

Event Report

2024 CanCH4 Symposium





Methane by the Numbers

A national-scale cross-sectoral technical meeting hosted on May 13-15, 2024 at Carleton University, with generous support from Natural Resources Canada, Carleton University's Faculty of Engineering & Design, the EU-Canada Dialogue on Methane as part of the European Union Climate Dialogues (EUCDs) project, and Environmental Defense Fund (EDF).

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Executive Summary

The [2024 CanCH4 Symposium](#) was a seminal event in the field of methane measurement and mitigation with participation across the oil and gas, waste management, and agricultural sectors. Featuring a common theme “Methane By The Numbers”, this 3-day technical meeting brought together 300 attendees from universities, government labs, and the private sector to share latest research, technological development, measurement data, and analytics with the goal of advancing policy development and accelerating emissions reductions.

The program featured 12 cross-sectoral multi-stakeholder sessions spanning over 40 invited talks, 11 panel discussions, 50 poster presentations, a facilitated group discussion, Symposium dinner, and a special event “EU-Canada Dialogue on Methane” as part of the European Union Climate Dialogues (EUCD) project.

The 2024 CanCH4 Symposium facilitated engaging and productive discussion among leading experts, policy makers and analysts, technology providers, industry stakeholders, and academic researchers. The event organization and technical presentations laid a solid foundation for continued cross-sectoral collaboration and dialogue among stakeholders. Most importantly, CanCH4 underscored a critical need for annual meetings to foster knowledge exchange and track progress towards achieving national and global methane emission reduction goals.

Event Program

The 2024 CanCH4 Symposium was inaugurated with the land acknowledgement and welcome note from Prof. Matthew Johnson, the event host. The introduction was followed by a key funding announcement by Yasir Naqvi, a Member of Parliament for Ottawa Centre. Drew Leyburne, the Assistant Deputy Minister of the Energy Efficiency & Technology Sector at Natural Resources Canada made further opening remarks by introducing the theme of the event “Methane By the Numbers” and its alignment with the ongoing government’s efforts in methane measurement and mitigation under Canada’s methane strategy “Faster & Further” and recently launched Methane Centre of Excellence.



Program sessions were moderated by Carrie Taylor and James Diamond (Environment & Climate Change Canada, ECCC) on Days 1 & 2. Aaron Freeman (EDF) moderated the special session “EU-Canada Dialogue on Methane” on Day 3, as part of the European Union Climate Dialogues (EUCDs) project. Each session featured a series of invited talks, followed by ‘lightning’ presentations and panel discussion, complemented with a poster and networking session.





12

cross-sectoral
sessions

42

invited
talks

11

panel
discussions

50

poster
presentations

1

facilitated
discussion

The 2024 CanCH4 Symposium featured a 3-day program spanning over 40 invited talks, 11 panel discussions, and 50 poster presentations across key topics in methane measurement and mitigation research. The presentation topics were carefully curated by a technical committee co-chaired by Matthew Johnson (EERL) and David Risk (FluxLab), drawn from 2-page submissions received in response to CanCH4's open call for abstracts and augmented with targeted invitations to key methane leaders across sectors. The final program covered current national and international trends, measurement challenges, detection and mitigation technologies, regulatory effectiveness, and future opportunities, while featuring collaborative dialogue and technical insights on key methane emission sources across the oil and gas, waste, and agricultural sectors.



Following an official event announcement and open call for abstract submissions (March 12, 2024), the event committee reviewed 60+ submissions to finalize the event agenda (as detailed on the event website).

The final program with 12 distinct sessions featured renowned experts and emerging leaders from prominent Canadian research labs and universities, including Carleton University's Energy & Emissions Research Lab, St. Francis Xavier University's Flux Lab, University of Calgary, University of Toronto, University of Waterloo, McGill University, and Université de Sherbrooke. Additionally, the discussion was broadened by the international researchers from Columbia University, Colorado State University, University of Texas at Austin, Florida State University, and Technical University of Denmark. Key government delegates helped guide the regulatory discussion, with notable contributions from Natural Resources Canada (NRCan), Environment & Climate Change Canada (ECCC), Agriculture and Agri-Food Canada (AAFC), National Research Council Canada (NRC), and Alberta Methane Emissions Program (AMEP), complemented by valuable insights on the regulatory framework from the US Department of Energy (DOE).

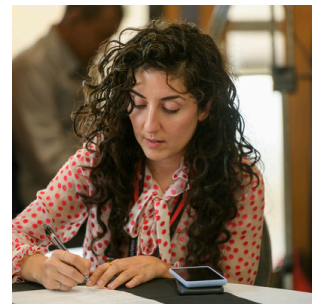
In collaboration with the EU Climate Dialogues Project, the 2024 CanCH4 Symposium enriched its policy discussion with the insights from global experts, including members of the EU Delegation to Canada, Environmental Defense Fund, Pembina Institute, International Association of Oil & Gas Producers (IOGP) Europe, and United Nations Environment Programme (UNEP).



Facilitated Discussion

A round-table discussion at the end of Day 2, moderated by Prof. David Risk (Flux Lab), generated additional engagement among the attendees, complemented by online Slido submissions. The goal of this facilitated session was to constructively discuss and rate Canada's efforts and opportunities across a range of activities related to methane action. Leading methane experts from academia, government and industry presented collective opinions and challenges that represent the current state of methane action and policy in Canada.

As further detailed in the Appendix 'Discussion Results', the groups noted that the overall national policy direction on methane was strong, particularly in inventory development, and leadership on methane measurement, reporting and verification (MRV), specifically in the oil and gas sector. However, significant progress is needed in other sectors, specifically in terms of availability of accurate and standardized data and collaboration among stakeholders on data sharing.



EU-Canada Dialogue on Methane

A special event in collaboration with Dunsky Energy + Climate Advisors and European Union (EU) Commission took place on Day 3 of the symposium. As part of the EU-Canada Dialogue on Methane series, this special session focused on methane emissions reporting, gaps in existing data collection methods and challenges in harmonizing global reporting frameworks. The session provided a broader overview of the international measurement and mitigation efforts, an engaging policy-focused discussion, and a global context for the ongoing work across Canada.



Opening remarks were made by André von Walter, Head of Trade and Economic Section of the EU Delegation to Canada, who emphasized the need for reliable data to implement ambitious methane reduction policies. Adrian Manlagnit, Deputy Director of the Energy Research and Development in Gas and Fuels Systems at Natural Resources Canada (NRCan) provided an overview of the Canadian initiatives in advancing MRV technologies and underscored the need in robust frameworks for accurate reporting.

Subsequent presentations by Environment and Climate Change Canada (ECCC), UNEP's International Methane Emissions Observatory (UNEP IMEO), and panelists (Amanda Bryant, Deborah Gordon, Emils Lagzdins, Katlyn MacKay, and Matthew Johnson) highlighted the ongoing efforts in enhancing compliance and effectively tracking reductions.

This special session and the 2024 CanCH4 Symposium concluded with the closing remarks from Gabriele Wagner, Team Leader of the EU Climate Dialogues Project, who emphasized the collaborative efforts among European and Canadian regulators in achieving the shared goals under the Global Methane Pledge.



Attendees

300

event participants

140

in-person attendees

160

online participants

14

countries

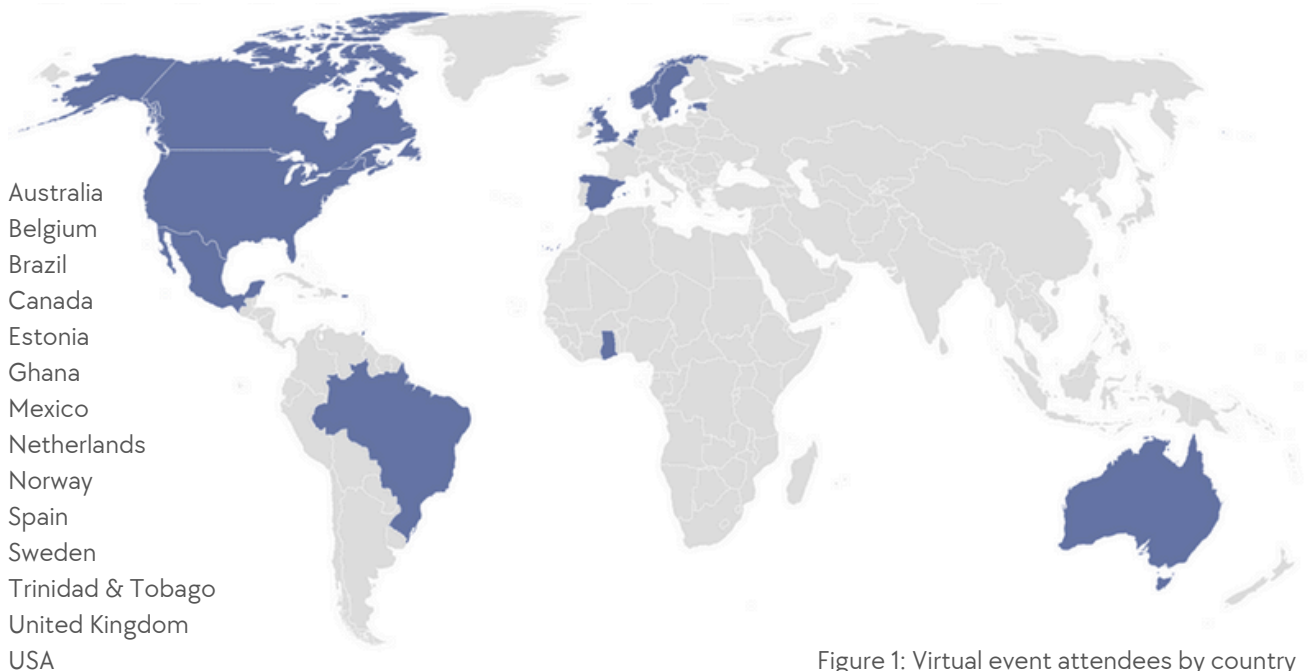


Figure 1: Virtual event attendees by country

The 2024 CanCH4 Symposium surpassed all expectations in regards to participation, technical submissions, attendee experience, and the quality of the discussions. Due to capacity limitations of the conference space, the registration was capped at 125 in-person attendees per day, and the event was made hybrid to encourage additional participation. The event reached its capacity within a week of opening registration, with continuing registration for virtual attendance and a waitlist. In total, 140 people attended in person over 3 days and 160 unique accounts joined online. Virtual attendees joined from 14 countries, mostly from Canada (79%) and USA (13%).

The event attracted a wide range of stakeholders, including university researchers (26%), policy analysts and employees from various government agencies (42%), technology providers and industry representatives (22%), and delegates from environmental non-governmental organizations (2%) and other sectors (8%). Most attendees learned about the event through their colleagues and via LinkedIn (Fig. 3), which is a testimony to how well-connected and engaged the methane network is.

Figure 2: Attendee breakdown by sector

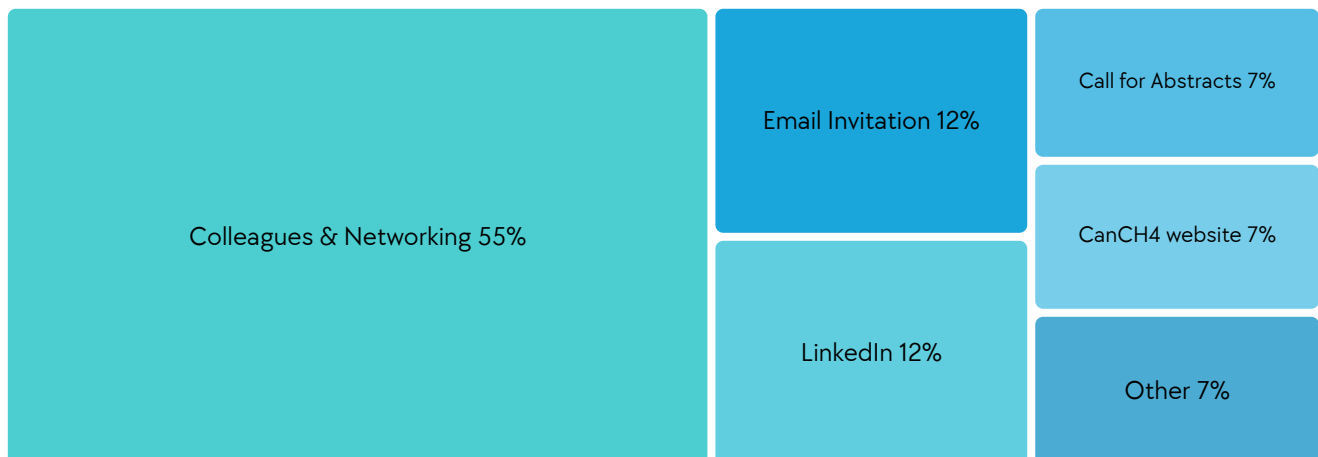
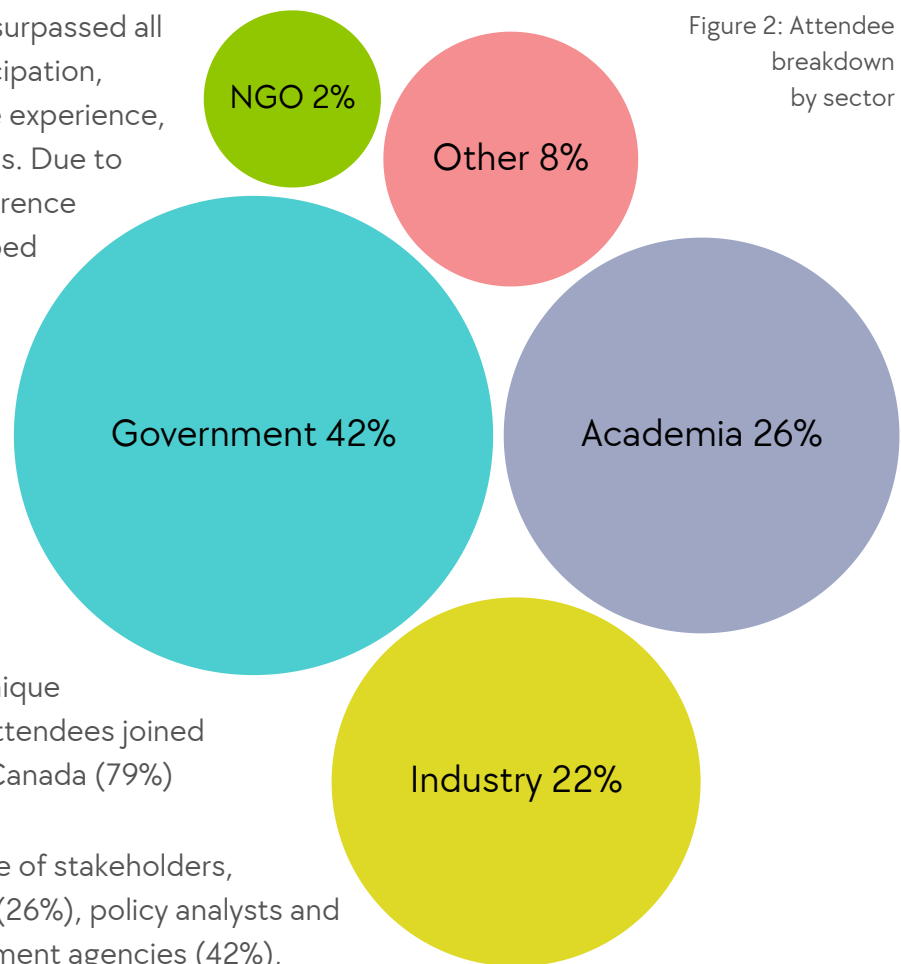


Figure 3: Dissemination of the 2024 CanCH4 Symposium



Event Engagement

The symposium offered attendees an opportunity to interact with the speakers, poster presenters and fellow attendees both in-person and virtually. The event was broadcast online via a dedicated Zoom link, with the video stream featuring the speakers, presenters' slides, snippets of the audience and subtitles, offering an immersive experience. Additionally, virtual attendees were provided access to an online poster session to browse poster presentations during the event. Participants interacted during the plenary sessions, poster discussions, and breaks. An online Slido platform was also made accessible to all participants with a quick scan of the event's QR code. The interactivity of Slido equally engaged both the in-person and virtual attendees in Q&A periods, discussions, and polls.



"Thank you for the excellent organization of the Symposium and your success in attracting high quality attendees. We found the symposium both invigorating and enlightening. We look forward to attending the next edition!"

- Anonymous attendee

Slido's interactive platform significantly enhanced audience engagement by enabling participants to submit questions in real-time. Attendees could view and prioritize the pool of questions through a crowd-sourced voting system, ensuring the most relevant topics were addressed. The session moderator facilitated the discussion by presenting the top-voted questions to the expert panel to gain their insights.

11

Q&A sessions

230

Slido questions received

165

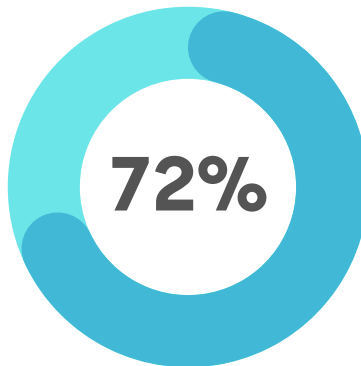
Slido questions answered

564

Slido votes



Actively engaged participants on Slido



Response rate on Slido



Participation in polls on Slido



Post-event Engagement

Following the event, all speaker presentations, panel discussions and facilitated group discussions were posted online on YouTube, with the consent of the authors. This provided an opportunity for attendees to revisit the talks and for a wider audience to experience the full event from May 13-15. This resulted in additional 710 views and a total of 60 hours of watch time, further boosting dissemination of knowledge and engagement with our online community.

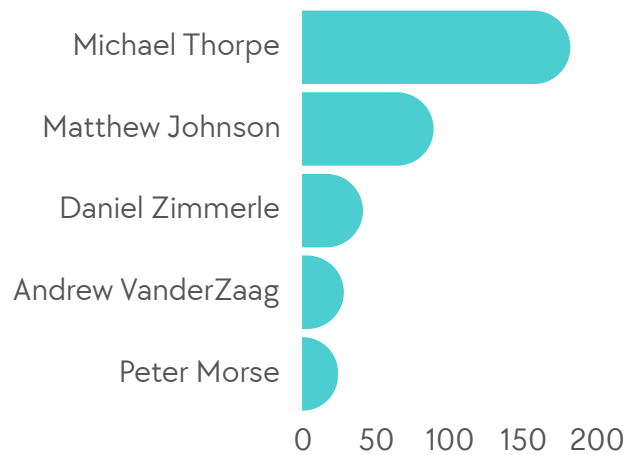


Figure 4: Top-viewed recorded talks

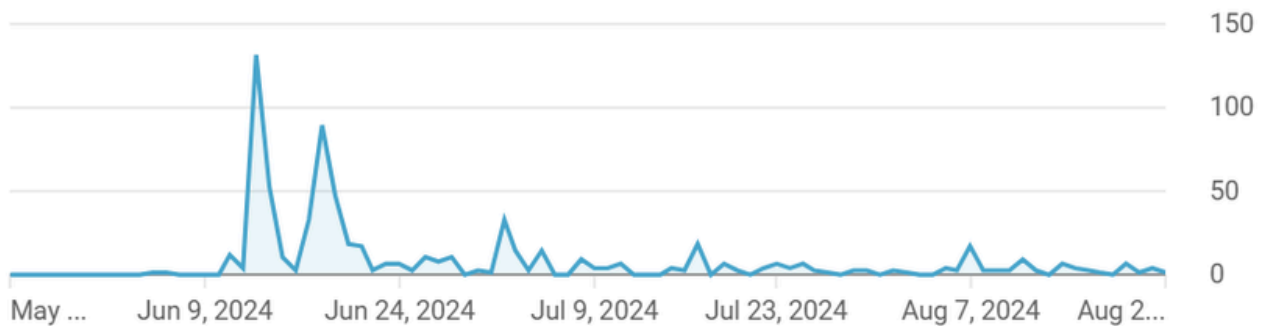


Figure 5: Post-event online views of recorded sessions



Event Feedback

Over the course of the symposium and subsequent email and LinkedIn correspondences, the organizers received overwhelmingly positive feedback. Attendees expressed high satisfaction, highlighting a great overall conference experience, convenient location, timeliness and relevance of the event, exemplary organization, outstanding line-up of speakers, and a keen anticipation for future events. Additionally, a brief post-event survey was conducted from May 30 to June 14, 2024, among the in-person and virtual attendees. A questionnaire included 8 questions gauging attendee experience and gathering insights and comments for the upcoming events.

Most attendees expressed a strong interest in attending future events, making this a recurring annual event (91% showed a very strong interest, 6% favored recurring events, and 3% had a mild preference), and extending timelines for abstract submissions to help secure more speakers and ensure participation from diverse stakeholders.

"The CanCH4 Symposium was truly fantastic, and I'm already eagerly anticipating next year's gathering! Big thanks to all".

- Anonymous attendee



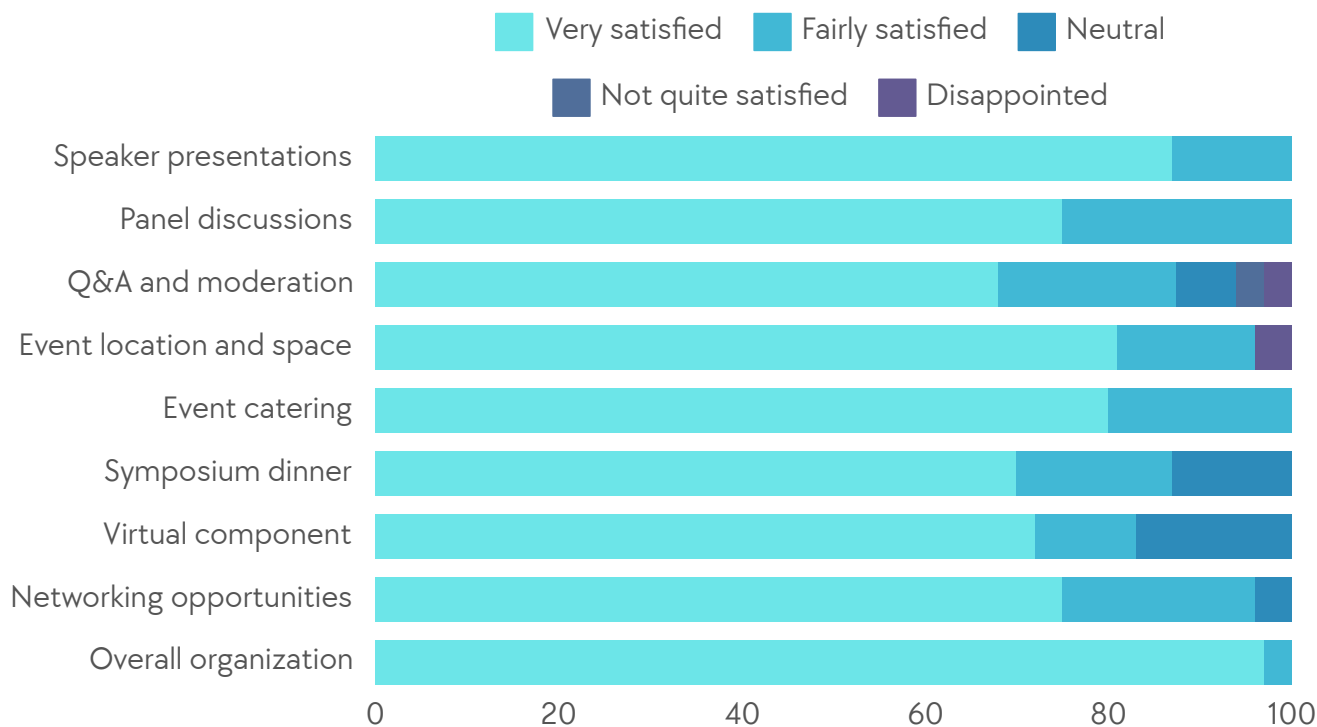


Figure 6: Event satisfaction rating from the post-event survey

Key Highlights

Organization

- Convenient event location that ensured participation of key stakeholders
- Comfortable size and pace of the event, allowing for excellent networking opportunities
- Event communication
- Great coordination of the virtual component

Expert line-up

- The caliber of the speakers and expertise shared across multiple sectors
- Feature of key technology providers aligned with the theme of the event
- Round-table discussions bringing together professionals from all sectors

Relevance

- Technical focus and this year’s theme “Methane by the Numbers”
- Cross-sectoral focus and balanced coverage between measurement and mitigation
- Excellent timing aligning with the launch of Canada’s Centre of Excellence, and recent regulations

Appendix

Facilitated Discussion Responses

Included in this appendix is a summary of assessment and recommendations from the round-table discussions as part of the Facilitated Discussion session on Day 2. The summary was meticulously compiled by the event co-organizers at FluxLab team (St. Francis Xavier University).



Summary of Responses

A collaboration event was held at the end of Day 2 of the 2024 CanCH4 Symposium, to discuss and rate Canada's efforts across a range of activities related to methane action. In-person attendees had discussions at their tables, whereas online participants contributed via Slido. Most of Canada's methane experts were present, so these collective opinions represent a good commentary on the state of methane action and policy in Canada.

The group noted that overall national policy direction on methane is good to strong. We have several areas of strength including inventory evolution, and leadership on MRV - especially in oil and gas. But progress on those issues in other sectors was deemed as uneven or lagging. Data was our most significant national weaknesses where availability of accurate and standardized data on emitters and potential emitters was ranked as relatively poor. Collaboration between actors on data technology sharing was also identified as inadequate, and a major weakness.

Available data on potential emitters: do we have activity and infrastructural data needed to steer Measurement Reporting and Verification, and are datasets readily available?

Overall Grade: C-D. The responses indicate that while some useful data exist, substantial improvements are needed in terms of accessibility, accuracy, standardization, and collaboration to effectively steer Measurement, Reporting, and Verification (MRV) efforts.

Inventories: Have we been active in updating inventories, and how do we perform relative to other countries on inventory development?

Overall Grade: B. While the National Inventory Report (NIR) is performing well with continuous improvements, there are significant areas needing enhancement, especially in agriculture and waste sector. Timeliness, accuracy, and harmonization are key areas for improvement to ensure Canada can maintain and improve its standing relative to other countries in inventory development.

Technology: Do we have access to applicable MRV techs for all sectors and are we developing enough of our own technology?

Overall Grade: B. While Canada is recognized as a leader in MRV technology, especially in the oil and gas sector, there are notable gaps in other sectors such as agriculture and waste. There is a need for more domestic development of MRV technologies, better standardization, and validation, as well as enhanced support and incentives for innovation across all sectors.

How well do we understand the sources and the causal factors and changes over time (including natural)?

Overall Grade: C+/B. While efforts are strong, with a good understanding of oil and gas emissions, significant gaps remain in other sectors, particularly natural and agricultural sources. Sustained funding, better measurement techniques, and increased focus on understudied areas are essential for improving the overall understanding of emission sources and their causal factors.

Deployment: Are we actively and properly deploying MRV to support mitigation in each sector?

Overall Grade: C. While there is notable progress in certain sectors, especially oil and gas, the overall deployment of MRV systems across all sectors remains uneven. Enhanced coordination, funding, and regulatory support are needed to ensure that MRV efforts translate into effective mitigation actions.

Faster and further: Do we have the right plan, or have we missed important sources and MRV opportunities?

Overall Grade: B. The current plan is on the right track but needs enhancements in specific areas, particularly in agriculture, natural sources, and regulatory coordination. Increased funding, faster implementation, and improved technology adoption are critical for addressing these gaps and achieving more effective MRV and mitigation.

Collaboration on infrastructure, data and technologies: Are enough people working together in the methane-relevant sectors? Across sectors?

Overall Grade: C. The collaboration across methane-relevant sectors and within individual sectors is currently inadequate. There is a need for more coordinated efforts, better communication, increased data and technology sharing, and frequent cross-sectoral events to enhance collaboration and drive more effective mitigation strategies.

Creating a community: For a 2030 methane mitigation technical working group, are the right people represented here? For next year, what community or communities do we need to better represent? The current representation in the methane mitigation working group is seen as a solid foundation, but there are significant opportunities for improvement. Increasing participation from underrepresented sectors such as industry, policy, indigenous communities, and financial experts is crucial. Enhanced collaboration across sectors and more dynamic event formats are also recommended to build a more comprehensive and effective community for methane mitigation by 2030.

Key Recommendations across All Areas

1. Improve Data Accessibility and Standardization:

Enhance the availability and accuracy of data, ensuring it is standardized and easily accessible for better MRV efforts.

2. Enhance Collaboration:

Foster better communication and cooperation across sectors, including academia, industry, and government, to drive more effective mitigation strategies.

3. Focus on Underrepresented Sectors:

Increase attention and resources towards agriculture, natural sources, and indigenous communities.

4. Invest in Technology and Innovation:

Support the development and deployment of MRV technologies across all sectors, with a particular emphasis on agriculture and waste.

5. Sustain Funding and Support:

Ensure long-term funding and regulatory support to maintain and improve MRV and mitigation efforts across all sectors.

6. Promote Cross-Sectoral Events and Networks:

Organize frequent events and create active networks to facilitate knowledge sharing and collaboration.

7. Integrate Policy and Financial Expertise:

Include more policy makers and financial experts to develop comprehensive and actionable mitigation strategies.

Image credit:
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