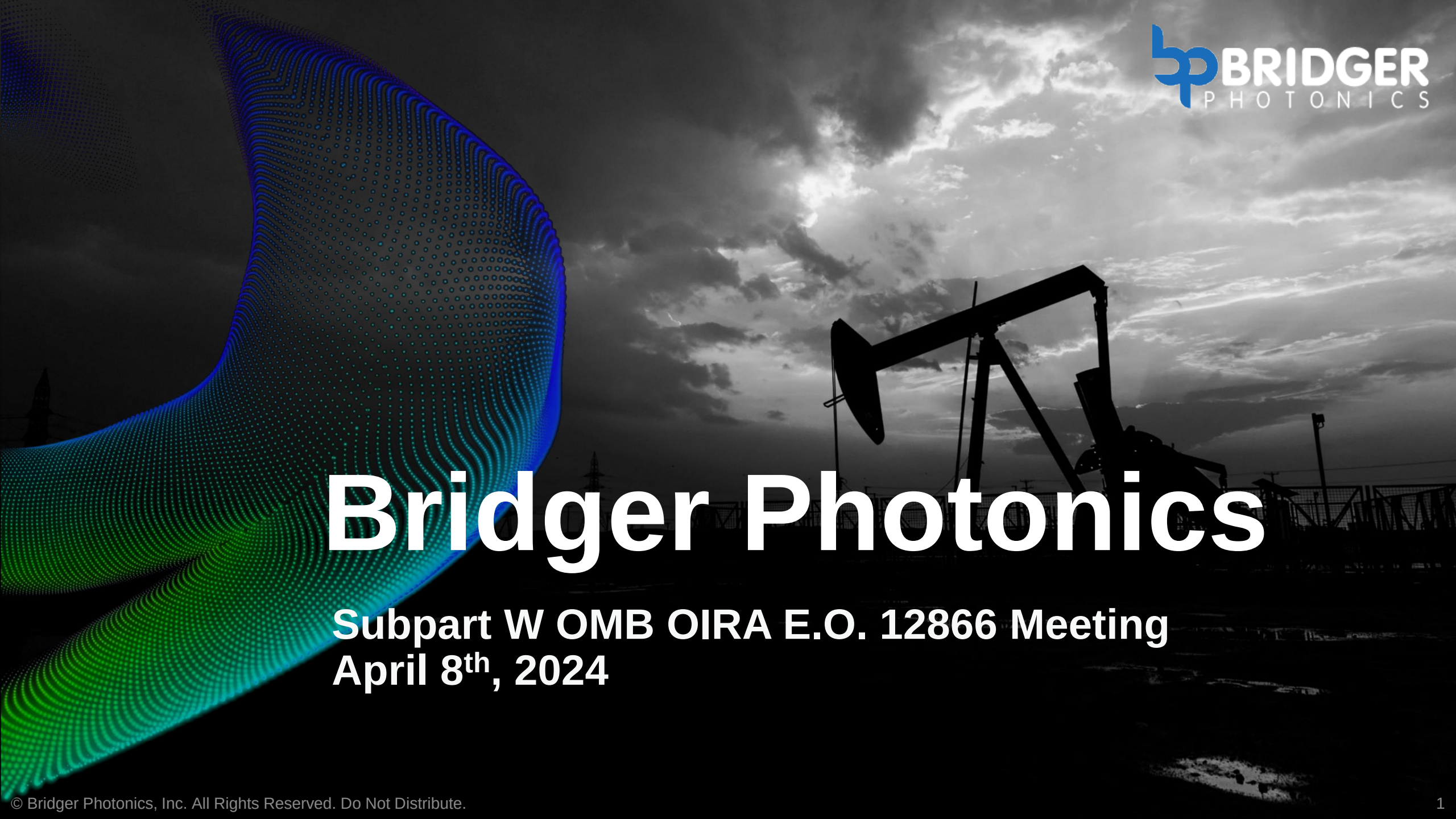
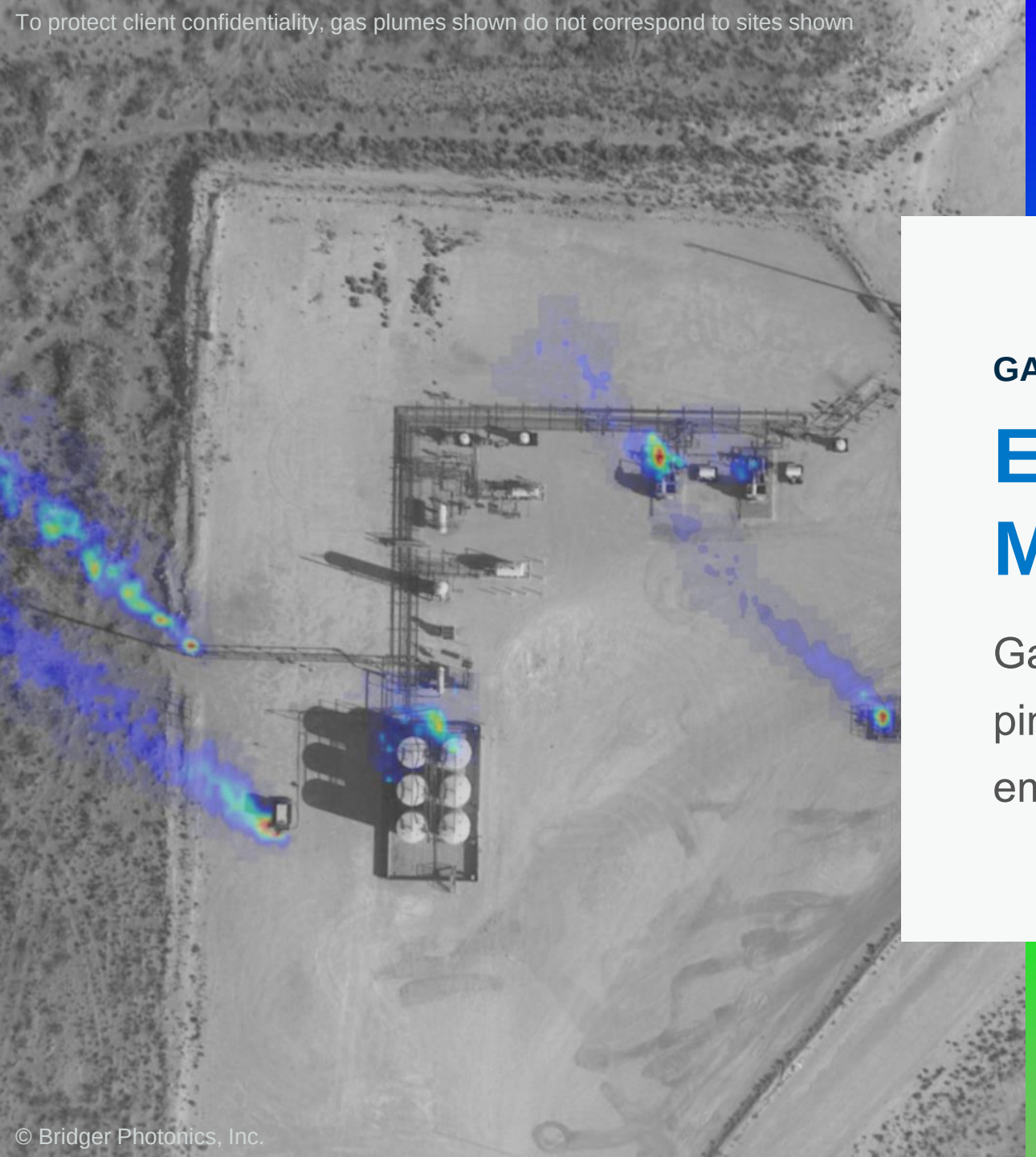


Bridger Photonics

Subpart W OMB OIRA E.O. 12866 Meeting
April 8th, 2024

To protect client confidentiality, gas plumes shown do not correspond to sites shown



BRIDGER PHOTONICS

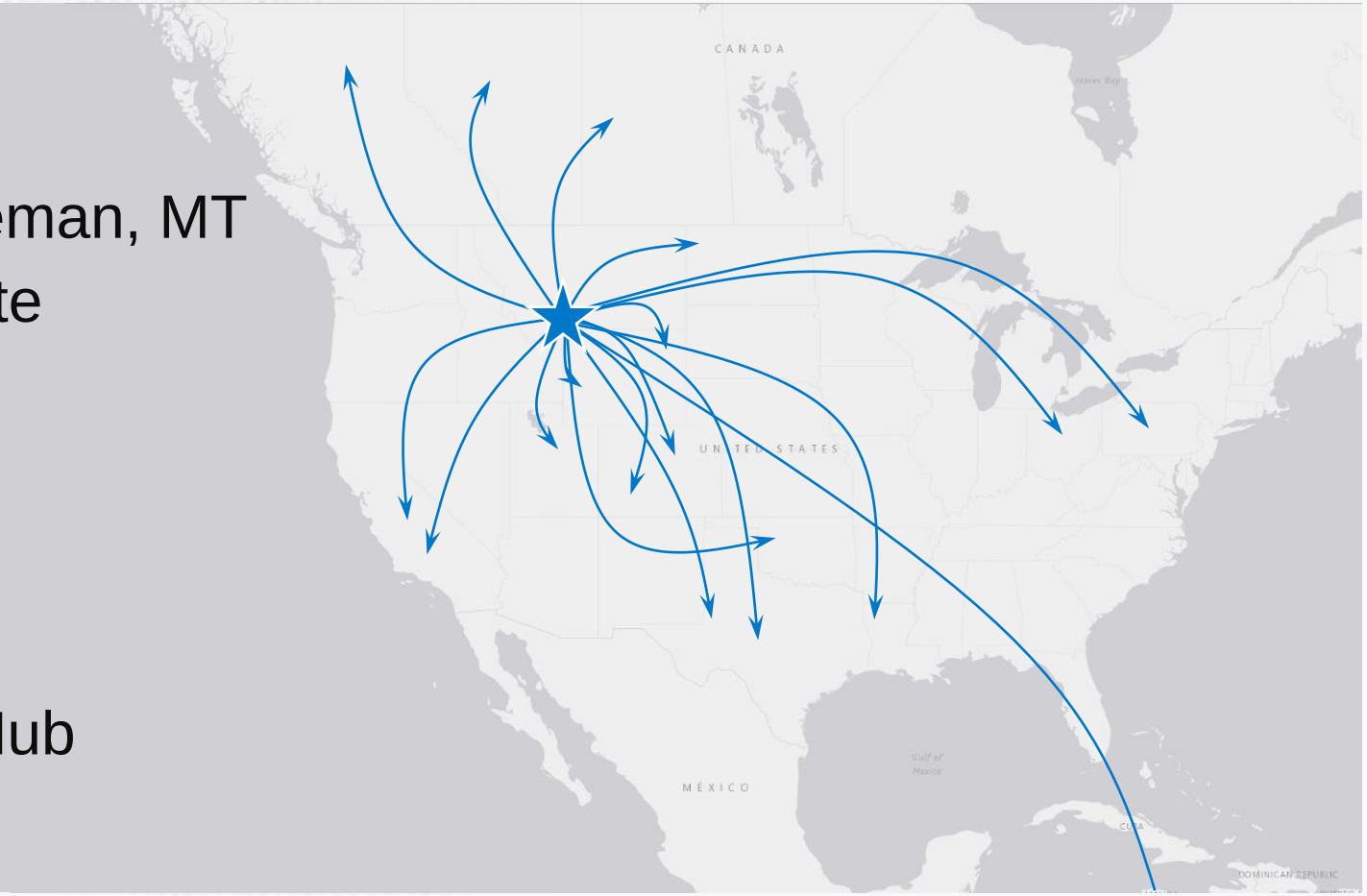
GAS MAPPING LiDAR™

Emissions Reduction Made Simple.

Gas Mapping LiDAR™ sensitively images, pinpoints, and quantifies your methane emissions from the air

Bridger Photonics - Advanced Methane Detection

- **US Business**
  - Owned and operated – Bozeman, MT
  - Sensors manufactured on-site
  - International reach
- **Federal Investment**
  - US DOE ARPA-E graduate
  - US EDC Headwaters Tech Hub
    - Founding member



What's at Stake

Bridger's Yearly Operations

- >100,000 site scans
- >100,000 pipeline miles
- 8 of top 10 Permian Basin gas producers

Bridger and the other thriving advanced methane detection companies can accelerate emissions reductions if efforts are not hindered by regulatory disincentives.

Contradictions to the Principles of Regulations in Subpart W Revisions

- Does not meet the congressional directive for reporters to be able to accurately demonstrate emissions with empirical data
- Disincentivizes leak detection and emissions accounting innovation, disrupting the economics of voluntary emissions reduction programs
- Is administratively onerous

Top Concerns

1

The proposed other large release event reporting threatens voluntary emission reduction programs

2

It’s not clear if advanced technology will be broadly allowed for developing leaker emission factors

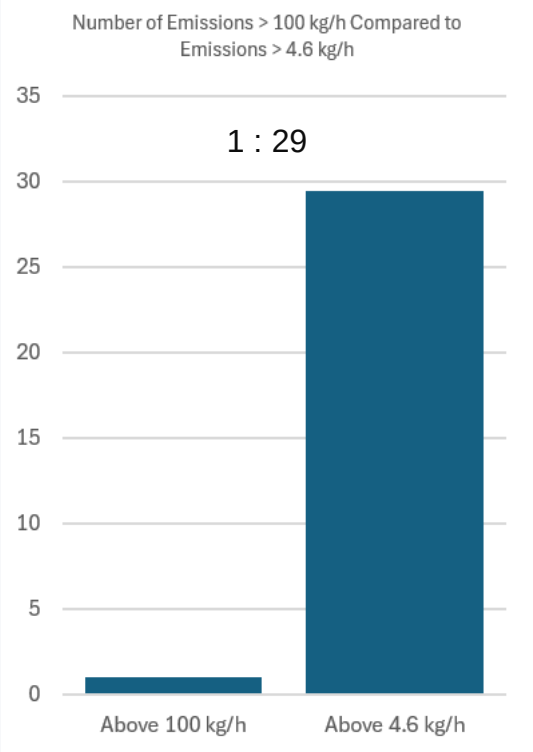
3

The proposal is does now allow proven, state-of-the-art approaches for Subpart W reporters to demonstrate methane emissions

Concern - Other Large Release Event Reporting

250 mt CO_2e Threshold Pitfalls

- Finding and having to investigate/report lower emission-rate events is driving operators away from sensitive emissions monitoring.
- Removing this disincentive will enable us to keep innovating the best informatics for emissions reductions.
- It is not demonstrated that individually considering low emission rate events for other large release event reporting will lead to accuracy.



- 4.6 kg/h methane emission over 90 days = 250 mt CO_2e
- This size of emission detected during quarterly scans would require consideration for other large release event reporting

Solution - Other Large Release Event Reporting

Remove the 250 mt CO_2e threshold for other large release events (retain the 100 kg/h threshold)

Concern - Leaker Emission Factors

The Subpart W proposal may inhibit using advanced technology to develop leaker emission factors

Disincentives for Technology Innovation

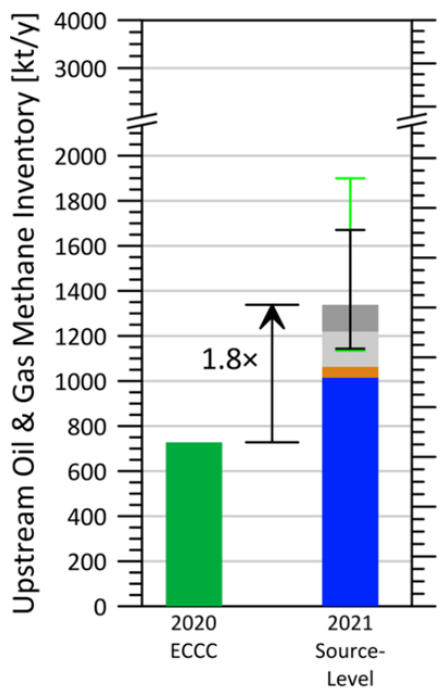
- OGI can be used for developing leaker emission factors at any site.
- Advanced tech must also be broadly allowed to develop leaker emissions factors to avoid disincentivizing its use.
- Advanced tech provides important advantages because it can be used to directly measure emissions where existing subpart W methods are impractical
- There is precedent in the 40 CFR 60.5398b(b) pathway for using advanced tech to identify emitting components

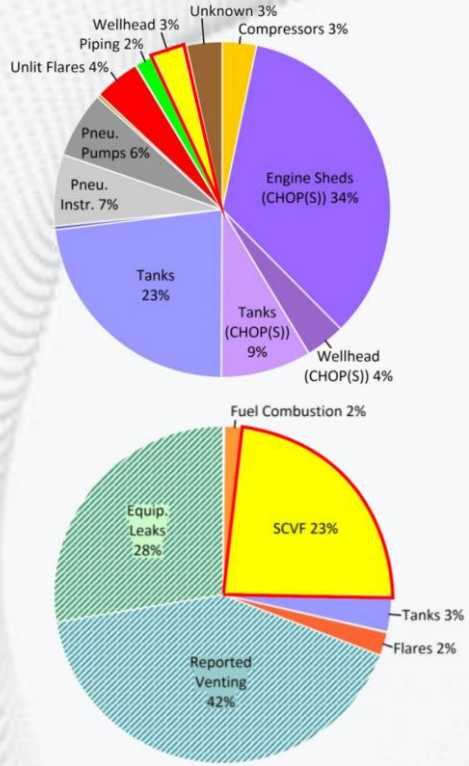
Solution - Leaker Emission Factors

Allow advanced technology to be broadly used to develop leaker emission factors

Concern – Inadequate Technology Readiness Determination

The Subpart W proposal neglects scientific information on the best methods to demonstrate methane emissions





Comparing emissions primarily from engineering calculations versus comprehensive direct measurement.

Conrad, B. M.; Tyner, D. R.; Li, H. Z.; Xie, D.; Johnson, M. R. *Commun Earth Environ* **2023**, *4* (1), 416. Conrad, B. M.; Tyner, D. R.; Johnson, M. R. *Environ. Sci. Technol.* **2023**, acs.est.3c07722.

State-of-the-Art Methane Reporting Examples

- Canada National Inventory[1]
- Colorado State Inventory
- DOE IM4 Projects

Subpart W Proposal is Misaligned with Other Reporting Programs

- The Veritas Protocol
- DOE MMRV
- OGMP 2.0
- Colorado's GHG Intensity Verification Rule
- Canada's National Inventory Efforts

1. Johnson, M. R.; Conrad, B. M.; Tyner, D. R. *Commun Earth Environ* **2023**, 4 (1), 139; Conrad, B. M.; Tyner, D. R.; Li, H. Z.; Xie, D.; Johnson, M. R. A. *Commun Earth Environ* **2023**, 4 (1), 416.; Conrad, B. M.; Tyner, D. R.; Johnson, M. R. *Environ Sci Technol.* **2023**, acs.est.3c07722. Johnson, M. R.; Tyner, D. R.; Conrad, B. M. *Environ. Sci. Technol.* **2023**, *57* (6), 2484–2494.

Solution - Inadequate Technology Readiness Determination

Implement an approval pathway for state-of-the-art methods to demonstrate methane emissions

Recommendations

1*

Remove the 250 mt CO_2e threshold for other large release events (retain the 100 kg/h threshold)

*This recommendation directly aligns with the Science Advisory Board recommendations for the EPA

2

Allow advanced technology to be broadly used to develop leaker emission factors

3

Implement an approval pathway for state-of-the-art methods to demonstrate methane emissions

If the final Subpart W rule penalizes collection of comprehensive emissions data or fails to leverage technology innovation for detecting and benchmarking emissions, the true potential for emissions reductions will not be achieved and existing voluntary industry programs are threatened.