



# The Measurement Economy

California Bioresources Alliance  
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**CANARY**

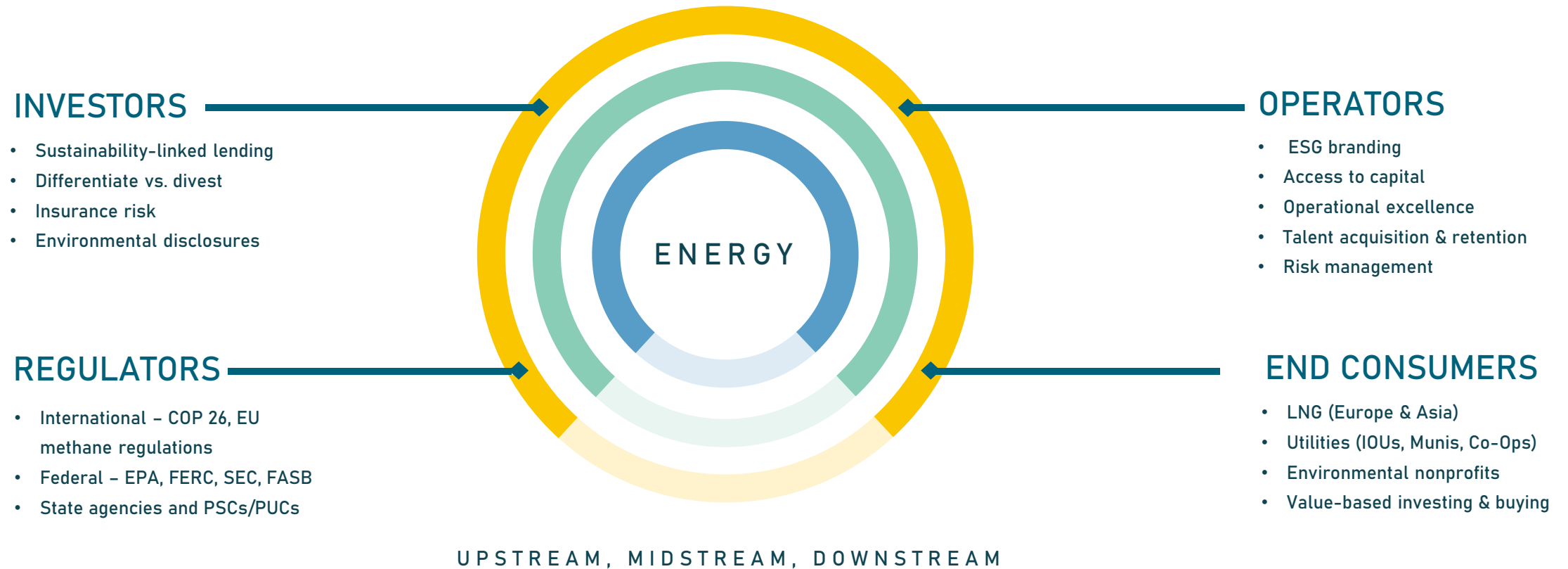


DECARBONIZATION BEGINS WITH ACCURATE DATA

You can't get to net-zero using estimates. Project Canary delivers independent, verified environmental performance data to measure and certify the "E" in ESG.

# DECARBONIZATION

# Market Demand to Disclose and Prove Emissions Reductions



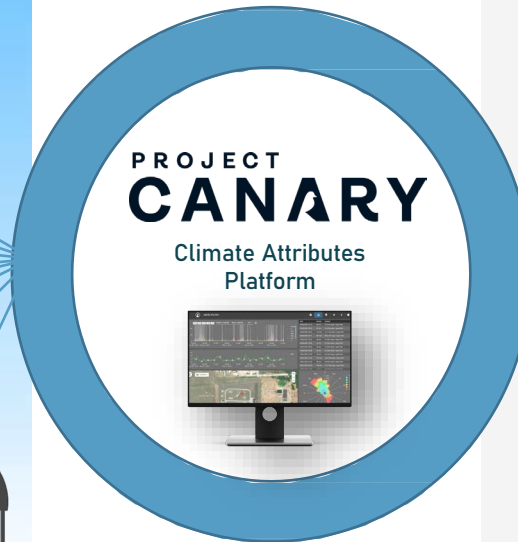
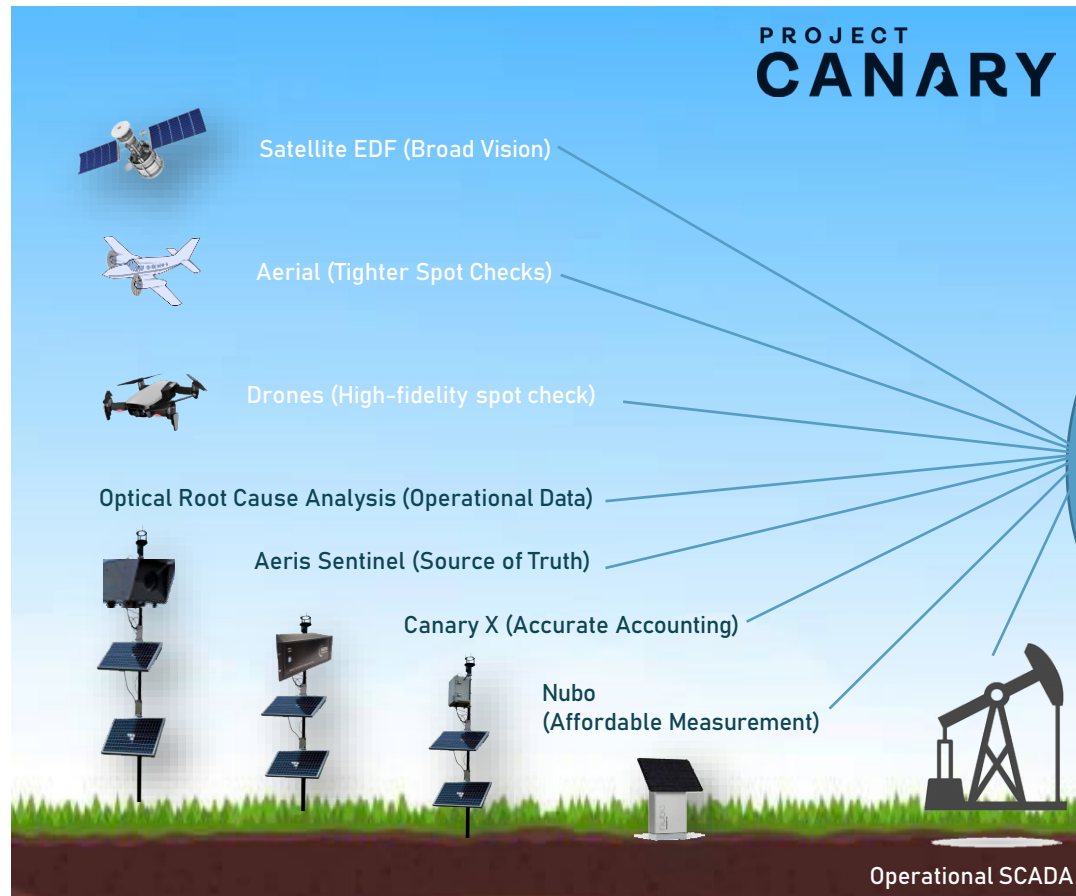
# Company Overview



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- 1 Project Canary (certified B-corp.) is a SaaS-based data analytics company focused on providing accurate verified climate insights through the energy supply chain
- 2 We are the leaders in facility-level environmental assessments and advanced monitoring technology
- 3 Our platform is open to and integrates all types of emission monitoring technologies to help operators achieve the highest degree of emissions accuracy
- 4 Cloud-based dashboard with science-based data analytics gives operators the insights and independent verification needed to measure, reduce and report emissions
- 5 55+ customers across the U.S., Canada, and the UK in the upstream, midstream and CCUS markets. We certify 11+ bcf/d with 1,800 devices deployed and 10,000+ certifications

# Verified Climate Attributes Informed by the 'Digital Canopy'



- 1 Most Transparent Environmental Portal (controlled by company)
- 2 Regulatory Reporting and Risk Management
- 3 Operational Control Center
- 4 Differentiated Gas (RSG), Net Zero, and Real Zero Commodity Transactions

# The Current EPA Reported Average of 0.454% Significantly Underestimates the Real Methane Leak Rate Across the U.S.

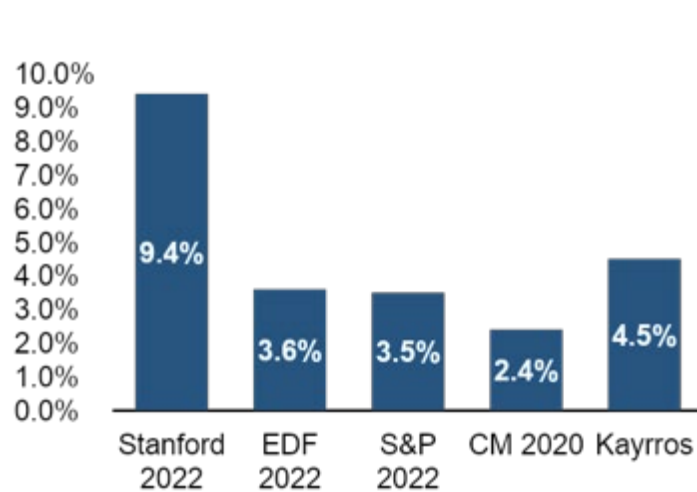
More likely measured leak rate for typical gas

4.8%

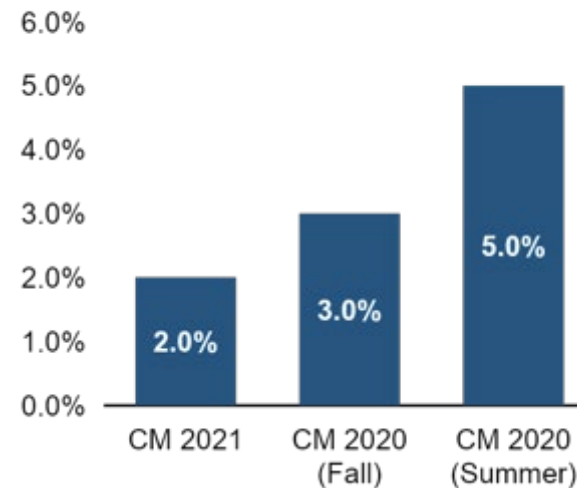
Certified low methane gas with continuous monitoring

0.2%

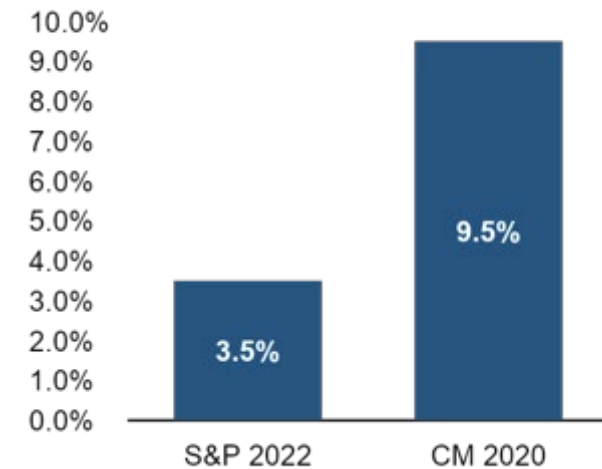
**Permian - 4.7%**



**San Joaquin – 3.3%**



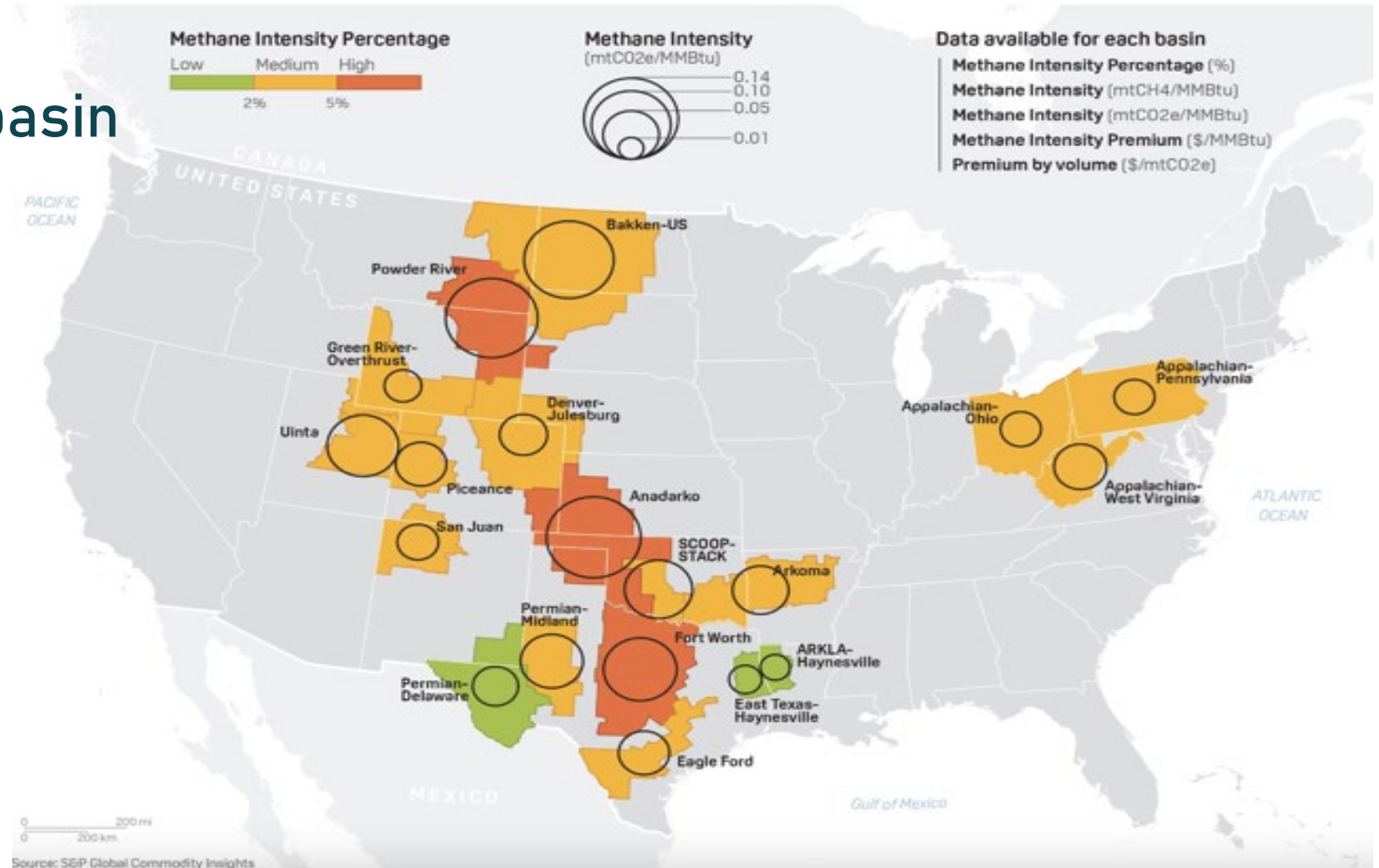
**Utica – 6.5%**





# US Methane Intensity Percentage (MIPs) by basin

- ✓ Most methane leaks are intermittent
- ✓ The biggest emissions reduction impact starts with gas production
- ✓ The technology now exists to measure and manage methane emissions across the full supply chain



# Direct Measurement Of Methane Will Improve Markedly with Finalization Of These Rulemakings

## Inflation Reduction Act

- Direct measurement technology is consistent with and furthers the aims of:
  - Sec. 60113: Methane fee and reporting requirements based on “empirical” data
  - Sec. 50263: Royalties

## BLM Waste Prevention Rule

- Requiring the use of direct measurement technology would enable accurate accounting under new royalty provisions in the Inflation Reduction Act (by determining avoidably and unavoidably lost gas) and strengthen compliance with Mineral Leasing Act waste prevention requirements



## EPA Methane Rule

- Use of direct measurement technology would enhance accuracy of emissions data reported to EPA

## SEC Climate Disclosure Rule

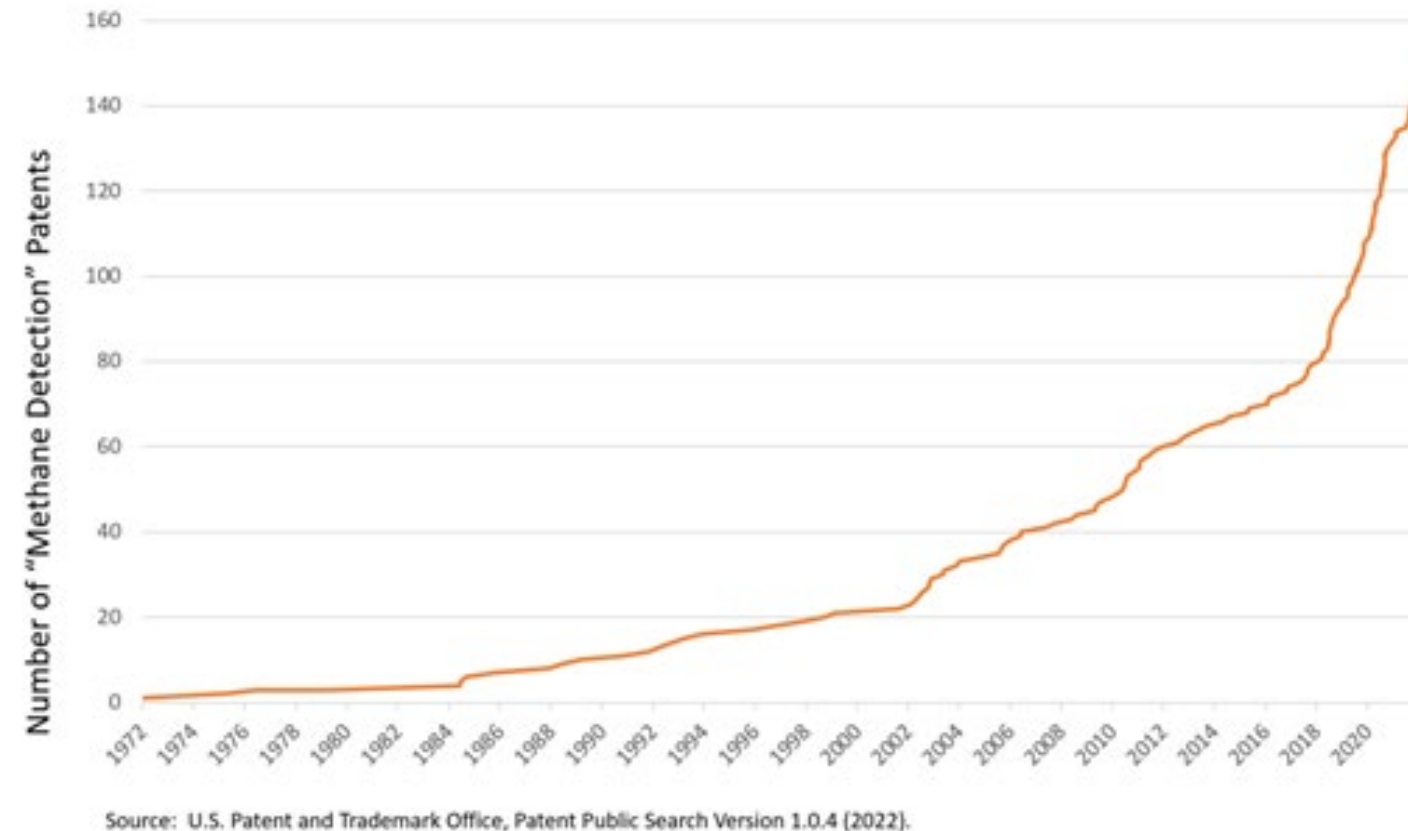
- Use of direct measurement technology would produce consistent, comparable, and reliable GHG emissions disclosures for investors

## U.S. Methane Emissions Reduction Action Plan – Global Methane Pledge

- Direct measurement technology facilitates more accurate global tracking of methane emissions



# Direct Measurement Technology Advancement



- Recent technological advancements have rapidly expanded the capabilities and availability of site-level services.
- The number of "methane detection" patents have doubled since BLM proposed the Waste Prevention Rule in 2016 and increased fiftyfold since NTL-4A was published in 1979.

*"The heavy reliance on emission factors for taking inventory of methane leaks was a necessary concession at a time when the deployment of large-scale measurement capabilities within oil and gas basins was simply unrealistic. . . . Recent technological advances, however, have made quantification a viable option. In recent years, scientists have been able to use newly sophisticated methane detection and quantification technologies to actually measure methane emissions from oil and gas operations."*

-The U.S. House Committee on Science, Space, and Technology

House of Representatives Committee on Science, Space, & Technology, Seeing CH<sub>4</sub> Clearly: Science-Based Approaches to Methane Monitoring in the Oil and Gas Sector, at 13-14 (June 2022).

# Verified Climate Attributes and Insights Platform

## Digital Emissions Canopy

(Satellite, Drone, Ground-based  
Sensors improve each other)



- ✓ Expanded technology-agnostic platform
- ✓ Combined with robust independent environmental risk assessments
- ✓ Delivers verified outcomes across company's portfolio

## Attributes from AI / ML Climate Analytics Engine

(Improve through measurement)



- ✓ Aggregates and analyzes emissions data from a variety of technologies
- ✓ Delivers detailed facility-level emissions analytics and strategic operational insights
- ✓ All within one platform – Canary's dashboard

## Digital MRV – Validation, Reporting & Risk Mitigation

(Risk Management and Stakeholder Engagement)



- ✓ Reporting & compliance (EPA, SEC, OGMP 2.0)
- ✓ Insights and 'smart alerts' via APIs into the environmental profile
- ✓ Risk management and strategic decision-making

# Project Canary's 'Digital Canopy'

## Environmental Assessments, Methane Monitoring & Quantification

Enable a market-leading, accurate, and transparent digital canopy approach that operators can leverage as an affirmative representation of all localized assets.

- Continuously evolve solutions to be above and beyond regulatory requirements
- Incorporation of leading-edge enhanced monitoring solutions:
  - Bottom-Up: Good, better, best fidelity ground-based sensors
  - Top-Down: Incorporation of drone, aerial and satellite solutions; ground-based sensors can inform and improve periodic aerial surveys and low-resolution satellite imagery
- Expertise in emissions data & analytics can inform the operator, the market and other financially interested parties about the environmental footprint of assets
- Each operator has a unique portfolio of assets. Continuous monitoring not affordable/applicable for all assets; alternative solutions available through the Canary platform

***Sensor agnostic approach allows a customizable monitoring solution that is financially pragmatic***

## Project Canary's Portfolio of Solutions

### Environmental Assessment

(TrustWell by Project Canary)

- ✓ Robust review of environmental risks and risk-mitigation efforts



### Ground-based, Aerial and Satellite Monitoring

- ✓ Combination of continuous ground-based sensors and aerial footage to achieve 100% monitoring



### Quantification, Actionable Insights & Data Analytics

- ✓ ML-based regression and Gaussian plume models used to localize and quantify total site emissions.





# A Traceable Value Chain. Site-Level Quantification of Emissions

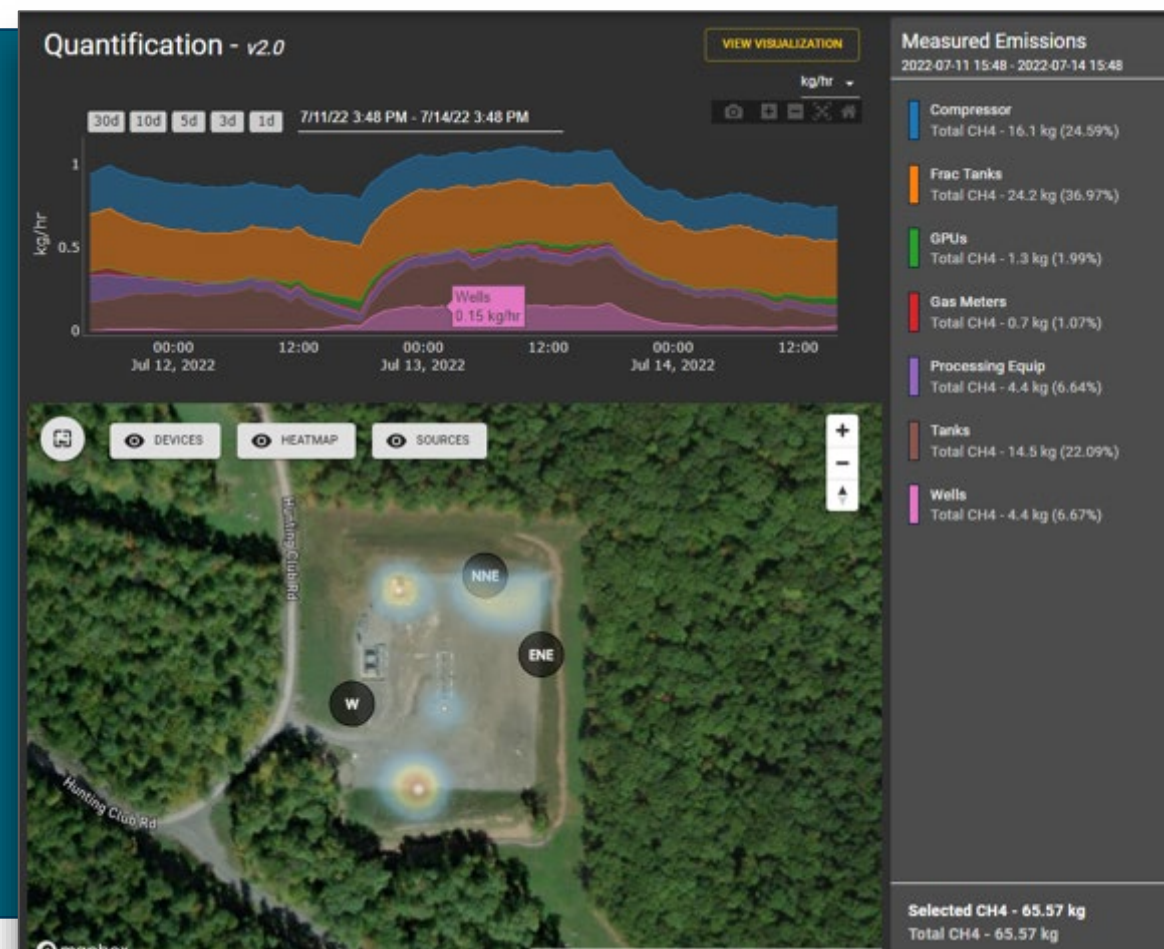
Project Canary Certifies Actual Performance Data. Others Certify Estimates

- Accurate Emissions Profile

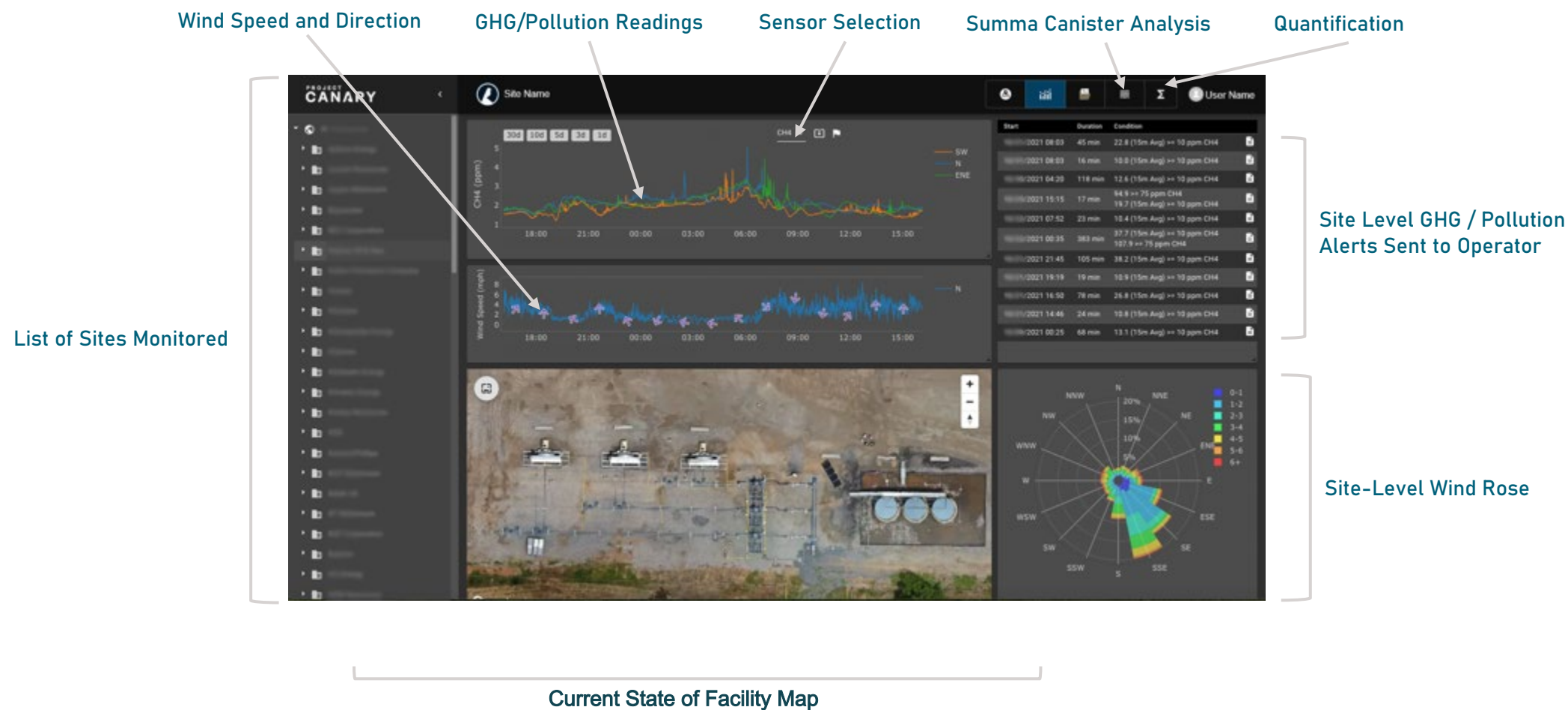
Machine-Learning-based regression and Gaussian plume models are used to localize emissions data at the equipment group level and serve up total site emission data. Tested within 3% of METEC controlled release data.

- Actionable Insights to Reduce Risk

Trained models predict emissions and trigger smart alerts when actuals deviate from the forecast.



# Sensor Data is Displayed in Real-Time With Web-Based Dashboard and Offered as an API for Operators



# Climate Action With Facility-Level Continuous Monitoring

Quantifiable methane data unlocks targeted intervention





# The Measurement Economy Has Arrived.

- ✓ Operational excellence and verified environmental attributes by relying on **measured data**, not estimates
- ✓ Delivering independent, verified environmental performance data to measure the “E” in ESG and **show proof of performance**.
- ✓ Updated technologies for actionable insights and understanding of **total site emissions** so that operators can **identify and eliminate leaks** and **decrease operational risks**.
- ✓ **Cut It. Count It. Prove It.**







# THANK YOU

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Project Canary - as a certified public benefit corporation - is working to drive a transparent approach to RSG assessments that enables public proof of performance and progress over time.