

Fugitive Emission Management Program Effectiveness Assessment RFP

On behalf of the Methane Research Planning Committee (MRPC), PTAC wishes to retain the services of a qualified research organization or consulting firm with demonstrated experience. The MRPC is comprised of representatives from producers and government organizations including Environment Canada Climate Change, Alberta Energy Regulator and Alberta Environment and Parks. The MRPC also seeks input from British Columbia Ministry of Natural Gas and Saskatchewan Ministry of Economy and will be creating a multi-stakeholder advisory panel for project oversight. This project is funded through the Alberta Upstream Petroleum Research Fund (AUPRF) <http://auprf.ptac.org/>.

Interested parties are invited to submit a proposal according to the specification provided herein.

Phase 1: Literature Review, Data Analysis & Field Study Design Recommendations Scope

1. Conduct a global literature review to gather information on programs to manage fugitive

emissions, which may include leak detection and repair (LDAR) campaigns and audio, visual, olfactory (AVO) inspections, to better understand what factors influence the effectiveness of these programs. Factors could include specifics around operational practices, design, construction, detection, repair, and maintenance. Materials reviewed should include best available / currently implemented technologies and associated data. Potential information sources include, but are not limited to:

- US EPA NSPS Technical Support Documents or other regulatory support documents;
- Data from Upstream Oil & Gas (UOG) operations, including supporting data from research performed within the US, Canada, Eastern Europe and other jurisdictions;
- Peer-reviewed scientific and technical studies, such as those conducted by Environmental Defense Fund, Carbon Limits, and PTAC; and
- Clearstone Inventory and Emission Factor reports.

2. A summary of literature review findings, an analysis of data, and identify gaps in research where more information is needed, or research is incomplete. This information will aid in the design of a field based data collection/leak measurement study to be conducted in the

upstream oil & gas industry within the province of Alberta. Areas of interest include:

- Present leak contribution factors (including description of the causal relations between equipment and source / magnitude of leaks) relevant for quantifying emission factors that are not limited to for e.g, leak occurrence rate, leak magnitude distribution, repair effectiveness, and inspection frequencies. Identify other factors that would need to be considered to better reflect the upstream sector;
- Evaluation of existing quantification methodologies and associated parameters used to develop emission factors from equipment components reflecting different LDAR practices that are not limited to for e.g, differing in frequencies and coverage.
- Datasets and distributions on leak size (speciated volume, concentration or other relevant metric), frequency of occurrence, effectiveness and longevity of repairs and how these may differ by component type, facility, component service, etc.;
- Methane emission reduction potential associated with elements of a FEMP and inspection frequency (every two years, annual, bi-annual, quarterly, monthly or

other). Include commentary on variables that may affect reduction potential, i.e.: baseline fugitive emission management practices, preventative maintenance, operations, etc.;

- Relevance and applicability to Canadian operations; and
- Similar knowledge established within other industries that may be generally translated to the upstream oil & gas industry.

3. Analyze the information and data gathered in the literature review and provide recommendations on the design of a scientifically credible field study to further research the effectiveness of FEMPs.

- The upstream oil & gas industry consists of many producers who operate many different facility types of various sizes and vintages for natural gas, crude oil and primary bitumen with a range of component types and counts. With this in mind, field study design considerations should include:
 - Development of data collection approach that could lead to the development of a robust quantification approach for emission factors.
 - Optimizing the number of study sites

and measurement events, including subsequent resurveys to best achieve a representative understanding of fugitive emission leak profiles and program effectiveness;

- Details of what data and information to collect;
- How data quality will be assessed and ensured;
- Differentiation of fugitive emission leaks and venting;
- Site selection methodology and criteria; and
- Clear and concise expectations of operators participating in the study.

Phase 2: Initial Field Study, Data Analysis & Preliminary Reporting Scope

1. Finalize the field study design with the PTAC Methane Research Planning Committee (MRPC) , with consideration given to:

Recommendations from Phase 1;

- Inclusion of controlled sites that are implementing alternative mitigation approaches, such as, continuous monitoring, routine maintenance, best management practices, etc. for purpose of completing a comparative analysis to detection and mitigation approaches at

- other study sites;
 - AVO inspections in advance of comprehensive surveys;
 - Comprehensive surveys at pre-determined intervals (monthly, quarterly, or annual) that can qualitatively identify leaks and quantify leaks, where identified in study methodology.
 - Operators will be made aware of leaks and repairs will be documented.
 - As part of the survey conduct a root cause analysis, where possible.
 - Methodology should enable differentiation of leaks that are new vs. leaks that occur as a result of insufficient repair.
 - Repeat surveys at select sites at a prescribed frequency (monthly, quarterly or annual). This may allow for evaluation of seasonal variations and trends.
2. With the support of the Alberta Energy Regulator (AER), finalize site selections and arrangements for study participation of operators.
 3. Execute the initial field study.
 4. Conduct data analysis and prepare a draft preliminary report. Areas of interest for the report include:
 - Effectiveness of intentional and targeted AVO inspections (do AVO inspections have

an impact on early detection of leaks, and what is the impact on potential emission reductions);

- Incremental benefits of more frequent surveys and how that is affected by historic baseline practices (FEMPs, preventative maintenance, etc.);
- Rate of occurrence for each likely cause of leaks
- Effectiveness of repairs (statistics on the length of time between repair and recurrence of a leak);
- Comparison of data to summarized literature review findings; and
- Limitations of the study.

5. Review and incorporate pertinent of peer-review feedback.
6. Prepare a presentation to be delivered to the PTAC Air Research Forum and to the MRPC for evaluation of progress.

Potential Phase 3: Subsequent Field Study, Data Analysis, Peer Review & Final Report Scope

1. MRPC review of initial findings and contractor performance evaluation.
2. Conduct a gap analysis of the Phase 2 findings and establish if any additional field measurements are required
3. Execute the subsequent field study.
4. Prepare a final draft report that summarizes

- findings and any limitations of the study.
5. Review and incorporate pertinent of peer-review feedback.
 6. Complete all project deliverables including final report and presentation to MRPC and other project stakeholders.

Expected Project Time Frame

- Phase 1: December 2017 to May 2018
Phase 2: March 2018 to March 2019
Phase 3: Potential timing TBD.

Budget

The maximum total budget for Phase 1 & 2 is \$300,000 CAD.

Phase 1 budget estimate: ~\$50,000 to \$75,000 CAD.

Phase 2 budget estimate: ~\$225,000 to \$250,000 CAD.

Phase 3 budget estimate: TBC based on evaluation of Phase 2 results.

Confidentiality

The Contractor will be required to sign a confidentiality / recipient agreement related to the project. Disclosure of any project information will be at the discretion of PTAC. It is the intention of PTAC that key results and outcomes will eventually be made public.

RFP Schedule

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| October 3, 2017 | RFP issued |
| October 30, 2017 | Deadline for receipt of Full Proposals by PTAC |

November 13, 2017 Committee Proposal Review
Complete

November 30, 2017 Feedback loop with proponents and
final selection

Contents of Proposals

Proposal Requirements (maximum 7 pages + Annex):

Each bidder shall provide the following information:

1. Statement of Capabilities of Project Team: years of experience, citation list of relevant scientific peer-reviewed publications in credible scientific journals; descriptions of relevant projects the team has carried out (indicating duration, sector, cost and level of effort, objectives, and roles of the team, including the leads for study design, literature review, field sampling, data analysis and reporting), CV's (in Annex) of team members, and any other relevant information that gives evidence of the qualifications of the team to carry out this work.
2. Project management and control information: indication of roles of team members (project manager / overall project direction, financial management, literature review, field measurement, data analysis, reporting; expected level of effort (hours) and hourly rates / unit rates for field work.
3. Project Plan (Scope & Deliverables): Bidders are

to provide information demonstrating their understanding of the project requirements and their planned approach for carrying out the study, their awareness of the relevant literature and on-going relevant projects, and the key elements of this project required for successful completion and how they will complete them. The bidder must also identify plausible potential problems and challenges, and identify reasonable solutions for the potential problems.

4. Budget & Payment Schedule (if any preferences).
5. References. 3 client references shall be provided. References will be asked to speak to the quality of the product produced, subject matter expertise in this area, budget and schedule management, ability to foresee and overcome challenges and judgement and communications ability in balancing potentially conflicting needs regarding scope, budget and schedule.

Evaluation

The proposal will be evaluated for the following technical elements:

- Capability of the team in terms of relevance to this project.
- Ability to produce a scientifically credible project design.
- Understanding of project requirements.

The primary evaluation criteria will be technical. Proposals meeting the technical requirements will proceed to financial evaluation based on level of effort and rates (a reasonable test will be applied by the proposal bid evaluation team to evaluate the financial information).

Submit Proposals

Proposals should be submitted online using the following form: RFP Application Form

PTAC is the neutral facilitator of these RFPs and PTAC staff will not screen, evaluate or make decisions on what will proceed. Technical questions should be emailed to PTAC at lmayes@ptac.org

Contact Information

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