CANADA'S OIL & NATURAL GAS PRODUCERS

October 12, 2018

Sean Curry
Vice President, Operational Policy & Environment
British Columbia Oil and Gas Commission
PO Box 9331 Stn Prov Govt
Victoria, British Columbia V8W 9N3

via e-mail to Sean.Curry@bcogc.ca

Dear Mr. Curry:

Re: Conceptual Approach to Methane Emissions Regulation

The Canadian Association of Petroleum Producers (CAPP) appreciates the opportunity to comment on the Government of British Columbia's (BC) conceptual approach for methane emissions regulation that is intended to fulfill the province's commitment to methane emissions reduction from the upstream oil and natural gas sector of 45% from 2014 by 2025. The regulatory details will be important to ensure consistent interpretation amongst operators for target attainment so we hope to have the opportunity to review and comment on the specific draft regulatory text. We do recognize that the proposed approach reflects many positive attributes:

- Commitment to pursue equivalency under the Canadian Environmental Protection Act to adopt a made-in-BC regulation;
- Adoption of a simpler design, similar albeit not the same as Alberta's regulatory approach, which is important for companies that operate in both jurisdictions; and
- Pursuit of adaptive management through a check-in period to achieve the evidence-informed refinement of regulation based on more robust data, new research and results.

In pursuit of this goal, we believe that it is critical for the province to expedite the consideration of results from the fall 2018 inventory work underway. Time is of the essence to appropriately consider the most recent methane emissions data in the regulatory drafting process via modeling assumptions while still allowing time for equivalency discussions.

CAPP members strive to achieve the 45% target through regulations that are evidence-informed and cost competitive. We believe that more can be done to achieve cost-effective regulation that minimizes the economic impact while still meeting the 45% methane emission reduction target. We believe that two key areas require further attention: Leak Detection and Repair (LDAR) and modelling of methane emission reductions and costs.

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Leak Detection and Repair (LDAR)

Areas of concern:

- We are supportive of the intent to take a risk-based approach to survey frequency, but we believe that the conceptual approach to LDAR may not be the most cost-effective approach to regulation. In our experience, the incremental volume of leaks detected and repaired with a survey frequency of three times per year for LDAR has not been high and, consequently, may result in much higher abatement costs. Furthermore, the abatement cost must be better understood, not only on the basis of average costs, but also the range and distribution of costs across different types of facilities.
- Current studies and baseline work are not considered in the design of LDAR requirements.

Recommendations:

- We agree that surveys should be less frequent for low risk sites relative to high risk sites. Further analysis is needed to confirm the risk-ranking of facilities (e.g., multi-well pads seem comparable to single well pads on risk-ranking).
- We believe that the regulatory approach should be adaptive and responsive to new information. New monitoring and reporting requirements along with considerable research is underway. This new information needs to be taken into account to verify cost-effective approaches to the detection and management of fugitive emissions.

Rationale:

- While increased survey frequency is intended to catch large and infrequent leaks, recent work by Stanford University[1] suggests that proper survey techniques are more important than higher survey frequency as a means for reducing methane emissions. A risk-based approach to LDAR for both survey frequency and techniques is essential to prevent high abatement costs relative to incremental avoided emissions.

  Industry believes a well-designed LDAR regulatory construct (i) begins with a reasonable comprehensive survey frequency, (ii) is adaptive in nature basing the mid to long term comprehensive survey frequency on responsible research and development efforts, (iii) targets the survey efforts on those facilities that pose the greatest emissions risk and (iv) rewards good individual facility performance while achieving the desired environmental outcomes at the least cost burden to industry.

  Through the Petroleum Technology Alliance of Canada (PTAC), industry is partnering with the federal government and provincial regulators to conduct several research and

[1] Ravikumar, A.P. and Brandt, A.R. (2017, November 13). Cost-Effective Methane Mitigation Policy in an Era of Low Natural Gas. Paper presented at USAEE/IAEE North American Conference, Houston, TX.

demonstration initiatives that are either already initiated or planned. These studies will improve our knowledge and reduce uncertainty to better inform the check in period. We believe that as a result of current and future research there will be better and more cost effective tools and methods for screening large, infrequent leaks. CAPP therefore encourages a measured approach to implementing LDAR today: start with less stringent and increase as necessary to ensure target attainment. In our experience, a reduction in prescription is generally perceived as a softening regulatory oversight even when performance indicates outperformance of regulatory outcome.

Modelling Inputs and Assumptions

Areas of concern:

- We believe the modelling of methane emissions is important to inform the setting of appropriate limits. The data sources and assumptions to model methane emissions reduction are not fully transparent. Consequently, the basis for setting the limits and designing features of the regulation are not well understood, particularly for LDAR. This lack of transparency may undermine public and industry confidence in the competitiveness and efficacy of the regulatory design.

Recommendation:

- We believe that work should be undertaken to more transparently reflect the methane emissions model to inform the identification of research priorities. While it is unlikely that model transparency can be fully addressed prior to finalization of regulation, we think it is essential prior to the planned regulatory check-in point. This effort should describe the conceptual architecture, interrelationships amongst data elements, and assumptions. This is essential to generate current estimates, back cast historic and forecast future emissions to support adaptive management for target attainment.

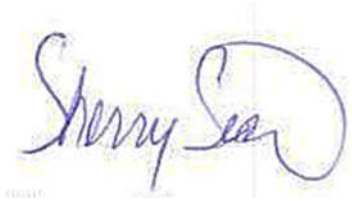
Rationale:

- The federal-provincial equivalency agreement depends on confidence that the methane emission reductions committed to by both levels of government will be achieved. It is in the collective interest of governments and industry to ensure that this model is as representative as possible to ensure cost-effective regulatory design that achieves the methane emissions reduction target.

CAPP has additional detailed feedback. Comments and recommendations about the conceptual model are summarized in Appendix A and input sought on key regulatory elements identified by OGC in the September 14, 2018 consultation session are provided in Appendix B.

We welcome further engagement to understand how our concerns will be addressed to ensure that B.C. Methane Emissions Regulations are designed in a manner that allows B.C.'s oil and natural gas industry to thrive and to continue to bring prosperity to the people of British Columbia. Please contact me at sherry.sian@capp.ca or 403-267-1149 in arrange for further engagement.

Sincerely,



Sherry Sian
Manager – Environment, Health & Safety

/attachments

APPENDIX A: Detailed Comments on Conceptual Framework

Topic (Slide #)	Question/Comment	Recommendation
General	The regulatory language is critical to clarity.	Verify the clarity of definitions of key terms as well as inclusions or exclusions of various equipment and facilities when drafting regulatory provisions. This clarity is essential to achieve consistent interpretation and application necessary for both target attainment and compliance.
Guiding Principles for B.C.'s Regulation, Slide 8 • **Specific**, **simple** and **transparent**– Regulate at the source level, all reporting is public	This principle references the importance of transparency but the approach to modelling methane emission reductions is not transparent.	Expand the application of this principle to the modelling which is used to inform the setting of appropriate limits and informing the design of regulatory provisions.
B.C. Regulatory Timelines, Slide 9 • Nov. 2018 – draft regulation will be presented to the OGC Board • Target to have final regulation approved by June 2019	The role of stakeholders in providing input on draft regulations appears limited to the conceptual model. The regulatory details are important to understand the practicality and feasibility of compliance.	Enable further engagement after the draft regulation is presented to the OGC Board. If modelling suggests challenges in meeting equivalency, industry is best-positioned to inform understanding of B.C. operations to propose option to ensure that the target is met in the most cost-effective way possible.
Estimate of GHG Reductions, Slide 11 • Modelled GHG reduction (Draft BC) shows continued declines	The line depicting emissions for draft BC regulations shows continued decline inconsistent with the projected trend for BAU and ECCC.	Consider sensitivity analysis to depict implications of alternative future development projections for BAU and ECCC model.
Estimate of Cumulative Emissions Reductions, Slide 12	The bar for B.C. regulations suggests significant outperformance of	Clarify the assumptions that resulted in deviations between the projected emissions by ECCC and B.C. post-2025. Incorporate sensitivity analysis into trend projection.

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• Comparative bar graph of emissions by source under ECCC and BC regulation	the projected methane emissions reductions compared to the federal regulations. Furthermore, the direction trend for BC does not align with ECCC's model.	
Total Estimate Reductions or Costs, Slide 13 • LDAR costs	The LDAR methane abatement costs vary significantly between ECCC and B.C.	Provide further information about data sources and assumptions to enable better understanding of the variance and enable industry to share relevant operational experience.
More on Pneumatics, Slide 18 • Exceptions for safety – must then be minimized and technical assessment needed on file	Exceptions are enabled for safety. The focus on safety appears to preclude operational or functionality exceptions.	Describe what is required as part of the technical assessment in guidance. Consider enabling some operational or functionality exceptions.
Expectations on Surveys, Slide 24 • Include all equipment that may be a source of fugitive emissions, including pneumatic devices	If pneumatic devices are allowed for venting on existing sites, how will abnormal operations be assessed?	Clarify what constitutes abnormal operations under proposed approach to abnormal operations.

Expectations on Surveys, Slide 24 • New construction survey within 30 days	Construction projects vary in size: minor piping modifications to facility construction.	Clarify what will be considered new construction.
Expectations on Surveys, Slide 24 • Minimum 60 days apart for comprehensive surveys that must be done 3 times per year	Surveys are required 3 times per year. This seems excessive given our operational experience. See rationale in cover letter.	Incorporate risk-based survey frequency and techniques into the regulatory design.
Expectations on Surveys, Slide 24 • New construction survey within 30 days • Post turnaround survey within 14 days	Expectations for "new construction" and "post turnaround" surveys are unclear.	Consider providing some flexibility for the time between surveys. Clarify that a post-construction or post-turnaround survey will count as one of the requisite surveys each year. Common operational practice is to use soap tests at start up and a post turnaround. Enable the use of alternative screening procedures in Method 21, such as the use of a soap solution, to detect leaks post-construction and at start up.
Surface Casing Vent Flow (SCVF), Slide 28	Maintain existing 300 m^3/day limit.	This requirement would result in relatively small reductions at higher cost per tonne at the low end of vent range. Consider alternative approaches to address low rate vents. If the limit is lowered to 100 m^3/day under regulation, a grace period after drilling should be implemented. This provision would accommodate different cement jobs using nitrogen which may have temporary vent flows (decreasing over time) that are not hydrocarbon vent flows.

APPENDIX B: Additional Input Sought by OGC during September 14, 2018 Consultation

1. Adoption of CSAZ620 in Regulation

The upstream oil and natural gas industry believes that there are fundamental issues with the process used to generate CSAZ620. This standard-setting effort was not limited to a technical standard and set policy outcomes through the design of technical standards.

To the extent that CSAZ620 provides technical guidance, there is value in reviewing these provisions in order to assess relevance and appropriateness for inclusion by reference in the regulation. The incorporation of any guidance should be assessed for regulatory impacts inclusive of costs and benefits.

2. Mechanism to Enable Variance in Survey Approaches/Technologies

The upstream oil and natural gas industry recognizes the reluctance of the OGC to become the body that ascertains that alternative survey approaches and technologies have achieved equivalent outcomes.

3. Obligations for Record Keeping and Reporting

There are mechanisms to track methane emissions currently under the Western Climate Initiative (WCI). This system was originally predicated to support participation in a cap and trade system. It is now worthwhile to evaluate data system requirements in the context of current policy goals.

We recognize that modernization of data management and analytics holds the potential to unlock more efficient, streamlined mechanisms for record keeping and reporting. While we recognize that other mechanisms could be enhanced, none are sufficiently advanced for operationalization congruent with the regulatory requirements. For now, record keeping should rely on current systems.

If any changes are contemplated for record keeping and reporting, we expect to be engaged to define a pathway to transition that minimizes unintended consequences. Furthermore, the design of such a system should adhere, at the very least, to the following design principles to:

- Utilize existing data systems to the extent possible.
- Ensure non-duplicative reporting interface;
- Achieve an integrative system (i.e., no dueling numbers); and
- Facilitate scalable, complex analytics to inform regulatory refinement.

4. Verification of Methane Emissions Reduction

In our experience, verification is often undertaken at an extreme cost to regulated oil and natural gas facilities. This expectation is justified for publicly-funded programs (Clean Infrastructure Royalty Credit Program and Offset protocols) but the design of verification under such programs should strive to be cost-effective to encourage adoption. Given that operators will be required to remove or replace pneumatics to meet a specified performance standard, report on emissions and have changes verified, the verification should rely on existing systems and protocols to achieve this objective. In addition, there are existing mechanisms for inspection and audit of facilities.

5. Purpose and approach to check-in

As the regulated entity, the upstream oil and natural gas industry would like to participate in the scoping and undertaking of the check in point. At the time of the check in point, that we believe is optimally undertaken starting in mid-2021, there will be improved reporting and understanding of actual fugitive emissions and technology performance.

The purpose of this check in period should be to confirm that the province of British Columbia is on a cost-effective path to achieve the methane emissions reduction target. This check in period may consider the following:

- current estimates to assess progress towards the methane emissions reduction target;
- backcast of historic methane emissions in view of new research to validate reductions;
- forecast of future methane emissions to confirm target attainment in 2025;
- adoption of incentives (CIRPC, Offsets) for the retrofit of high- to low- bleed pneumatics,
- confirmation of shut-in to validate refine methane emission model assumptions;
- reaffirmation of methane abatement costs for various technologies and practices for leak detection and emissions control; and
- consideration of best available and economically achievable technology to support methane emissions reduction.

Depending on the results at the check in point, regulatory amendments could be contemplated as early as 2022.

6. Matters Requiring Operational Guidance

We believe that regulation should specify what outcome needs to be achieved by when whereas guidance should describe how outcomes can be achieved.