



Government of Canada

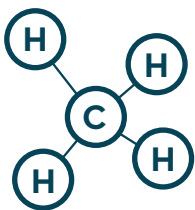
Trade Commissioner Service

Gouvernement du Canada

Service des délégués commerciaux

Canada

CANADA'S CLEANTECH INDUSTRY: METHANE TECHNOLOGIES IN OIL AND GAS OPERATIONS



Canadian companies are developing and implementing innovative and groundbreaking technologies to

address methane emission challenges in the energy sector.

The sector is advancing the understanding of fugitive methane emission sources, reducing methane emissions and improving operational efficiency. Supporting this work is the Petroleum Technology Alliance Canada (PTAC), a hydrocarbon industry association that facilitates technology development to enhance environmental stewardship; Clean Resource Innovation Network (CRIN), a network that connects innovators, vendors and end users to water specialists, government collaborators and funders; Canada's Oil Sands Innovation Alliance (COSIA), an alliance of oil sands companies who have invested \$1.4 billion in technologies to improve environmental performance; and Canada CleanTech Alliance, a national alliance for clean technology.

ALBERTA METHANE FIELD CHALLENGE (AMFC)

The AMFC is an opportunity to assess the real-world performance of new methane-sensing technologies in comparison with conventional optical gas-imaging-based leak-detection surveys. Operators and regulators in Canada are interested in new technologies that can deliver cost-effective methane emission detection/quantification compared to conventional approaches. The AMFC permits selected technology teams to participate in leak-detection surveys at specific oil and gas facilities in a 2,500 km² area within Alberta.

CANADIAN EMISSIONS REDUCTION INNOVATION CONSORTIUM (CANERIC)

CanERIC is a Canadian network of emissions reduction test facilities. It provides support to producers, technology providers, academia, regulators and policy makers from coast to coast while embracing collaboration. CanEric provides a complete suite of facilities responding to the innovation needs of tools with a technology readiness level (TRL) of 5-9 related to upstream detection, quantification, mitigation, conservation, conversion and flaring of methane and short-lived climate pollutant emission sources. The network identifies and closes gaps in testing capability and provides researchers and innovators with comprehensive access to high-quality facilities.

NOTEWORTHY CANADIAN CLEANTECH METHANE TECHNOLOGIES COMPANIES

> Westgen Technologies

Cost-effective elimination of well site pneumatics methane venting

> Altus Group, Geomatics Division

Vehicle-based emissions monitoring service

> Calscan Solutions

Vent gas measurement and electric controls developer

> Target Emission Services

Fugitive emission management and leak detection and repair services

> Emission RX

Equipment provider for emission mitigation technologies

> Capstone

Blowout recovery equipment and well control services

> Process Ecology

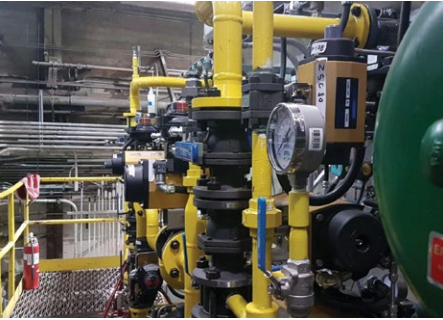
Engineering, emissions reporting, and software development

> Sirius

Intelligent solar and electric chemical pumping solutions

METHANE TECHNOLOGIES IN OIL AND GAS OPERATIONS

CANADIAN COMPANIES WORKING GLOBALLY



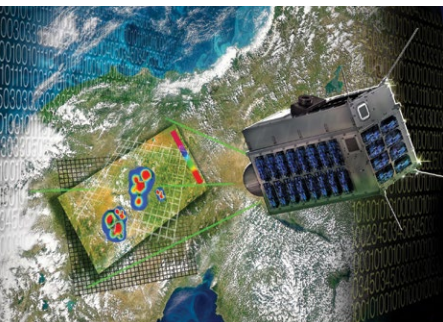
SPARTAN CONTROLS > spartancontrols.com

Natural gas is pumped up through the ground to production wells and then large industrial engines using reciprocating compressors push the gas on its way to plants, pipelines and eventually homes. The performance of these compressors, which run mostly on natural gas, is critical to the success of the operation. **Spartan Controls** found a way to make these engines run leaner and greener via a patented air-fuel ratio control system called REMVue. **Spartan Control's** REMVue air-fuel control system decreases the amount of fuel needed for combustion, allowing older industrial engines to operate at more optimized air-fuel ratios than originally designed.



TRIDO INDUSTRIES > tridoind.com

Russ Graham, president of **TRIDO Industries**, saw an opportunity to improve a technology to enhance oil field operations while lowering the environmental impact. Over a 2-year period, **TRIDO** worked to develop a viable solar pump prototype. The device allows operators to pump chemicals to one site or multiple locations, as well as pump at different rates and pressures for more accurate chemical injection. Compared to older solar technologies, the pump draws less power, requiring fewer solar panels and batteries. Since commercializing the technology, **TRIDO** has installed about 1,500 of its solar-power systems to run approximately 2,500 pumps throughout Canada and the United States.



GHGSAT > ghgsat.com

GHGSat's vision is to become the global reference for remote sensing of greenhouse gas (GHG) and air quality gas emissions from industrial sites using satellite technology. **GHGSat's** novel technology and satellite platform enables GHG and air quality gas measurement with better accuracy at a fraction of the cost of comparable alternatives. Owners of industrial facilities can monitor all their facilities, local or remote, anywhere in the world with a common technology. Significantly improved emissions information enables industrial operators to better measure, control, and ultimately reduce, emissions of GHGs and air quality gases.



CAP-OP ENERGY > capopenenergy.com

Running a tight operation in the oil and natural gas industry involves constant improvements that can reduce greenhouse gas (GHG) emissions. However, operators often find it daunting to properly track and quantify such reductions. Thankfully, since 2012, **Cap-Op Energy** has offered an automated data-management system called the Distributed Energy Efficiency Project Platform (DEEPP). By leveraging advanced calculation and reporting algorithms, it enables operators to track numerous distributed energy-efficiency projects for carbon credits under current and proposed government carbon-taxation schemes. The system has been used successfully by operators to track over 1,000 methane-abatement and energy-efficiency projects across Alberta.

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