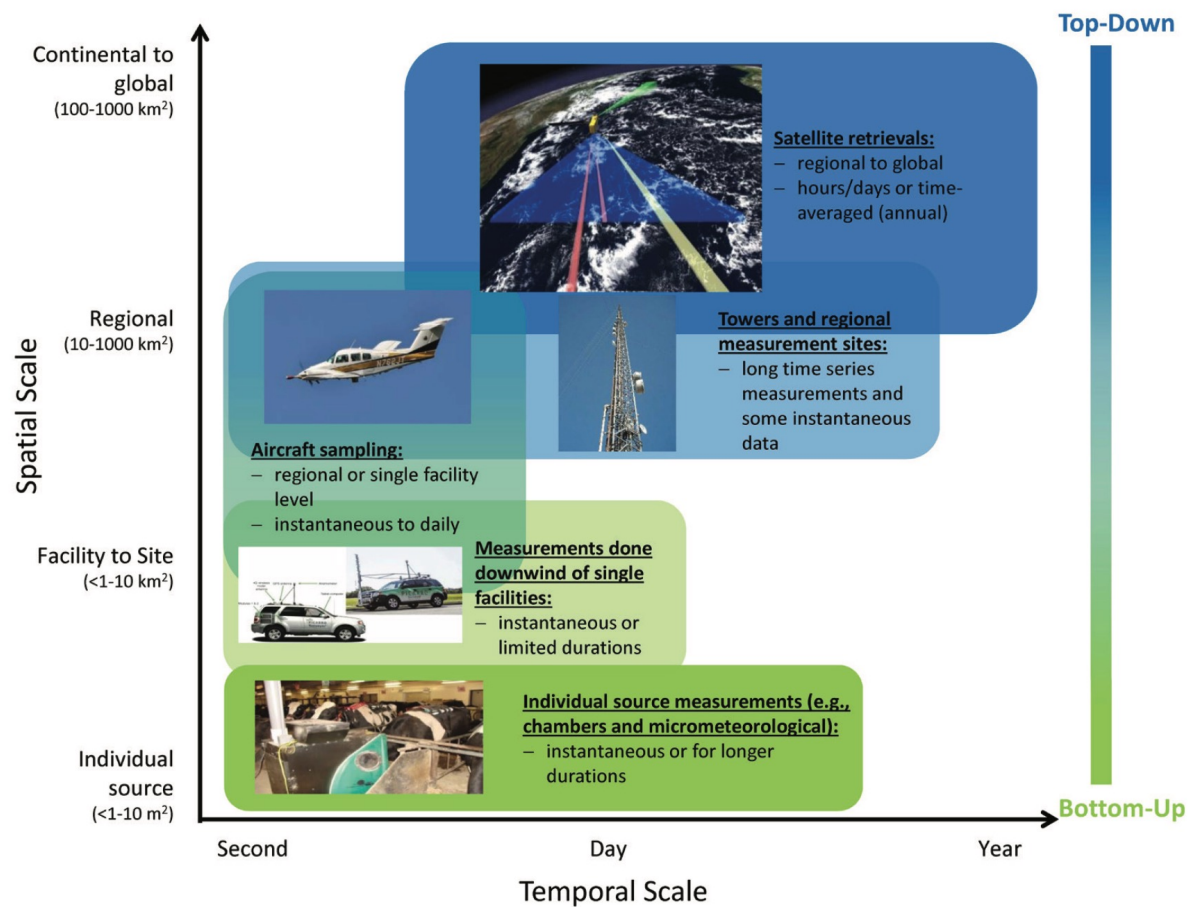


Methane Emissions Monitoring

Using satellites and aircraft to detect and quantify methane emissions from various facilities



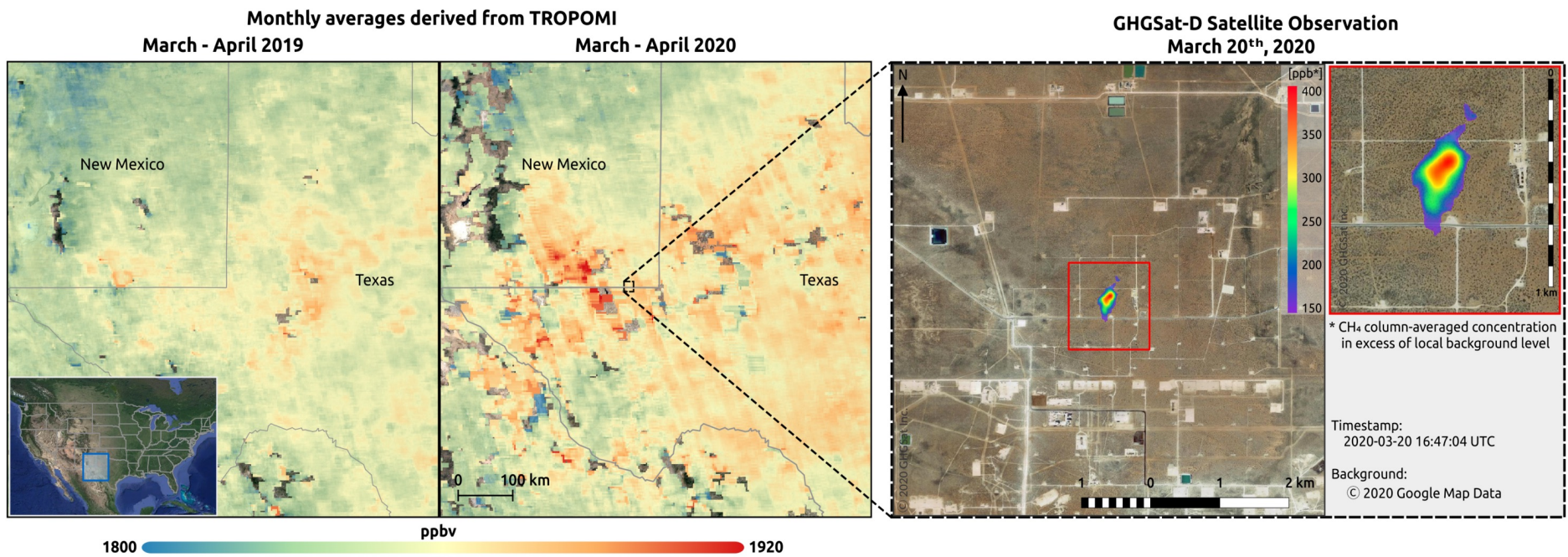


Examples of methane measurement platforms operating across a variety of spatial and temporal scales
 (Source: National Academies; *Improving Characterization of Anthropogenic Methane Emissions in the United States*; 2018)

Satellite Methane Observations

Area Mapping: Quantifying emissions at regional (and national) scales.

Point Source Mapping: Detection and quantification of large emission sources at fine spatial resolution



Above example: Using ESA Sentinel-5P/TROPOMI to “tip and cue” GHGSat satellites

GHGSat Constellation

1st high-resolution emissions monitoring constellation



In Orbit Today

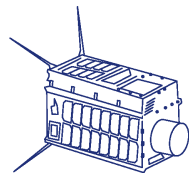
GHGSat pioneered the technology that delivers high-resolution data on greenhouse gas emissions from space.

2016
CLAIRE

Technology demonstrator proving GHG can be detected and measured accurately from space.

2020
IRIS

First commercial satellite delivering 10 x better performance.



2021
HUGO

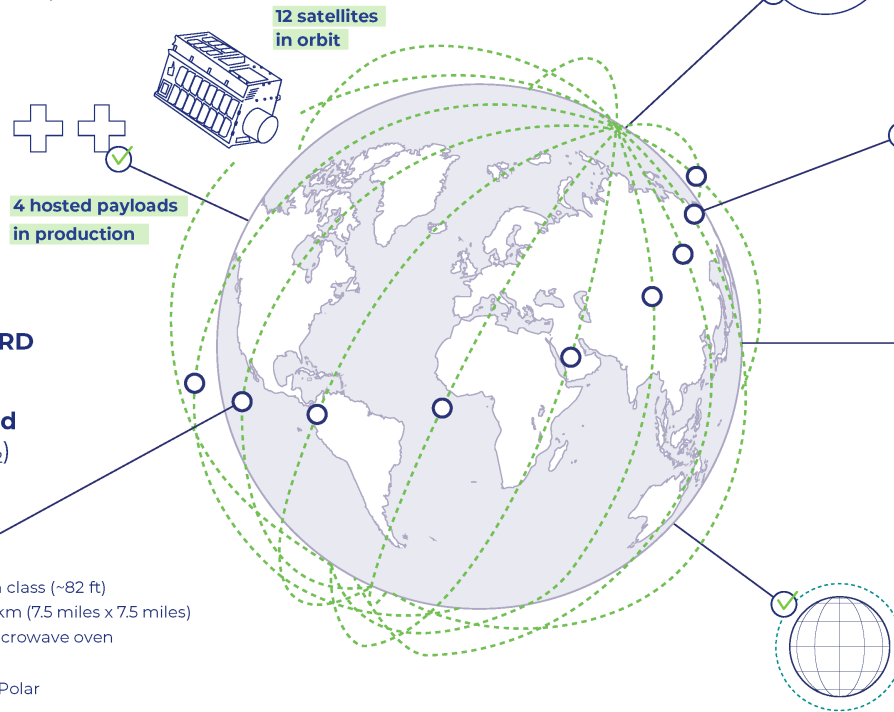
2022
LUCA, PENNY and DIAKO

2023
MEY-LIN, GASPARD and OCÉANE

ELLIOT, JUBA and VANGUARD (CO₂)

Coverage

Spatial resolution: ~25 m class (~82 ft)
Field of view: 12 km x 12 km (7.5 miles x 7.5 miles)
Size: Comparable to a microwave oven
Weight: 15 kg (33 lbs)
Orbit: Sun-Synchronous Polar



Instruments

GHGSat commercial satellites are designed and dedicated for methane and carbon dioxide observations. Each satellite is equipped with a wide-angle imaging spectrometer for measuring the vertical column density of greenhouse gases.

Capability

With proprietary patented sensor technology, GHGSat satellites are capable of measuring methane emissions from onshore and offshore platforms, attributing those large or small emissions directly to individual facilities, down to 100 kg/hr, worldwide.

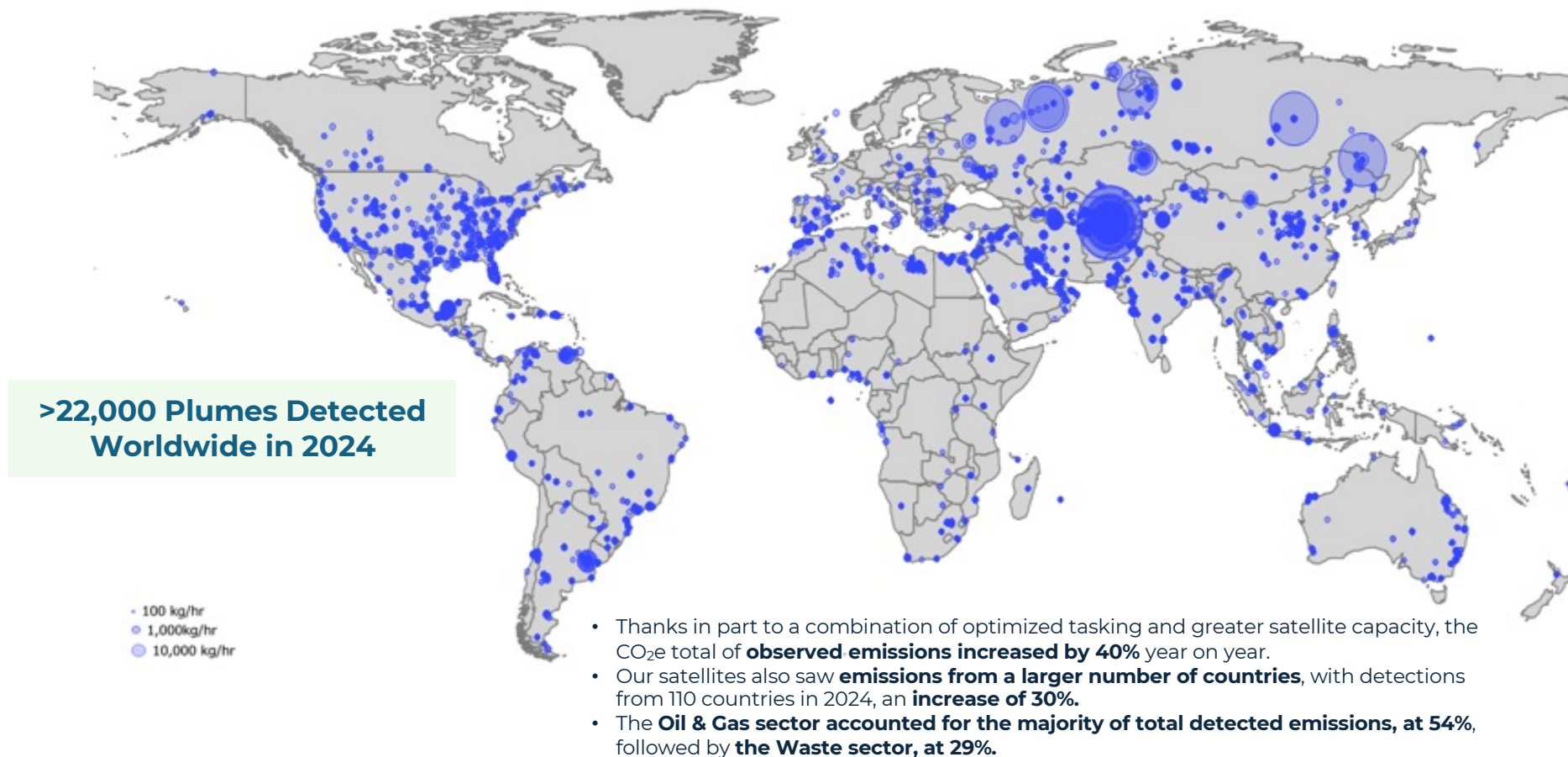
Emission Intelligence for Markets

Oil & Gas	Coal Mining	Waste Management
Environmental Services	Agriculture	Financial Services
Governments and Regulators		

Our Commitment

Bringing global transparency to greenhouse gas emissions, GHGSat is accelerating the decarbonization of our planet.

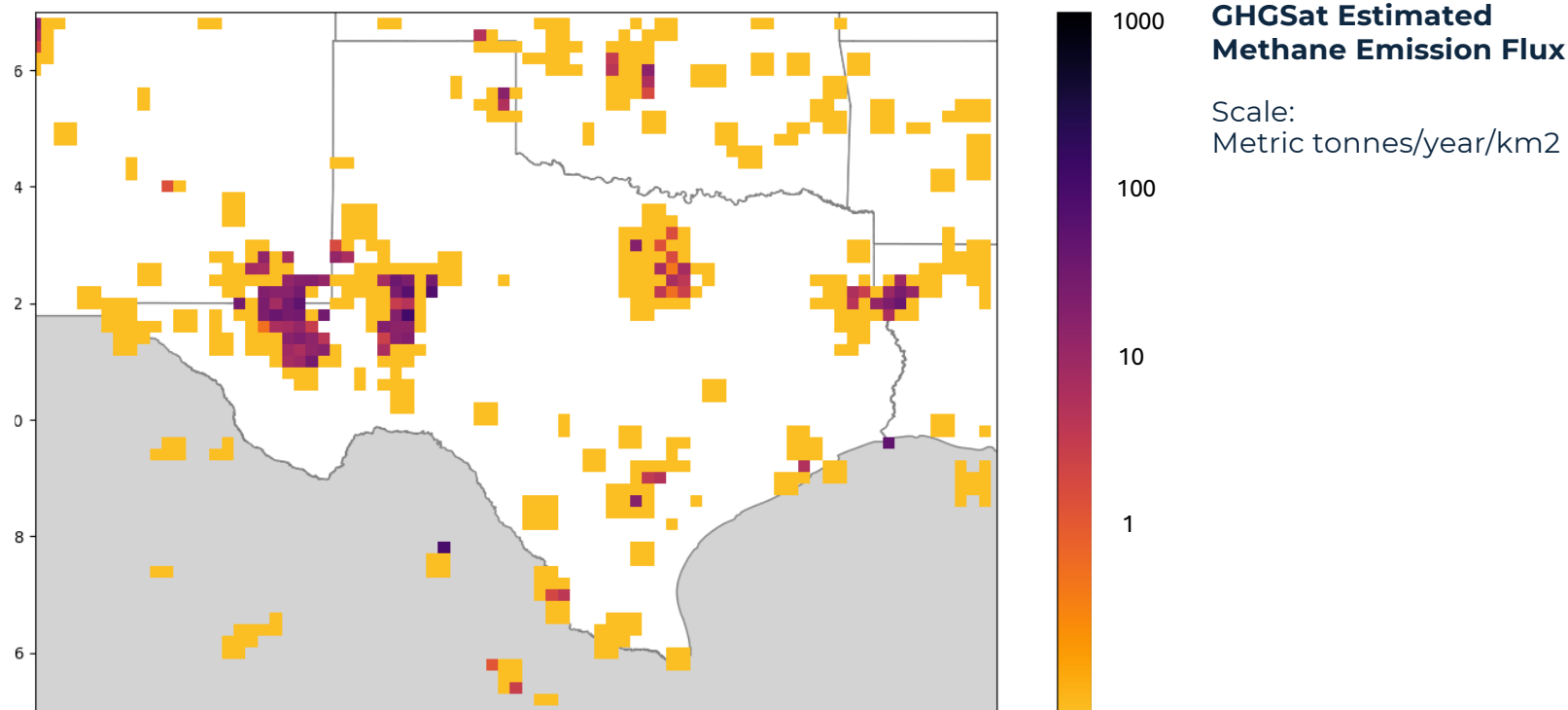
METHANE DETECTIONS FROM GHGSAT SATELLITES: 2024



Methane Emission Flux Estimate: Texas, 2023

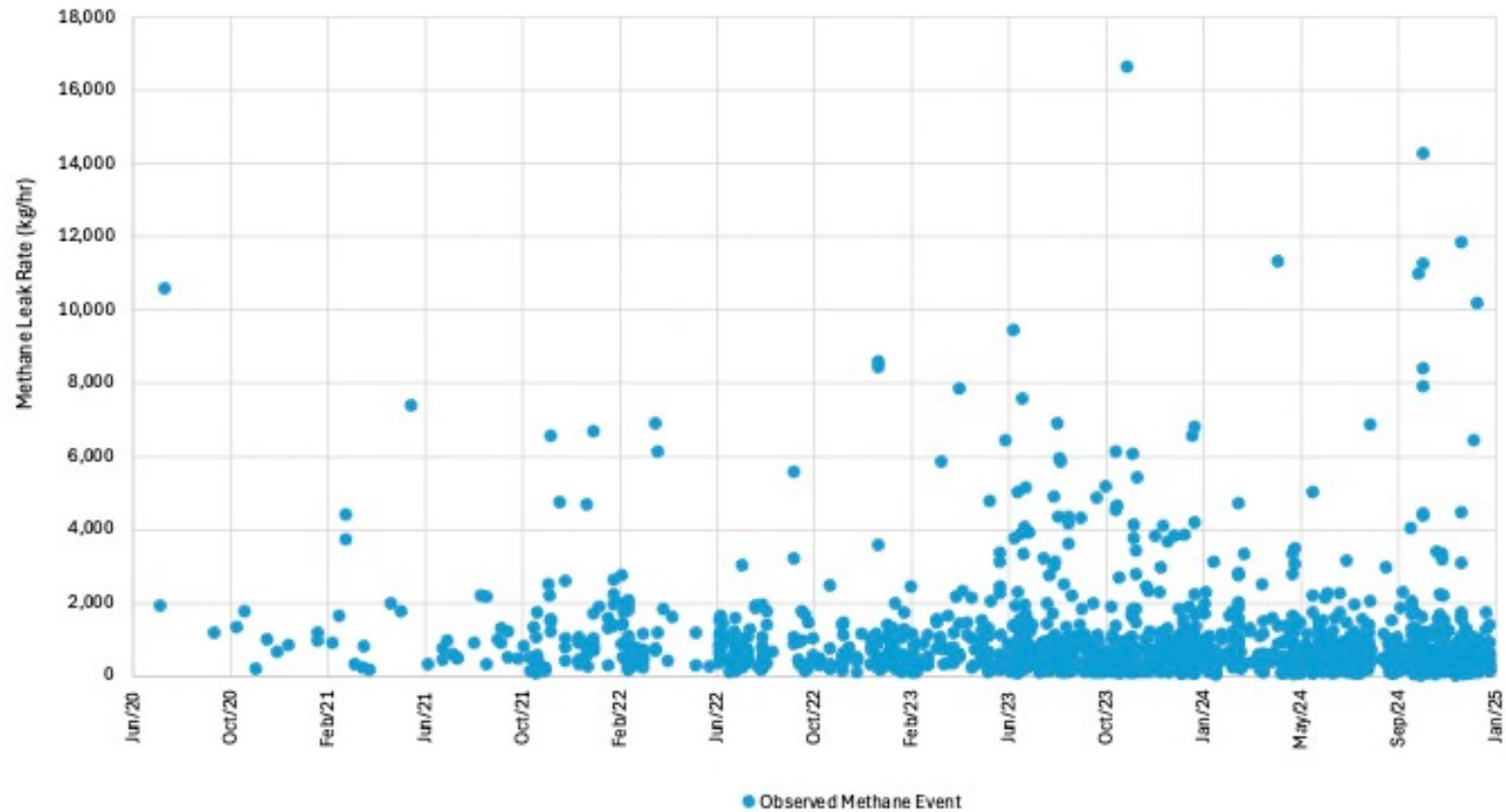
Methane Emissions Estimate from Satellite for Texas for 2023

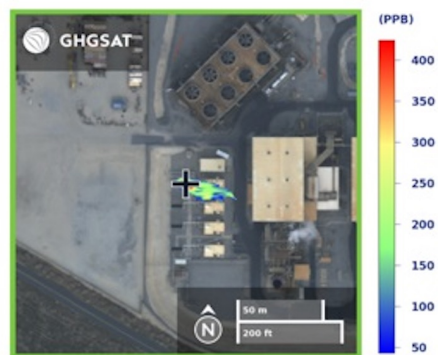
- The figure below is an estimate from only the Oil & Gas sector.
- This emission flux estimate averages both observations with and without plumes at a given location (i.e., not just a simple sum or average of plume detections)
- Total annual emissions flux for Texas for 2023: approx. 0.5 Mt



Leak Mitigation Opportunities in Permian Basin (Texas area)

Methane Emission Rates Observed in this region from 2020-2025; in kg/hr





Product

Column averaged CH₄ concentration in excess of local background

Observation ID

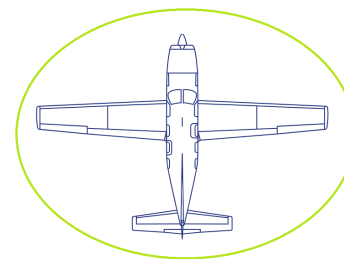
20241216T185402.782787Z-line321#frames_002543-003141

Sensor

GHGSat AV-Gen2

Background Source

Colour image from AV auxiliary camera



Aerial Observation: California, Dec 2024
Emission Rate: 35 kg/hr