

CLEAN RESOURCES

ADVANCED HYDROCARBONS

CLEANER HYDROCARBON PRODUCTION – METHANE EMISSIONS REDUCTION

FUNDING DETAILS

Scalable Mobile Methane Sensing System for Emissions Detection, Quantification, and Reduction

The University of Calgary is developing a new scalable mobile technology to efficiently and cost-effectively measure and monitor methane emissions from the oil and gas (O&G) sector. The technology consists of a vehicle-based sensing system that uses field-proven hardware, advanced analytics, IoT, and edge and cloud computing to measure, map, attribute, and quantify methane emissions from upstream facilities.



RECIPIENT:

University of
Calgary – Dr. C.
Hugenholtz



PARTNERS:

U of C Global
Research Initiative,
U of C SENST



TOTAL BUDGET:

\$816,000



AI FUNDING:

\$366,000



PROJECT DATES:

JAN 2019 –
MAY 2022



PROJECT TRL:

Start: 6
End: 9

APPLICATION

The immediate target market for the technology is the Alberta oil and gas industry. Specific end users of the technology include oil and gas producers, service providers, and regulators. The longer-term target market includes oil and gas producers, service providers, and regulators in Saskatchewan, BC, Colorado, Texas, and other production areas in the USA.



ALBERTA INNOVATES CLEAN RESOURCES

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PROJECT GOALS

- The goal of the project is to translate a prototype system into a commercial solution by Q2 2022 or sooner. This will be accomplished by:
 - Upgrading and refinement of system components to create an optimized product for commercial distribution.
 - Validating the technology through tests used to mature custom analytical methods for detecting, attributing, and quantifying facility-level methane emissions.
 - Pilot deployment will be used to define the market fit and potential.

BENEFITS TO ALBERTA

- This technology supports Alberta’s goal of enabling sustainable development of oil and gas resources that have low carbon intensity and achieve cleaner production than other production regions globally.
- The project will also create a pathway for commercializing made-in-Alberta technology with a strong scientific underpinning and increased potential for export and uptake in foreign markets.
- Key benefits are:
 - Reduced Leak Detection and Repair (LDAR) program costs of 10-50%
 - Partnership between academia and end users
 - Collaborations between oil and gas producers and leak detection service provider
 - Attraction and retention of HQP
 - Emerging commercial use of the technology



2 Publications



5 Students
Trained



5 Project Jobs



13 Future Jobs



1 New
Products/Services



1 Spinoff
Companies



410 kT/yr Future
GHGs Reduced
(enabled)

CURRENT STATUS

March 2020

The technology has matured rapidly. Testing has been conducted to demonstrate the system’s effectiveness in detecting methane emissions in a controlled environment and at 180 upstream oil and gas facilities in Alberta. An IoT/cloud system has been developed to consume field data and support scalability. The project is on track and on schedule.