

CLEAN ENERGY

ADVANCED HYDROCARBONS

CLEANER HYDROCARBON PRODUCTION – METHANE EMISSION REDUCTION

FUNDING DETAILS

Intelligent Methane Monitoring and Mitigation System (IM3S)

Through its Climate Leadership Plan, Alberta has made strategic investments in new technologies to detect and mitigate fugitive methane emissions from the O&G sector. However, a missing component of the Province's methane reduction strategy is a pathway to support the implementation of these technologies. To address this gap, the IM3S Project will build an innovative decision support system that: (1) provides information that could be used in regulatory approval of new leak detection technologies, (2) optimizes the implementation of new technologies in fugitive emissions management programs to achieve mitigation targets at the lowest cost, and (3) guides technology development and commercialization.



RECIPIENT:

**PTAC – Petroleum
Technology
Alliance Canada**



PARTNERS:

**WEDC, University
of Calgary**



TOTAL BUDGET:

\$1,215,000



AI FUNDING:

\$600,000



PROJECT DATES:

**NOV 2019 –
JUN 2022**



PROJECT TRL:

**Start: 7
End: 9**



APPLICATION

Developers of new technologies lack a present-day market because an analytical model to support the potential approval of novel methods of detecting and quantifying methane is under development. Oil & Gas (O&G) Operators with assets in Alberta and throughout Canada face investment costs estimated in the hundreds of millions of dollars and increases in operating costs of the same magnitude for improved methane monitoring and mitigation. Effective deployment of lower cost and higher performing technologies will permit operations to grow while complying with environmental requirements.

ALBERTA INNOVATES CLEAN ENERGY

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PROJECT GOALS

- Develop a modeling system to support regulatory approval and optimize the implementation of new detection technologies, methods, and programs that contribute to Alberta's methane reduction goal.
- Develop an enhanced scientific understanding of the performance and implementation of different methane detection technologies and methods.
- Support validation and deployment of clean technologies for reducing methane and associated air pollutants.
- Support Alberta policies to reduce methane emissions 45% by 2025.
- Enhance leading-edge innovation capacity by academics and entrepreneurs in Alberta.
- Increase business growth and employment at innovative companies, particularly SMEs.
- Support future-oriented clean tech skills development, particularly for HQPs.

BENEFITS TO ALBERTA

- IM3S benefits Alberta, the industry and the public as a whole, not as individuals.
- The model will provide information that could be used in the regulatory approval process of new, lower-cost technologies, improving the economics of the methane emissions reduction efforts.
- Encourage the economic growth of SMEs in Alberta supporting methane emissions reduction initiatives by increasing the marketability of their methane monitoring, quantification and mitigation products and services.
- Once established in the Alberta market, these SME technologies will become strong contenders for export sales to other oil and gas producing regions and countries.



10 Publications



15 Students
Trained



1 - 10 Project Jobs



11 - 100 Future
Jobs



19,000 kT/yr Future
GHGs Reduced

CURRENT STATUS

MAY 2022

The Leak Detection and Repair Simulator (LDAR-Sim) was developed at the University of Calgary to evaluate the emissions reduction potential of alternative LDAR programs. The simulator has integrated inputs standards, reporting protocols, geographic data, and economic functions into an interactive Web App. A final report and performance report cards are nearing completion targeted for Q2 - 2022.