONS (GREEN COMPLETIONS)**

At sites that use hydraulic fracturing, excess fluid and produced water must be removed before routine production can begin. During the process, a large amount of methane escapes. Instead, temporary REC equipment can be used to separate the gas and send it to the sales line.

## **LIQUIDS UNLOADING: PLUNGER LIFTS AND VELOCITY TUBING**

A well's productivity can be impeded by accumulating liquids, often removed via a "blowdown," which allows the gas under pressure to push out the liquids—releasing large amounts of methane. Plunger lifts and velocity tubing can be used to release far less methane.

## **VAPOR RECOVERY UNITS**

Vapor recovery units (VRUs) are used to collect gas vapors from crude oil and natural gas storage tanks. Methane vaporizes and collects in the space between the liquid and the top of the tank, creating emissions that are typically vented or flared. With VRUs, potential emissions are instead captured for on-site generators or compressed into a sales pipeline.

## **CAPTURE OF ASSOCIATED GAS FOR USE OR DISTRIBUTION**

Instead of venting and flaring natural gas associated with oil operations, operators can use it as fuel for oil field activities by compressing it or convert it to electric power using small-scale generators, or convert it to methanol or LNG.

## **IMPROVED COMBUSTION FOR FLARING**

If flaring is used, technologies can optimize combustion efficiency and ensure flares stay lit.

## **NON-FOSSIL-FUEL REMOTE POWER**

For remote sites, alternatives such as solar energy can power pumps and air compressors.

**SEVERAL METHANE MITIGATION TECHNOLOGIES ARE AVAILABLE TO REDUCE VENTED AND FUGITIVE EMISSIONS.**

# SERVICES: LEAK DETECTION PLATFORMS

Methane is odourless and colourless, which makes it difficult to tell when it is leaking into the atmosphere. Many oil and gas operators find it cost effective to outsource leak detection services. Standard leak detection technologies and platforms are summarized in Table 2. Although leak detection is often performed with handheld devices, operators and service providers are increasingly opting for more advanced and automated methods.

Traditionally, the most-frequently-used devices have been infrared cameras and tunable diode lasers. Infrared or Optical Gas Imaging (OGI) cameras have become dominant in recent years; they translate methane emissions into easy-to-see gas plumes.

Many service firms expand beyond the coverage that is possible with handheld (or close-range) detection technologies by

mounting them to road vehicles, unmanned aerial vehicles (or drones), helicopters, or airplanes. This enables these technologies to cover more of a facility in a shorter time. By measuring methane concentration, they provide a snapshot of methane that is present, although they do not measure how much of the gas is escaping over time from the source.

Continuous monitoring, such as with fixed sensors or methane-sensing satellites, makes it possible to measure the actual flow rate of methane escaping into the atmosphere. Often expressed in kilograms per hour, flow rate is useful to detect intermittent sources. It precisely measures the total amount of methane being emitted from the source, which is crucial for understanding emission volumes and designing an appropriate response.

**TABLE 2. METHANE LEAK DETECTION AND MEASUREMENT TECHNOLOGIES AND PLATFORMS**

<p><b>METHANE FLOW RATE MEASUREMENT</b></p> <p>Measuring flow rate can involve devices such as flow meters, high-volume samplers, or advanced techniques for calculating rates at which methane is escaping from a source. The key difference between measuring methane flow rates (in kg/hour) versus concentrations (in parts per million) is that flow rates quantify the total amount of methane being emitted.</p>
<p><b>OPTICAL GAS IMAGING (OGI)</b></p> <p>OGI cameras are thermal devices that create infrared images of methane plumes. Because they display results in a visual and intuitive manner, they enable operators to quickly and safely expose gas leaks. In recent years they have become the dominant close-range method.</p>
<p><b>NON-OGI CLOSE-RANGE INSTRUMENTS</b></p> <p>Another widely used, effective close-range technology is laser spectroscopy. The device points a laser beam towards a suspected leak, and the target reflects back a diffused beam. The device then measures the absorptivity of the beam and calculates its methane column density.</p>
<p><b>FIXED SENSORS</b></p> <p>Fixed sensors are installed in a facility—typically in high-risk areas—to provide continuous, real-time readings of methane concentration. These devices will trigger an alarm if concentrations exceed certain limits.</p>
<p><b>MOBILE GROUND LABS</b></p> <p>A vehicle with a global positioning system and a methane sensor enables an operator to generate a map of methane concentrations along the vehicle's path. Because it is limited to the path (usually a road), this method collects data in a two-dimensional space.</p>
<p><b>UNMANNED AERIAL VEHICLES (UAVS)</b></p> <p>Also called drones, these can reach dangerous or hard-to-reach places and can fly very close to the source of plumes. They can be equipped with OGIs and other relatively small, lightweight sensor devices and, like aircraft, can operate in three-dimensional space.</p>
<p><b>AIRCRAFT</b></p> <p>Various sensor types can be mounted on helicopters and small airplanes to detect methane emissions over relatively long periods while covering longer distances. Like drones, aircraft can collect data in three dimensions.</p>
<p><b>SATELLITES</b></p> <p>Satellites can be equipped to measure methane concentrations in the troposphere. These readings can be combined with other data to identify large sources of emissions.</p>

Source: Adapted from (Thomas A Fox et al. 2019). Note: Here, the source's original first category, "handheld instruments," is divided into OGI and non-OGI categories.



# METHODOLOGY

To compile our list of relevant firms with locations in Canada, we identified over 300 firms via purposive sampling and online research. We drew on company websites and industry sources to identify those that provide one or more of the target technologies and services to the upstream oil and gas industry. We excluded firms that more broadly provide energy reporting or carbon market services. For data on business size, we drew on the employee and revenue ranges that the firms self-reported on LinkedIn.



# INDUSTRY CHARACTERISTICS

## FIRM COUNT

Canada has a robust methane mitigation industry. Our final count revealed a total of at least 136 methane mitigation firms that have headquarters, manufacturing, and other locations in Canada, including administrative, sales, and field offices, warehouses, repair shops, and other sites. Of these companies, 55 are service firms and 81 are manufacturers. Most companies (97) are Canadian, while 42 are foreign firms with Canadian locations. These have international headquarters outside Canada, including Australia, Austria, Belgium, Czech Republic, France, Germany, Switzerland, the UK, and the US. Three foreign firms additionally list Canadian headquarter locations even though their global headquarters are elsewhere. They are AECOM (US), Aveva (UK), and BAE Systems (UK).

Another key indicator for defining the shape of Canada’s methane mitigation industry is whether each identified company focuses principally, or perhaps exclusively, on reducing methane emissions in the oil and gas industry. In our sample of 136 companies, a total of 53, or 39%, mainly focus on methane mitigation in the oil and gas sector. For instance, LCO Technologies, a company in Alberta, mainly designs and creates solar instrument air compressors, chemical injection pumps, and vapor recovery units for upstream oil and gas. In contrast, Quebec-based Robco is a firm operating since 1911 with a number of product lines across industries, one of which includes dry seals designed to prevent compressor leaks in the oil and gas industry.

## FIRM ROLES

The manufacturing firms in our sample manufacture 10 major types of methane mitigation equipment, the most common of which are alternatives to natural-gas-driven pneumatics, leak detection and measurement technologies, and flare mitigation or improved combustion technologies (see Table 3).

**TABLE 3. NUMBER OF MANUFACTURING FIRMS IN CANADA PROVIDING METHANE MITIGATION, BY TECHNOLOGY, 2024**

Technology	Manufacturing Firms
Alternatives to Natural Gas-Driven Pneumatic Devices	28
Leak Detection & Measurement	26
Flare Mitigation/Combustion	21
Vapor Recovery	18
Non-Fossil-Fuel Remote Power	17
Gas Capture For Use or Distribution	11
Liquids Unloading, Plunger Lifts, Velocity Tubing	9
Dry Seals	9
Low-Emission Valves	8
Reduced Emissions Completions	1

**AT LEAST 136 METHANE MITIGATION FIRMS HAVE HEADQUARTERS, MANUFACTURING, AND/OR OFFICE LOCATIONS IN CANADA.**

Similarly, the service firms in our sample provide mostly leak detection and measurement services (while a few provide strategic advisory services or advanced data analysis). Firms perform leak detection via a variety of different technologies such as optical gas imaging (OGI), or various other close-range instruments, or remote sensing. They are deployed via platforms that include drones, aircraft, satellites, fixed sensors, or mobile ground labs (see Table 4).

**TABLE 4. NUMBER OF SERVICE FIRMS IN CANADA PROVIDING LEAK DETECTION & MEASUREMENT, BY TECHNOLOGY AND PLATFORM, 2024**

Technology	Service Firms
Leak Detection Services	32
Non-OGI Handheld or "Close Range" Instruments	11
Optical Gas Imaging	10
Unmanned Aerial Vehicles (UAVs)	9
Aircraft	6
Satellites	4
Fixed Sensors	3
Mobile Ground Labs	1



## FIRM SIZE

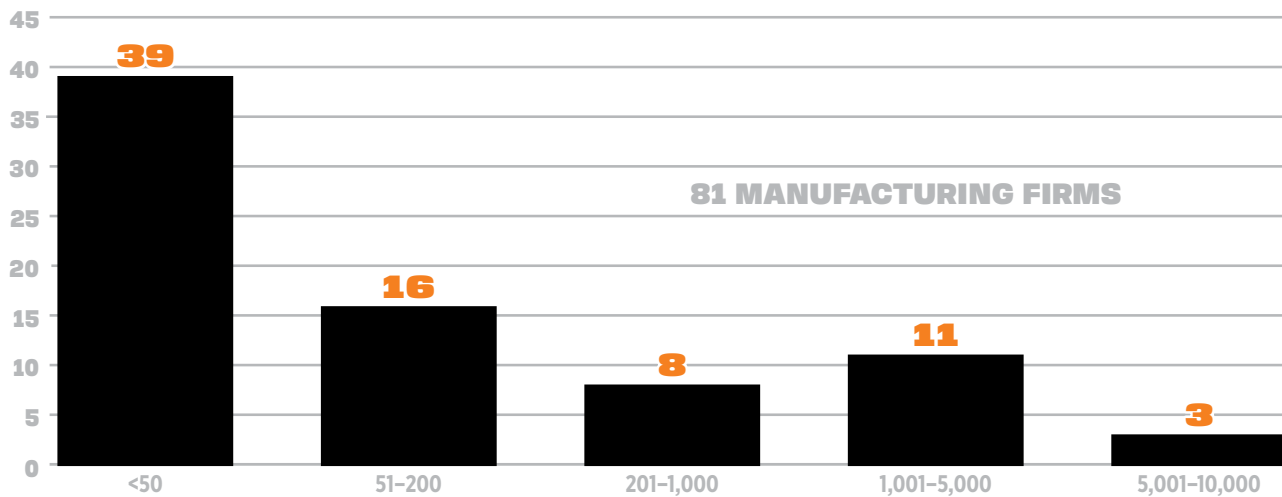
Most companies in the total sample are small businesses. This report adopts Innovation, Science and Economic Development Canada’s definition of business size, in which a small business has 1 to 99 paid employees; a medium-sized business has 100 to 499 paid employees; and a large business has 500 or more paid employees (Government of Canada 2024b).

Small businesses are an engine of job growth in national economies. According to Statistics Canada, small businesses “make significant contributions to the Canadian economy,”

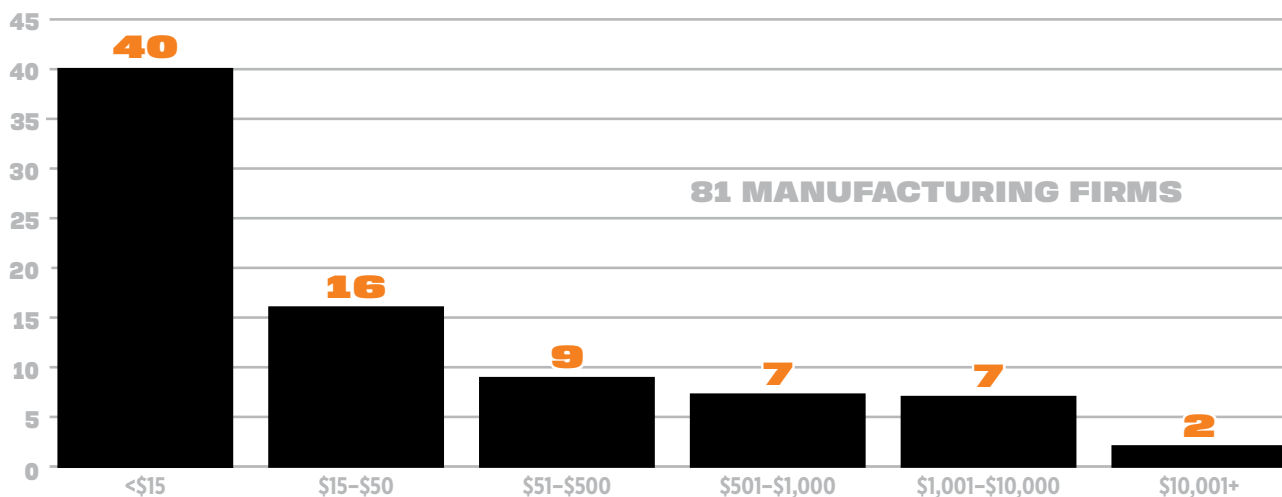
representing nearly two-thirds of employed Canadians (Stephanie Tam, Shivani Sood, and Chris Johnston 2024).

Although available data limits our ability to give firm sizes in the exact ranges above, it is clear that small businesses dominate. Among the manufacturing companies in our sample, those with fewer than 50 employees and less than \$15M in annual sales are most numerous (see Figure 1 and Figure 2). A similar pattern follows for the service companies (see Figure 3 and Figure 4).

**FIGURE 1: NUMBER OF METHANE MITIGATION MANUFACTURING FIRMS IN CANADA, BY EMPLOYEE SIZE RANGE, 2024**



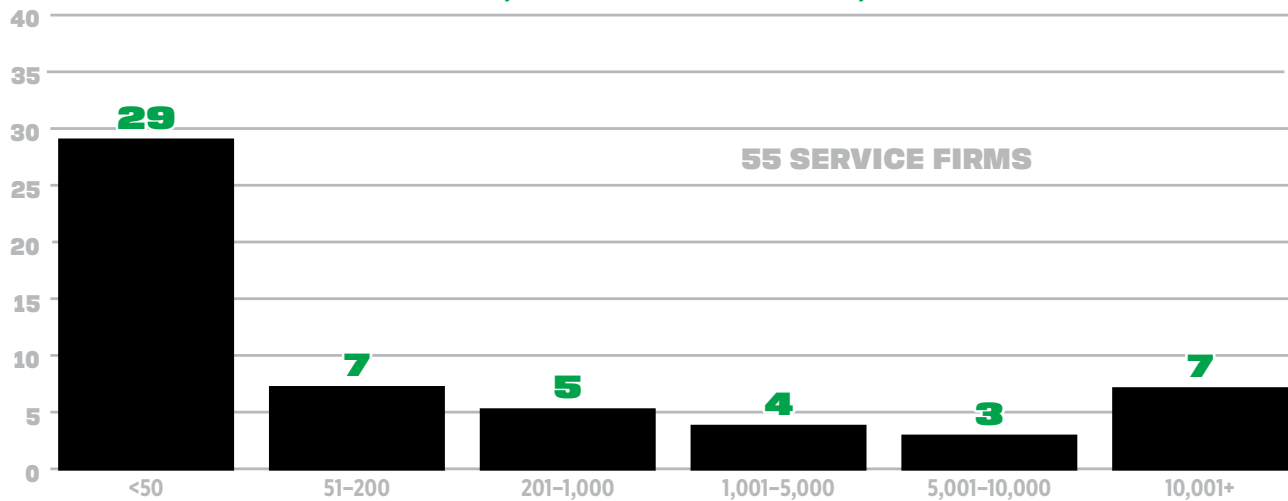
**FIGURE 2: NUMBER OF METHANE MITIGATION MANUFACTURING FIRMS IN CANADA, BY SALES SIZE, 2024 (IN MILLIONS)**



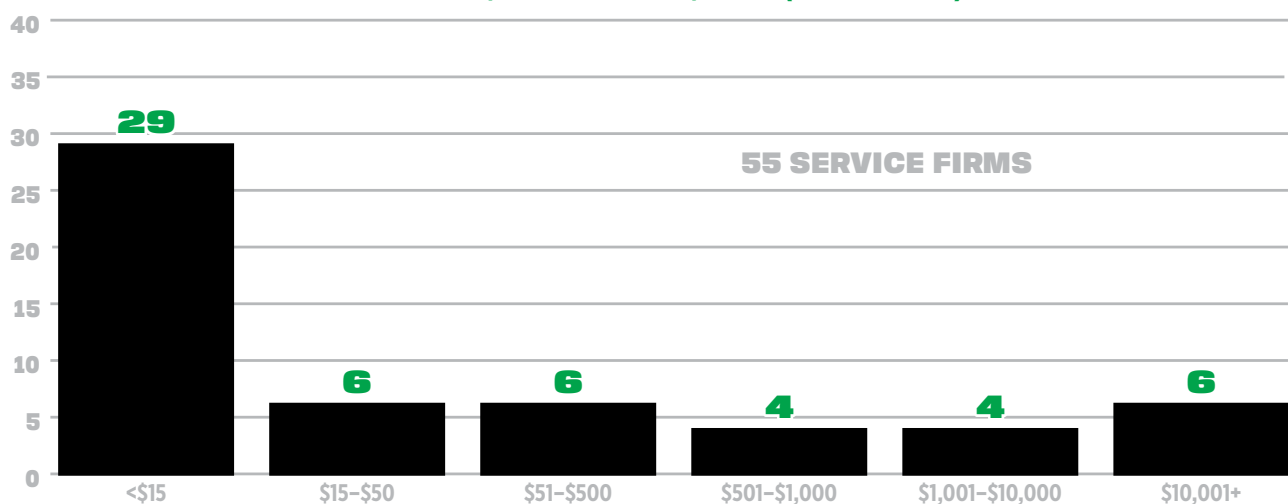


**SMALL BUSINESSES  
DOMINATE BOTH  
MANUFACTURING  
AND SERVICE  
SECTORS.**

**FIGURE 3. NUMBER OF METHANE MITIGATION SERVICE FIRMS IN CANADA, BY EMPLOYEE SIZE RANGE, 2024**



**FIGURE 4. NUMBER OF METHANE MITIGATION SERVICE FIRMS IN CANADA, BY SALES SIZE, 2024 (IN MILLIONS)**



### FIRM MATURITY

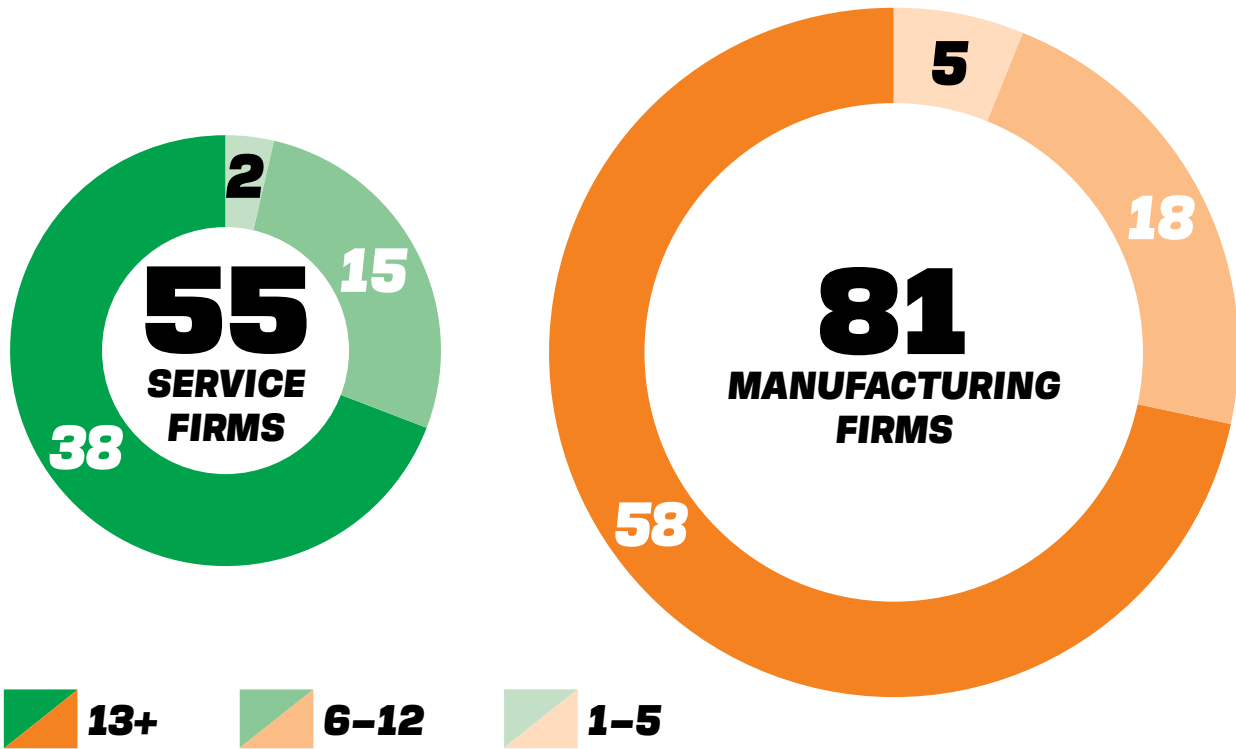
Most firms identified have been operating for at least 13 years. In manufacturing, mature businesses account for 72% of firms (see Figure 5 below). Two of them, A.W. Chesterton and NOV, are large US firms, in business since before 1900, with offices in Canada. Five manufacturing firms are start-ups still in their first five years of operation. These include:

- Aerometrix,<sup>2</sup> which develops leak detection technologies and performs inspections of natural gas wells, processing plants, and pipelines
- Clear Rush Company, manufacturer of high-efficiency enclosed vapor combustors, burners, power generation units, and high-efficiency flare stacks

<sup>2</sup> Not to be confused with Canada's Aerometrex ending in 'ex,' which, according to its website, performs aerial surveys for contours and mapping purposes, not gas leaks.

- DARKAI Valve, which performs valve service and maintenance
- Volatus Aerospace, which performs R&D, design, and manufacture of drone technologies used in leak detection
- Kathairos, a service firm that operates within the equipment category of alternatives to natural-gas-driven pneumatic devices; in cooperation with Chart Industries — a US firm with locations in Canada — Kathairos provides operators with liquid nitrogen to actuate pneumatic pumps

**FIGURE 5. METHANE MITIGATION FIRMS' AGE, IN YEARS, 2024**

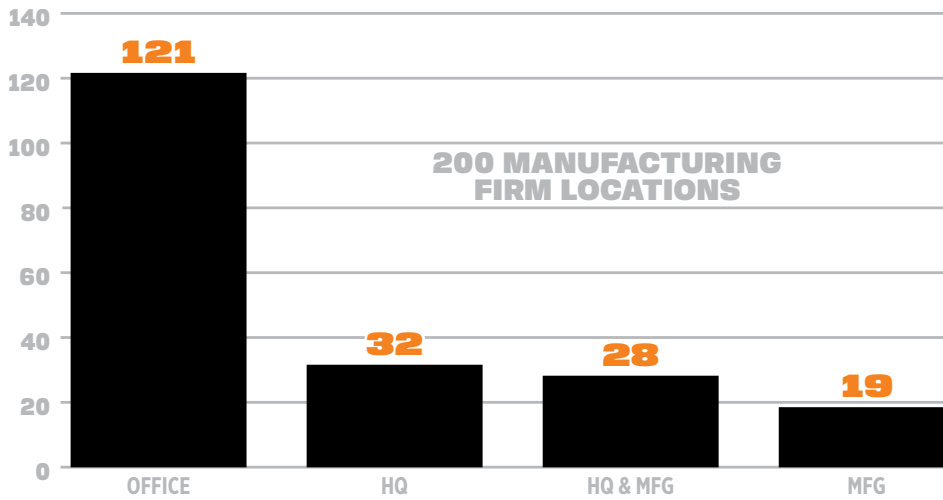


# JOBS

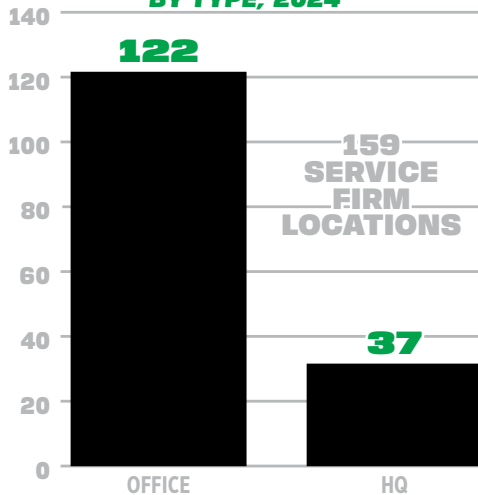
## GEOGRAPHY

Our research identified a total of 359 methane mitigation firm locations across Canada, including 200 locations for manufacturing firms and 159 for service firms (see Figure 6 and Figure 7). These fall into four location categories: 1) headquarters, 2) headquarters that include manufacturing, 3) manufacturing facilities, and 4) offices — which comprise administrative, sales, and field offices, equipment repair, warehouses, and others.

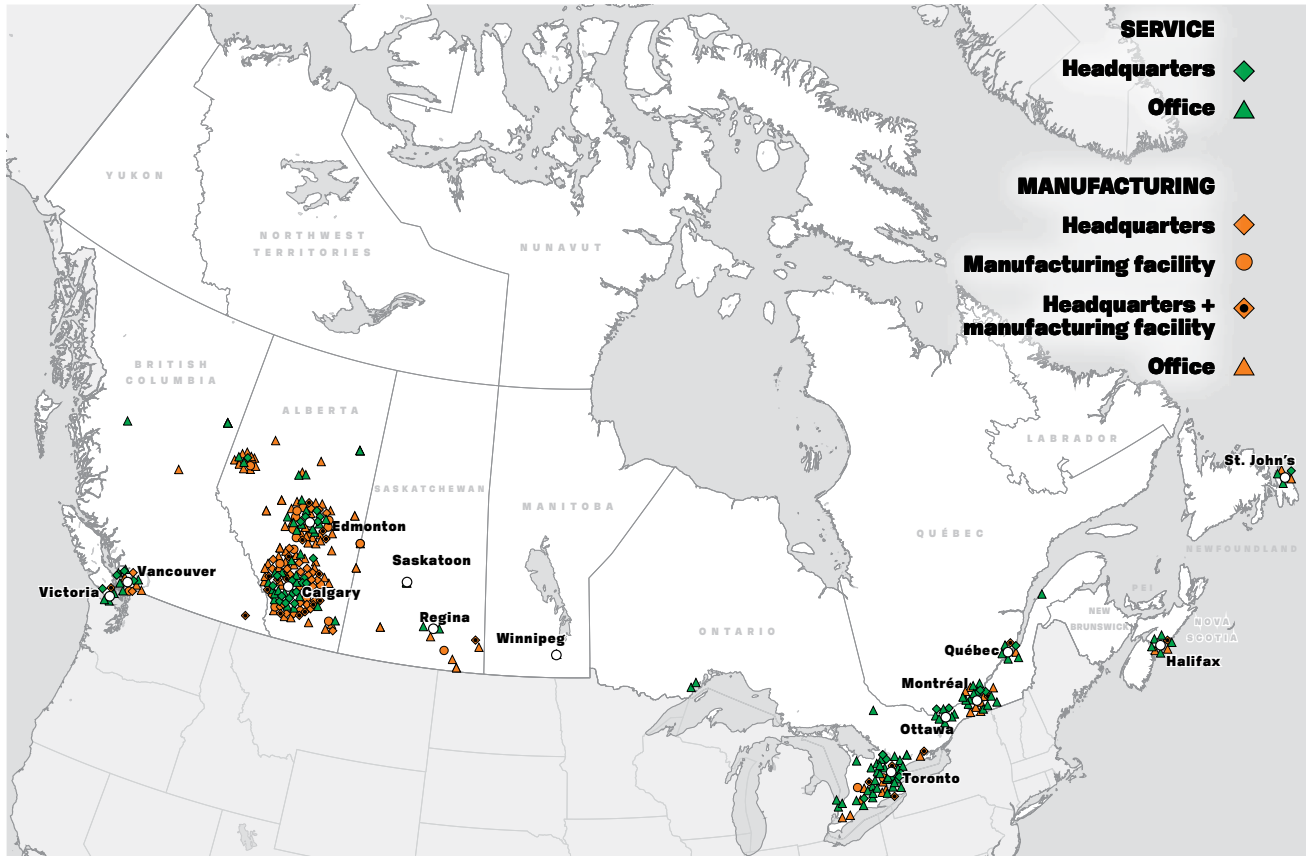
**FIGURE 6. NUMBER OF MANUFACTURING FIRM LOCATIONS IN CANADA, BY TYPE, 2024**



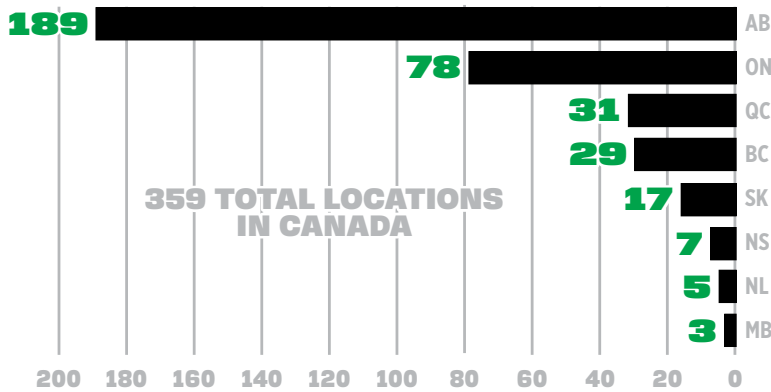
**FIGURE 7. NUMBER OF SERVICE FIRM LOCATIONS IN CANADA, BY TYPE, 2024**



**FIGURE 8. MAP OF METHANE MITIGATION FIRM LOCATIONS IN CANADA, 2024**



**FIGURE 9. METHANE MITIGATION FIRM LOCATIONS IN CANADA, BY PROVINCE, 2024**



The industry is heavily concentrated in Alberta (see Figure 8), Canada's largest producer of crude oil, natural gas, and refined petroleum products (Canada Energy Regulator 2024). Alberta, with 189 locations, is home to over half of the total 359 company locations identified nationwide. Ontario hosts 78 locations, with a moderate number of sites in Quebec, British Columbia, and Saskatchewan (see Figure 9). Nova Scotia, Newfoundland, and Manitoba have fewer, mostly consisting of office locations of large US firms such as AECOM, John Crane, and Weatherford.



## WAGES

Mitigating methane emissions from the oil and gas industry not only protects the global climate and recovers a valuable product for producers; it also creates good jobs.

Manufacturing low-emission and zero-emission equipment involves a wide range of roles, from conceptual design and engineering through fabrication and assembly. These are well-paying jobs, and, according to our interviews with companies, often allow for upward mobility.

Median hourly wages for the relevant occupations are found in Table 5.

**TABLE 5. MEDIAN WAGES IN METHANE MITIGATION MANUFACTURING IN CANADA, KEY OCCUPATIONS, 2023**

Occupation	Median Hourly Wages (CA\$)
Chemical engineers	\$ 50.43
Electrical and electronics engineers	\$ 46.63
Electrical and electronics engineers	\$ 46.63
Civil engineers	\$ 45.00
Mechanical engineers	\$ 43.27
Mechanical engineers	\$ 43.27
Computer systems developers and programmers	\$ 41.54
Computer systems developers and programmers	\$ 41.54
Occupational health and safety specialists	\$ 38.46
Public and environmental health and safety professionals	\$ 38.31
Electrical and electronics engineering technologists and technicians	\$ 35.00
Industrial engineering and manufacturing technologists and technicians	\$ 31.50
Industrial designers	\$ 28.85
Electronics assemblers, fabricators, inspectors and testers	\$ 20.00

Source: (Government of Canada 2023)

Similarly, providing methane leak detection and measurement services requires a variety of roles, including innovation and development of new technologies and methods, such as advanced sensors, drones, and software for advanced data analysis. Median hourly wages for the relevant occupations are found in Table 6. Since much of the service work is field-based, it is not at risk of being off-shored.

**TABLE 6. MEDIAN WAGES IN METHANE MITIGATION MANUFACTURING IN CANADA, KEY OCCUPATIONS, 2023**

Occupation	Median Hourly Wages (CA\$)
Computer and information systems managers	\$ 60.58
Chemical engineers	\$ 50.43
Geoscientists and oceanographers	\$ 48.08
Geological engineers	\$ 47.80
Computer engineers (except software engineers and designers)	\$ 46.63
Other professional occupations in physical sciences	\$ 46.39
Aerospace engineers	\$ 46.15
Data scientists	\$ 45.96
Metallurgical and materials engineers	\$ 45.00
Cybersecurity specialists	\$ 43.59
Mechanical engineers	\$ 43.27
Engineering inspectors and regulatory officers	\$ 42.95
Business development officers and market researchers and analysts	\$ 42.05
Power engineers and power systems operators	\$ 42.00
Computer systems developers and programmers	\$ 41.54
Computer systems developers and programmers	\$ 41.54
Industrial instrument technicians and mechanics	\$ 39.00
Public and environmental health and safety professionals	\$ 38.31
Aircraft instrument, electrical and avionics mechanics, technicians and inspectors	\$ 38.25
Chemists	\$ 38.00
Aircraft mechanics and aircraft inspectors	\$ 37.29
Web developers and programmers	\$ 36.06
Electrical and electronics engineering technologists and technicians	\$ 35.00
Industrial engineering and manufacturing technologists and technicians	\$ 31.50
Geological and mineral technologists and technicians	\$ 30.00
Industrial designers	\$ 28.85
Aircraft assemblers and aircraft assembly inspectors	\$ 27.00
Electronics assemblers, fabricators, inspectors and testers	\$ 20.00

Source: (Government of Canada 2023)

# COMPANY PROFILE: GHGSAT

When two aerospace engineers founded GHGSat in 2011, NASA and other space agencies were already performing satellite monitoring of greenhouse gas emissions at a regional or global scale to inform climate policy. But the mission of GHGSat was to develop instruments with greater accuracy and a higher resolution, enabling its satellites to trace greenhouse gases directly to the industrial facility producing them. Five years later, in 2016, GHGSat became the world's first entity to launch a satellite that could directly measure and attribute industrial emissions.

Jean-Francois Gauthier, Senior Vice President of Strategy, says the company is expanding quickly. It now has 12 satellites in space, and nine others in production, to monitor oil and gas facilities, landfills, coal mines, and agriculture. Oil and gas clients make up 50-60% of GHGSat's commercial portfolio. Compared with a landfill or dairy farm (where methane emissions are inherent to production), emissions from oil and gas facilities result largely from leaks and venting, making them either fixable, or preventable altogether, Gauthier says. "That's why oil and gas is the low-hanging fruit of methane emission reduction."

## **BENEFITS**

Satellites enable clients to monitor large swaths of territory without deployment on the ground, eliminating any issues with getting access to sites, including remote ones. GHGSat's results are granular, detecting methane leaks to a spatial resolution of 25 meters, about half the length of an Olympic swimming pool. Adding more satellites enables operators to survey more sites more frequently than is practical with on-the-ground methods.

GHGSat emphasizes its satellites' ability not just to detect methane emissions but also to measure their flow rate. Other detection methods only determine the concentration of methane in surrounding air. By contrast, "We can detect emission rates as low as 100 kg per hour," says Gauthier, "and we can verify whether they are persistent; after doing 5-6 passes over time, we can say yes, they are still there." A methane leak of 100 kg per hour is considered a "super emitter" and is equivalent to the CO<sub>2</sub> emissions from consuming almost 900 litres of gasoline per hour (Natural Resources Canada, n.d.).

While satellites are an important tool to monitor and measure methane emissions, they are not a silver bullet. The global methane problem requires a suite of options to match the best approach to each situation. For instance, GHGSat complements its satellite monitoring with aircraft, at a detection threshold of 10 kg per hour. This can be done, say, quarterly, to catch smaller leaks below the GHGSat's 100 kg/hr threshold.

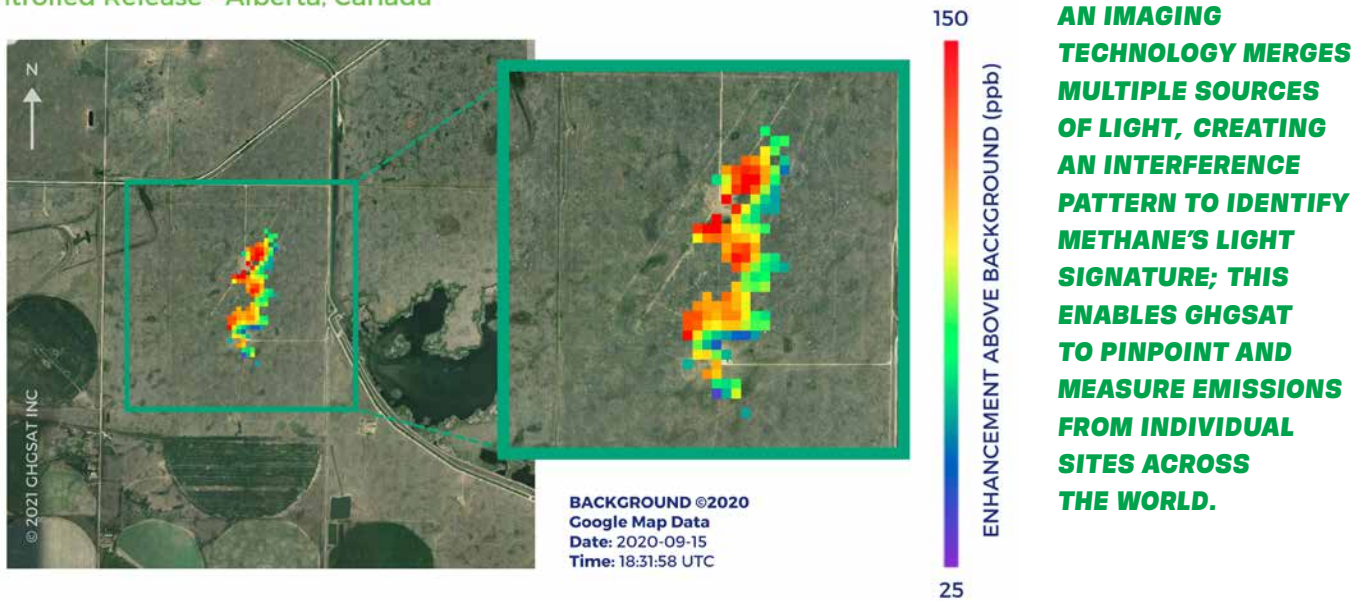
## **HIGHLY SPECIALIZED JOBS**

Most GHGSat staff are on the operational side, working highly specialized jobs with a strong science component, including geo-spatial analysts, geo-spatial engineers, and data engineers processing satellite data. The Calgary office has a large sales staff, with additional offices in Montreal and Ottawa. In all, the company has 160 people worldwide, including a growing office in London and two sites in the Middle East. Since 2022, the staff has increased by 40%.

Gauthier also notes that his team is almost equally balanced between men and women.

## Satellite CH<sub>4</sub> Measurement

Controlled Release - Alberta, Canada



**AN IMAGING TECHNOLOGY MERGES MULTIPLE SOURCES OF LIGHT, CREATING AN INTERFERENCE PATTERN TO IDENTIFY METHANE'S LIGHT SIGNATURE; THIS ENABLES GHGSAT TO PINPOINT AND MEASURE EMISSIONS FROM INDIVIDUAL SITES ACROSS THE WORLD.**

“We’re an inclusive, diversified team. This is very important to us as a company.”

### **FUTURE PLANS**

With its data on global methane emissions validated by NASA and the European Space Agency, GHGSat is launching additional satellites into orbit, leveraging new technology, and partnering with governments, industry, and researchers.

The company is increasingly moving beyond just data and turning to action. For instance, in a collaboration with Carbon Limits and the Oil & Gas Climate Initiative, GHGSat collected more than 530 observations over 18 sites in Algeria, Egypt, and Kazakhstan, identifying methane plumes ranging from 75 kilograms of methane per hour to a plume reaching 4,500 kilograms per hour. The identified plumes included 15 persistent methane sources that had been previously unknown. With this data and capacity training, operators on the ground were able to mitigate substantial methane

leaks, which had a combined average emissions rate of 3,200 kilograms of methane per hour.<sup>3</sup>

The company also plans to further advance its detection capabilities to detect and measure ever-smaller leaks from space. Its technology can now detect leaks of 100 kilograms per hour; it aims to achieve in the 50 kg/hour range and potentially 10kg/hour, which is what GHGSat currently achieves with aircraft. “For now,” Gauthier says, “you’re locating individual sources of methane from 500 kilometers above the Earth, and the objective is to find the relatively big leaks, while other survey technologies can combine to catch the smaller ones.”

### **LOCATIONS**

Calgary, Montreal, and Ottawa;  
Houston; London, UK.

<sup>3</sup> For more details, see the white paper at <https://www.ogci.com/download-white-paper>

# COMPANY PROFILE: SIRIUS CONTROLS

Oil and gas operators routinely depend on various chemicals to ensure that their wells, pipelines, and facilities operate without trouble—for instance, to prevent pipelines from freezing in cold weather or to break up wax formations that result during production. Edmonton-based Sirius Controls provides chemical injection systems. Unlike the legacy pneumatic pumps used by the industry for the past 60 years, Sirius Controls’ pumps run on solar power.

Tyler Teece, Business Development Manager, explains that the pumps the company is replacing are a very large but controllable emission source in which the pumping action requires intentionally venting pressurized natural gas. Instead, Sirius Controls replaces the pneumatics with solar packs, eliminating those emissions. Reductions by customers using Sirius solar pumps and other emission-reducing equipment amount to over 10.3 million tonnes of CO<sub>2</sub> equivalent — in other words, equal to removing roughly 482,000 cars from the roads for an entire year.<sup>4</sup>

<sup>4</sup> Sirius Controls tracks a third-party-validated “Carbon Clock” at <https://www.siriuscontrols.com/>

By adding monitoring and automated controls to the technology, Teece says, “We collect data from the well and our pumping equipment so we hit the target injection rate, which helps prevent many kinds of well failure.” This makes chemical injection more fit for purpose, reliable, robust, and self-controlled. “Compare this to a worker who may or may not check the site regularly, and the chemical rate gets adjusted maybe a couple of times a year. Our autonomous control frees up operators so they can focus on other tasks.”

## **BENEFITS TO OPERATORS**

Sirius Controls’ tagline is “Profitable Environmental Solutions.” The company knows that its products need to boost the bottom line, and they do so by providing operational benefits. According to Teece, the best way to incentivize operators is to create a technology that “ticks all their boxes.” Many customers would not replace their pneumatic pumps solely for environmental reasons. “It’s more like, ‘how do we get more oil and gas out of the ground, safer, quicker, cheaper, with less failures?’”

Federal methane rules have been in place since 2018 in Canada, and they include requiring

**SOLAR-POWERED  
CHEMICAL INJECTION  
PUMPS REPLACE GAS-  
DRIVEN PNEUMATIC  
PUMPS, REDUCING  
METHANE EMISSIONS;  
AUTOMATED CONTROL  
ENSURES THAT THE  
PUMPS DELIVER  
THE RIGHT AMOUNT  
OF CHEMICAL.**



operators to use alternatives to pneumatic pumps, especially on new wells. For old wells, carbon credits are available to incentivize operators to replace legacy pneumatic pumps. Sirius Controls provides an autonomous control package that can be used on all kinds of well sites. The components are modular and can be moved from one well to another as needed.

### **CREATING GOOD JOBS**

Numerous Sirius Controls staff have been with the company for many years. According to Teece, dozens of staff have taken opportunities for advancement. For instance, a colleague he now works with daily started on an assembly line, moved up in operations, and is now on the international sales team, where she plays a key role in developing customers among some of the world's largest oil and gas producers outside North America.

Along with upward mobility comes on-the-job training. In its manufacturing center, Sirius hones the steps in its manufacturing process in a way that enables employees without prior knowledge to learn the basic jobs quickly. This allows bright people to come in, learn, and get up to speed with a portion of the tasks, and then receive cross-training on numerous other tasks to diversify their skill set, a win for employees and for the company.

### **SECURE AND RELIABLE SUPPLY CHAIN**

Teece notes that with time, Sirius has found improved efficiencies and cost savings by bringing much of its supply chain inhouse. Today, most of the manufacturing work is done within the company's warehouse at the Edmonton headquarters. This creates benefits such as building their own electric motors without having to rely on external suppliers for the major components. By only buying parts

and pieces, the company has a much wider range of vendors it can purchase from, giving it greater control and flexibility. While the COVID-19 pandemic presented supply chain challenges, Teece says, "We didn't miss a single delivery through the entire pandemic. We are incredibly proud of our operations team."

### **LOOKING AHEAD**

Sirius Controls plans to incorporate more automation in its future products, as well as expanding further into markets outside North America, including producers in the Middle East that could serve North American as well as European markets. Accordingly, the company is working with strategic partners internationally to provide automation at all levels, from simple to complex. For instance, in partnership with a global service company, a project in Ecuador focused on wells that were not frequently inspected and were not regularly adjusting injection rates. As a result, some wells were failing multiple times per year.

The project gathered data from each well and applied advanced modeling to continuously optimize the amount of chemical injected. With the added automation, some wells were adjusting chemical quantities over 200 times a day, meaning that the right amount of chemical was injected at the right time. The wells have not failed since.

Teece believes that this case study provides a glimpse into the future. "Where we can go as Sirius — and as an industry — is taking that kind of massive solution to methane emissions and providing it in a compact, modular design that can go anywhere in the world."

### **LOCATIONS**

Calgary, Edmonton.

# CONCLUSION

The Canadian methane mitigation industry is a vital and innovative sector, playing a crucial role in helping Canada meet its climate goals. With a robust presence of manufacturing and service firms, this industry is distributed across Canada and particularly concentrated in Alberta. Small businesses dominate, driving economic growth and job creation.

The European Union plans to impose an import standard in 2030 that will require natural gas to come from low-emitting sources. Canada's methane mitigation industry has the potential to enable Canadian producers to meet this and other future standards required to address global climate change. Canadian firms are in the forefront of developing innovative technologies and, increasingly, exporting their products and services internationally.

Mitigating methane emissions is not only one of the most impactful ways to fight climate change; it also provides economic benefits, creating

high-quality, well-paying jobs, many of which require on-site work and are thus less susceptible to offshoring. Economic benefits also accrue to oil and gas operators. Many methane emissions from oil and gas operations can be avoided at no net cost, highlighting the financial viability of methane mitigation equipment and services.

Demand for methane mitigation is likely to keep growing if governments progressively strengthen regulations to achieve ambitious methane reduction targets. If federal regulations to achieve a 75% reduction from 2012 levels by 2030 are finalized — along with their provincial equivalents — Canada's methane mitigation companies are poised to make this commitment a reality. At least 136 manufacturing and service companies are already helping operators reduce their emissions while providing Canadians with high-quality jobs.



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## MANUFACTURING FIRM LIST

FIRM	TECHNOLOGY	EMPLOYEES	SALES (US\$ MILLIONS)	LOCATION TYPE	LOCATIONS
A. W. Chesterton	RPS, V	1,001-5,000	\$51-\$500	Office	Burlington, ON; Anjou, QC
ABB Group*	CR, FS, UAV, A, S	10,001+	\$10,001+	HQ	St Laurent, BC
Accurata	VRU	<50	<\$15	HQ	Calgary
Aerometrix*	LD, OGI, CR, UAV	<50	<\$15	HQ + Mfg	Victoria, BC
Aeryon Labs	LD, UAV	<50	<\$15	HQ + Mfg	Waterloo, ON
AESSEAL	RPS	1,001-5,000	\$501-\$1,000	Office	Surrey, BC
Alberta Welltest Incinerators	FM	<50	<\$15	HQ	Red Deer County
Applied Compression Systems	VRU	<50	<\$15	HQ + Mfg	Cranbrook, BC
Atlantis Research Labs	FM	<50	<\$15	HQ	Medicine Hat
Blair Air Systems	APD	<50	<\$15	HQ	Morrin
Boreal Laser		<50	<\$15	HQ + Mfg	Edmonton
Bray	V, APD	1,001-5,000	\$51-\$500	Office	Lachine, QC; Anjou, QC; Mississauga, ON
Bruin Pumps	APD, RP	<50	<\$15	HQ + Mfg	Edmonton
Calscan	FS, V, APD, RP	<50	<\$15	HQ	Edmonton
Caron Measurement & Controls	LD, APD, RP	<50	<\$15	HQ + Mfg, Mfg, Office	Valley View, Grande Prairie, Fort St. John, BC
Chart Industries	APD	5,001-10,000	\$1,001-\$10,000	Office	Brantford, ON; Concord, ON; Edmonton, St-Bruno, QC
Clear Rush Company	VRU, FM	<50	<\$15	HQ, Mfg	Sundre, Medicine Hat
ComAp	GC, RP	201-1,000	\$51-\$500	HQ	Edmonton
Compact Compression	VRU, GC	<50	<\$15	HQ	Calgary
Compressor Engineering*	CR, RPS	201-1,000	\$51-\$500	Office	London, ON
Convrg	APD, RP	51-200	\$15-\$50	HQ + Mfg, Office	Rocky View County, Calgary
Curtiss-Wright	APD	5,001-10,000	\$1,001-\$10,000	Mfg, Office	Stratford, ON
DARKAI Valve	V	<50	<\$15	HQ	Dayton Valley
Durlon Sealing Solutions	RPS	201-1,000	\$51-\$500	HQ + Mfg	Belleville, ON
EagleBurgmann	RPS	<50	<\$15	Office	Edmonton, Calgary, Dartmouth, NS; Milton, ON
Emission Rx*	LD, FM	<50	<\$15	HQ + Mfg	Calgary
Enerflex*	APD, RP	1,001-5,000	\$1,001-\$10,000	HQ, Mfg, Office	Calgary, Grande Prairie, Mississauga, Edmonton, Red Deer, Medicine Hat, Fort St John, BC
Envision Manufacturing and Supply	APD, VRU	<50	<\$15	HQ + Mfg	Lacomb
Eosense	FS, MGL	<50	<\$15	HQ + Mfg	Dartmouth, NS
Extreme Telematics Corp	PLVT, RP	<50	<\$15	HQ	Calgary
Flex Energy Solutions	APD, VRU, FM, GC, RP	51-200	\$15-\$50	Office	Grande Prairie
FLIR Systems	OGI, CR, FS, MGL, UAV	1,001-5,000	\$501-\$1,000	Mfg	Richmond, BC
Fluidstream	VRU	<50	<\$15	HQ	Calgary
Forum Energy Technologies	V, VRU	1,001-5,000	\$501-\$1,000	Office	Red Deer, Edmonton
GASPRO Compression	APD, VRU	<50	<\$15	HQ	Three Hills

\*Company is also a service firm.

Table continues on next page.

**TECHNOLOGIES:** **LD:** Leak Detection Services | **MGL:** Mobile Ground Labs | **RPS:** Rod Packing & Dry Seals | **PLVT:** Plunger Lift & Velocity Tubing | **OGI:** Optical Gas Imaging  
**UAV:** Unmanned Aerial Vehicles | **V:** Low-emission Valves | **VRU:** Vapor Recovery Units | **RP:** Non-Fossil-Fuel Remote Power | **CR:** Other "Close Range" | **A:** Aircraft  
**APD:** Alternatives to Gas-driven Pneumatic Devices | **FM:** Flare Mitigation | **FS:** Fixed Sensors | **S:** Satellites | **REC:** Reduced Emissions Completions  
**GC:** Gas Capture For Use Or Distribution



## MANUFACTURING FIRM LIST

FIRM	TECHNOLOGY	EMPLOYEES	SALES (US\$ MILLIONS)	LOCATION TYPE	LOCATIONS
General Magnetic	APD, RP	<50	<\$15	HQ + Mfg	Calgary
Global Power Technologies	LD, APD, FM, RP	51-200	\$15-\$50	HQ + Mfg, Mfg	Calgary, Bassano
iJACK Technologies	VRU, GC	<50	<\$15	HQ + Mfg, Office	Moosomin, SK; Calgary, Stettler
Industrial Scientific	CR	1,001-5,000	\$501-\$1,000	Office	Sherwood Park
Innio	FM	1,001-5,000	\$501-\$1,000	HQ + Mfg	Welling, ON
John Crane*	RPS	5,001-10,000	\$1,001-\$10,000	Office	Edmonton, Stoney Creek, ON; Saint -Laurent, QC; Quebec City, QC; Bedford, NS
John Zink Hamworthy Combustion	VRU, FM, GC	201-1,000	\$51-\$500	Office	Calgary, Edmonton, Vancouver, BC; Saskatoon, SK; Winnipeg, MB; Toronto, ON; Kirkland, QC; Ste-Hélène-de-Bagot, QC
K.C. Seals	RPS, PLVT	<50	<\$15	HQ + Mfg	Calgary
Kathairos**	APD	<50	<\$15	HQ, Office	Calgary, Clairmont
Kinitics Automation	APD	<50	<\$15	HQ	Vancouver, BC
LCO Technologies	APD, RP	<50	<\$15	HQ + Mfg	Calgary
Liberty Lift	PLVT	201-1,000	\$15-\$50	Office	Calgary, Leduc County
Luxmux Technology	CR, FS	<50	<\$15	HQ	Calgary
Mantl Artificial Lift	PLVT	51-200	\$15-\$50	HQ, Office, Mfg	Calgary, Macklin, SK; Sedgewick, Moosomin, SK; Bonnyville, Wabasca- Desmarais, Peace River, Lloydminster, Taber, Slave Lake, Swift Current, SK
Marathon Compression	APD, VRU	<50	<\$15	HQ + Mfg, Office	Calgary
Microdrones	CR, UAV	201-1,000	\$51-\$500	Office	Vaudreuil-Dorion, QC
NexSource	LD, APD	51-200	\$15-\$50	HQ, Office, Mfg	Red Deer, Nisku, Rocky Mountain House, Grande Prairie, Bentley, Drayton Valley, Sylvan Lake
Next Compression	VRU, GC	51-200	\$15-\$50	HQ	Rocky View County
NOV	LD, APD, PLVT, VRU	10,001+	\$1,001-\$10,000	Office	Leduc
Petro Techna International	VRU	51-200	\$15-\$50	HQ + Mfg	North York, ON
PureJet	FM	<50	<\$15	HQ	Calgary
Qnergy	APD, FM, GC	<50	<\$15	Office	Calgary
Qube Technologies	CR, FS, RP	51-200	\$15-\$50	HQ	Calgary
Quest Gasket & Supply	RPS, V	51-200	\$15-\$50	HQ + Mfg, Office	Edmonton, Nisku, Calgary
Questor*	LD, FS, FM, GC	<50	<\$15	HQ, Office	Calgary, Grande Prairie
Raise Production	PLVT	<50	<\$15	HQ, Office	Calgary
Robco	RPS	201-1,000	\$51-\$500	HQ + Mfg, Mfg	Montreal, QC; Mississauga, ON; Edmonton
Sirius Controls	APD, RP	51-200	\$15-\$50	HQ + Mfg, Office, Mfg	Edmonton, Grand Prairie, Calgary, Weyburn, SK
SLB	LD, CR, FS, V, APD, PLVT, FM	10,001+	\$10,001+	HQ, Office	Calgary, Spruce Grove, Fort St. John, BC; Nisku, Edmonton, Mount Pearl, NL; Edson
Solar Turbines	APD, FM, RP	1,001-5,000	\$1,001-\$10,000	Office	Edmonton, Calgary

\*Company is also a service firm.

Table continues on next page.

\*\*Kathairos is a service firm that provides an alternative to gas-driven pneumatics in partnership with manufacturing firms Chart Industries and US-based Kimray.

**TECHNOLOGIES:** LD: Leak Detection Services | MGL: Mobile Ground Labs | RPS: Rod Packing & Dry Seals | PLVT: Plunger Lift & Velocity Tubing | OGI: Optical Gas Imaging

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GC: Gas Capture For Use Or Distribution

### MANUFACTURING FIRM LIST

FIRM	TECHNOLOGY	EMPLOYEES	SALES (US\$ MILLIONS)	LOCATION TYPE	LOCATIONS
Spartan Controls	APD	1,001-5,000	\$501-\$1,000	HQ, Office	Calgary, Edmonton, Fort McMurray, Grande Prairie, Whitecourt, Burnaby, BC; Fort St John, BC; Prince George, BC; Midale, SK; Regina, SK; Saskatoon, SK
Synodon*	LD	<50	<\$15	HQ	Edmonton
Tara Energy Services*	FM	201-1,000	\$51-\$500	HQ	Calgary
Telops*	OGI, UAV, A	51-200	\$15-\$50	HQ + Mfg	Quebec City, QC
Tornado Combustion	FM	51-200	\$15-\$50	HQ	Calgary
Total Combustion	FM	<50	<\$15	HQ + Mfg, Office	Red Deer County, Grande Prairie, Lancaster, ON
TRIDO Industries	APD, RP	<50	<\$15	HQ, Office	Calgary, Red Deer
Tundra Process Solutions		51-200	\$15-\$50	HQ + Mfg, Mfg, Office	Calgary, Edmonton, Fort McMurray, Grande Prairie, Saskatoon, SK
Valence Natural Gas Solutions	FM, GC	<50	<\$15	HQ	Calgary
Vapure Engineering	VRU	<50	<\$15	HQ + Mfg	Calgary
Ventbuster	FS	<50	<\$15	HQ + Mfg	Airdrie
Volatus Aerospace*	LD, OGI, CR, UAV	51-200	\$15-\$50	HQ + Mfg	Oro-Medonte, ON
Weatherford	APD, PLVT	10,001+	\$1,001-\$10,000	Office, Mfg	Bonnyville, Calgary, Clairmont, Dresden, ON; Edmonton, Estevan, Fort St John, BC; Lloydminster, Macklin, SK; Nisku, Paradise, NL; Red Deer, Redcliff, Swift Current, SK; Whitecourt
Well Master	PLVT	51-200	\$15-\$50	Office	Fort St John, BC; Grande Prairie, Edson, Rocky Mountain House
Winterhawk Well Abandonment	REC	<50	<\$15	HQ	Calgary
Zeeco	VRU, FM, GC	1,001-5,000	\$501-\$1,000	Office	Brighton, ON

\*Company is also a service firm.

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**GC:** Gas Capture For Use Or Distribution



## SERVICE FIRM LIST

FIRM	TECHNOLOGY	EMPLOYEES	SALES (US\$ MILLIONS)	LOCATION TYPE	LOCATIONS
4Blue Energy Services	LD, OGI	<50	<\$15	Office	Calgary
ABB Group*	CR, FS, UAV, A, S	10,001+	\$10,001+	HQ	St Laurent, BC
AECOM Canada		10,001+	\$10,001+	HQ, Office	Burnaby, BC; Calgary, Edmonton, Halifax, NS; Makham, ON; Mississauga, ON; Montreal, QC; Ottawa, ON; Quebec City, QC; Regina, SK; Saskatoon, SK; Victoria, BC; Winnipeg, MB
Aerometrix*	LD, OGI, CR, UAV	<50	\$15-\$50	HQ	Victoria, BC
Airborne Energy Solutions	LD, A	51-200	\$15-\$50	HQ	Whitecourt
Airdar	LD	<50	<\$15	HQ	Edmonton
AltoMax	LD, UAV	<50	<\$15	HQ	St. John's, NL
Arolytics		<50	<\$15	HQ, Office	Calgary, Halifax, NS
Avanade		10,001+	\$10,001+	HQ, Office	Toronto, ON; Edmonton, Calgary, Montreal, QB, Ottawa, ON; Vancouver, BC
AVEVA Canada		1,001-5,000	\$501-\$1,000	HQ, Office	Calgary, Montreal, QC
BAE Systems Canada	LD, CR, A, S	10,001+	\$10,001+	HQ	Ottawa, ON
Canadian UAVs	UAV	<50	<\$15	HQ	Calgary
CHZero Emissions	FM, GC	<50	<\$15	HQ	Calgary
Clearstone Engineering	LD, CR, FM	<50	<\$15	HQ	Calgary
CMC Research Institutes	LD	<50	<\$15	HQ	Calgary
Compressor Engineering*	CR, RPS	201-1,000	\$51-\$500	Office	London, ON
Current Surveillance	LD	<50	<\$15	Office	Evansburg
Dataiku	S	201-1,000	\$51-\$500	Office	Toronto, ON
Emission Rx*	LD, FM	<50	<\$15	HQ	Calgary
Enerflex*	APD	1,001-5,000	\$1,001-\$10,000	HQ, Office	Calgary, Grande Prairie, Mississauga, ON; Red Deer, Medicine Hat, Fort St John, BC
Enviro Trace	LD	<50	<\$15	HQ	Saint Albert
ERM Consultants Canada		5,001-10,000	\$501-\$1,000	Office	Toronto, ON; Calgary, Montreal, QC; Vancouver, BC; Victoria, BC; Smithers, BC
Gas Recon	LD, OGI, A	<50	<\$15	HQ	Calgary
GHD	LD, OGI, CR	10,001+	\$1,001-\$10,000	Office	Waterloo, ON; Montréal, QC; Toronto, ON; Ottawa, ON; Laval, QC; Peterborough, ON; St. Catharines, ON; Mississauga, ON; Whitby, ON; Québec City, QC; Brossard, QC; Markham, ON; Rimouski, QC
GHGSat	LD, S	201-1,000	\$51-\$500	HQ, Office	Montreal, QC; Calgary, Ottawa, ON
GreenPath Energy	LD	<50	<\$15	Office	Calgary
Hetek Solutions	LD, CR	51-200	\$15-\$50	HQ, Office	London, ON; Edmonton, Paradise, NL
Highwood Emissions Management		<50	<\$15	Office	Calgary
Insight Environmental	LD, OGI, UAV	51-200	<\$15	Office	Shelburne, ON
IntelliView Technologies	LD	<50	<\$15	Office	Calgary
Intero The Sniffers	LD, OGI, CR, FS, MGL, UAV	51-200	\$15-\$50	Office	Toronto, ON; Calgary
Intricate Group	LD	<50	<\$15	HQ	Calgary

\*Company is also a manufacturing firm.

Table continues on next page.

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## SERVICE FIRM LIST

FIRM	TECHNOLOGY	EMPLOYEES	SALES (US\$ MILLIONS)	LOCATION TYPE	LOCATIONS
John Crane*	RPS	5,001-10,000	\$1,001-\$10,000	Office	Edmonton, Stoney Creek, ON; Saint-Laurent, QC; Quebec City, QC; Bedford, NS
Kuva Systems	LD	<50	<\$15	Office	Calgary
Internat Energy Solutions Canada	LD	<50	<\$15	HQ, Office	Toronto, ON; Calgary
LSI	CR, A	<50	<\$15	HQ	Calgary
mCloud		<50	<\$15	HQ	Vancouver, BC
Modern West Advisory		<50	<\$15	Office	Calgary
Montrose Environmental	LD, OGI	1,001-5,000	\$501-\$1,000	Office	Calgary
Qii.ai	LD, UAV	<50	<\$15	HQ	Toronto, ON
Questor Technology*	FS, FM, GC	<50	<\$15	HQ, Office	Calgary, Grande Prairie
Sander Geophysics	LD, CR	51-200	\$51-\$500	HQ	Ottawa, ON
SLR Consulting (Canada)		<50	<\$15	Office	Toronto, ON
SolutionCorp	LD	<50	<\$15	HQ	Stettler
Stantec		10,001+	\$1,001-\$10,000	HQ, Office	Edmonton, Toronto, ON; Mississauga, ON; Waterloo, ON; Calgary, Vancouver, BC; Thunder Bay, ON; Burnaby, BC; Markham, ON; Ottawa, ON; Victoria, BC; Saint-Laurent, QC; London, ON; North Bay, ON; Stoney Creek, ON; Winnipeg, MB; Longueuil, QC
Surface Solutions	LD	<50	<\$15	HQ	Grande Prairie
Synodon*	LD	<50	<\$15	HQ	Edmonton
Tara Energy Services*	FM	201-1,000	\$51-\$500	HQ	Calgary
Team	LD, OGI	5,001-10,000	\$10,001+	Office	Dartmouth, NS; Edmonton, Ft. McMurray, Kitchener, ON; Mt. Pearl, NL; Oakville, ON; Pickering, ON; Red Deer, Regina, SK; Sarnia, ON; Slave Lake, Thunder Bay, ON
Telops*	OGI, UAV, A	51-200	\$15-\$50	HQ	Quebec City, QC
Trinity Consultants		201-1,000	\$51-\$500	Office	North York, ON
Vertex Resource Group	LD	1,001-5,000	\$501-\$1,000	HQ	Sherwood Park
Volatus Aerospace*	LD, OGI, CR, UAV	51-200	\$15-\$50	HQ	Oro-Medonte, ON
West Country Energy Services	LD	<50	<\$15	HQ, Office	Red Deer, Drayton Valley
WSP		10,001+	\$10,001+	HQ, Office	Montréal, QC; Laval, QC; Ottawa, ON; Lachine, QC; Peterborough, Etobicoke, ON; Brampton, ON; Barrie, ON; Owen Sound, ON; Kitchener, ON; Cambridge, ON; Vancouver, BC; Thornhill, ON; Toronto, ON; Québec City, QC

\*Company is also a manufacturing firm.

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