GHGSAT™

DATA.SAT
CH_4 MEASUREMENT
Oil & Gas Infrastructure

PRODUCT:
CH_4 column-averaged concentration in excess of local background level.

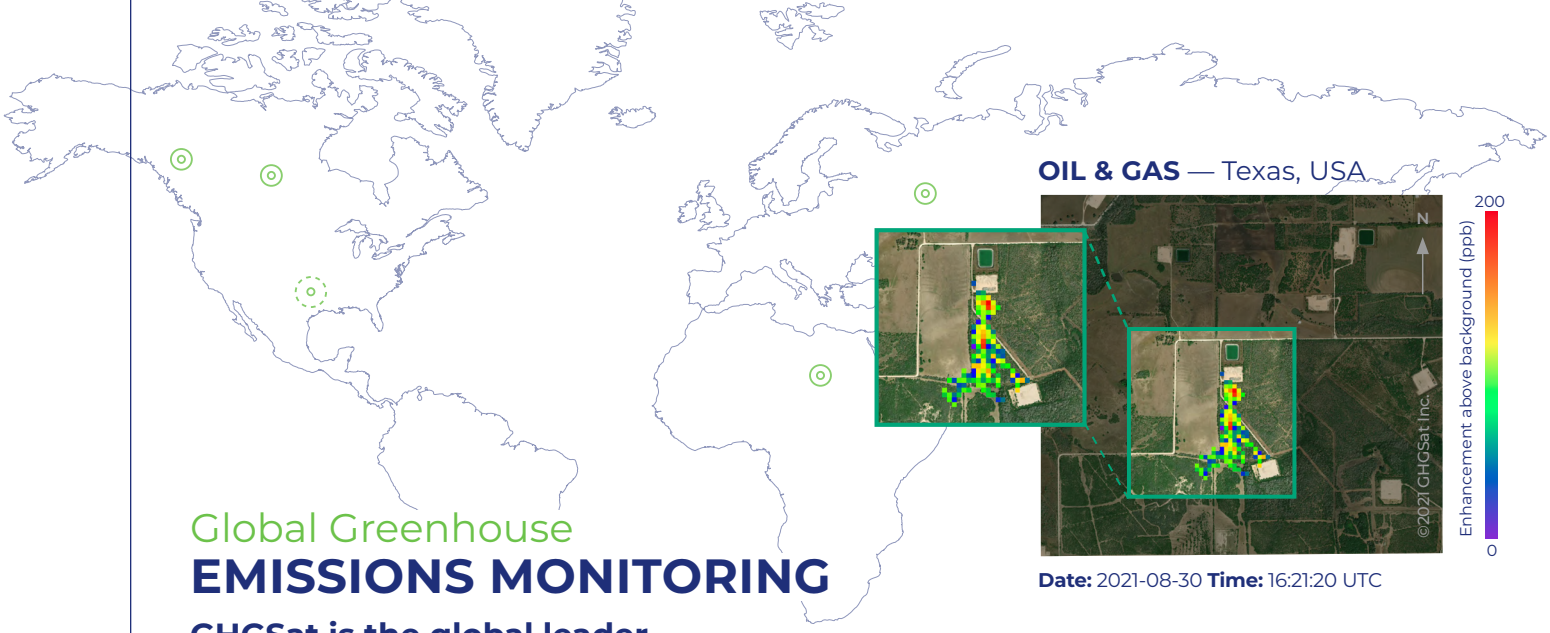
Timestamp:
2021-04-27 17:22:02 UTC
Background:
©2021 Google Map Data

GHGSAT AT A GLANCE

Founded	2011
Founder & CEO	Stephane Germain
Team	100+ employees
Status	Private
Investment	US $70M in raised capital to date
Headquarters	Montreal, Canada
Global Locations	Ottawa, Calgary, Houston and London
Website	ghgsat.com
Satellites	**GHGSat-D Claire**: Launched in 2016 **GHGSat-C1 Iris**: Launched in 2020 **GHGSat-C2 Hugo**: Launched in 2021 8 more by the end of 2023
Aircraft	Two AV sensors in operation
Sectors	✣ Oil & Gas ✣ Mining ✣ Power Generation ✣ Waste Management ✣ Agriculture ✣ Governments ✣ ESG for Financial Markets

GLOBAL EMISSIONS MONITORING

METHANE



OIL & GAS — Texas, USA

Date: 2021-08-30 **Time:** 16:21:20 UTC

Global Greenhouse
EMISSIONS MONITORING

GHGSat is the global leader in high-resolution greenhouse gas monitoring from space.

A Canadian company, GHGSat believes space provides the ideal vantage point to examine the impact of human activity on our planet and collect unique data to drive meaningful action.

The company's tiered system-of-systems, combines proprietary satellite and aircraft data, with world-class analytics to provide the best coverage of methane emissions, helping operators and governments deploy targeted reduction measures.

By detecting and identifying sources of emissions 24/7, GHGSat provides the data and intelligence that companies need to take action for a cleaner planet.

CHANGING THE WAY
we see greenhouse gas emissions

98.3

$MTCO_2e/yr$

methane detected in **Q3 2021**

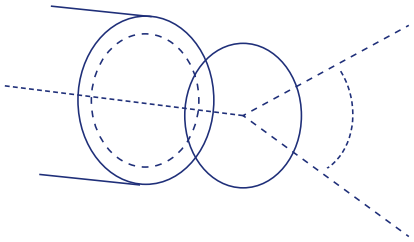
Equivalent to **21.4 MILLION CARS** driving for 1 year

or

Could power the equivalent of **17.8 MILLION HOMES** for 1 year

With proven and trusted technology, **GHGSat** makes a difference today for **a better future.**

PATENTED SENSOR TECHNOLOGY:
How it works



GHGSat developed its unique patented sensor technology based on a Wide-Angle Fabry Perot (WAF-P) interferometer, originally invented in 1899. When light passes through the atmosphere, some of it gets absorbed at particular wavelengths by gases.

Every gas has its own wavelength or signature. GHGSat's interferometer measures the absorption at frequencies unique to methane in high resolution from space and translates it to a concentration.

Detecting **emissions sources 100 x smaller** than some satellites.

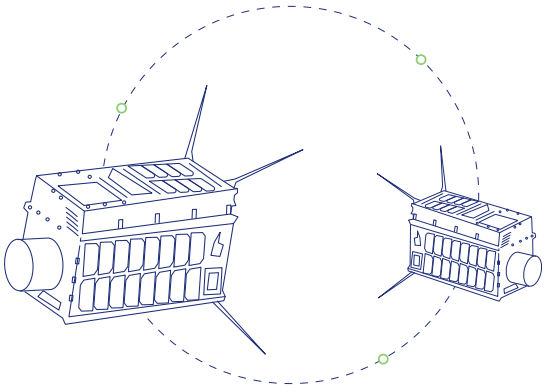
Attributing emissions sources with **100 x higher precision** than other satellites.

Combining both in **satellites 100 x smaller** than those in orbit.

A SATELLITE CONSTELLATION
In orbit now and growing

GHGSat has developed the only high-resolution greenhouse gas monitoring satellite constellation operational today. This system is the only one able to detect and measure methane emissions at the facility level.

The growing constellation delivers accurate, frequent and reliable data and year-round greenhouse gas emissions intelligence to customers worldwide.



- **Spatial resolution:** ~25 m class (~82ft)
- **Field of View:** 12km x 12km (7.5 miles x 7.5 miles)
- **Size:** Comparable to a microwave oven
- **Weight:** 15kg (33lbs)
- **Orbit:** Sun-Synchronous Polar
- **Altitude**: ~500 km (~310 mi)

GHGSat satellites are named after the children of team members:

CLAIRE
Launch 2016

GHGSat-D

Technology demonstrator satellite, Claire, proved that greenhouse gas can be detected and measured accurately from space.

IRIS
Launch 2020

GHGSat-C1

The first commercial satellite, Iris, provides performance 10x better with a detection threshold of 100kg/hr in moderate wind conditions.

HUGO
Launch 2021

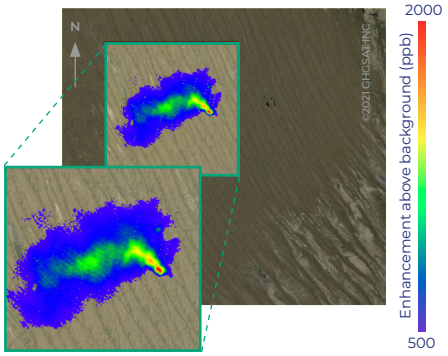
GHGSat-C2

Hugo is designed to deliver the same performance as Iris, increasing GHGSat's capacity to measure more sites, more frequently around the world.

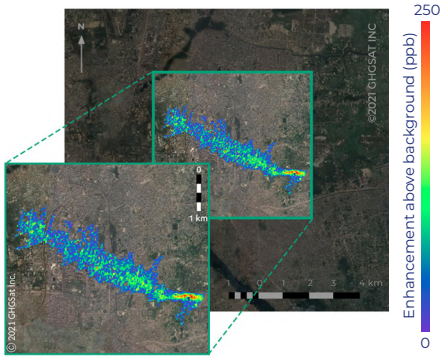
8 more high-resolution satellites to be added to the constellation by **2023**

DATA.SAT CH_4 MEASUREMENT

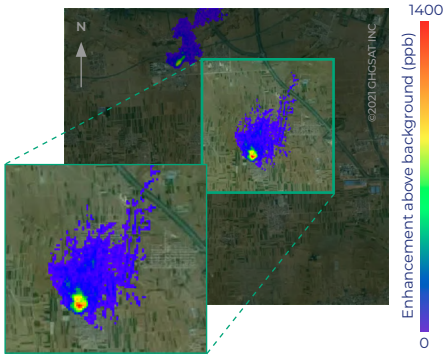
CH_4 column-averaged concentration in excess of local background level.



Oil & Gas Facilty
Turkmenistan, Central Asia
Date: 2021-08-23
Time: 06:26:54 UTC



Landfill
Bangladesh
Date: 2021-04-17
Time: 03:45:43 UTC



Underground Coal Mine
China
Date: 2021-10-13
Time: 03:14:56 UTC

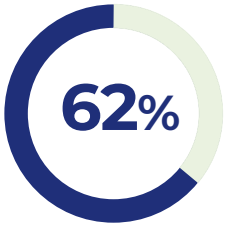
EMISSION ANALYTICS

GHGSat Emission Analytics combines our proprietary high-resolution data with third-party datasets to deliver insights beyond emission concentration rates, including hotspot detection and emission prediction.

THE **SMALL** ADD UP

Of the methane emissions detected in **Q2 2021**, 82% were too small to be detected by public satellites.

FREQUENT MEASUREMENTS IS CRUCIAL

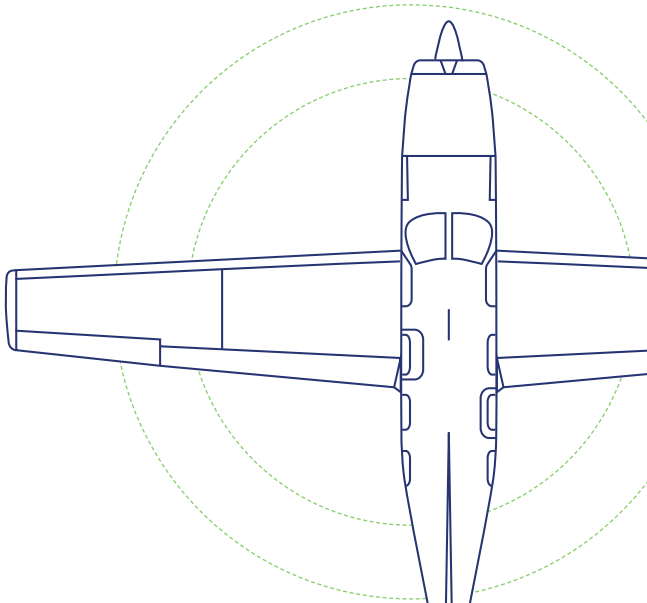


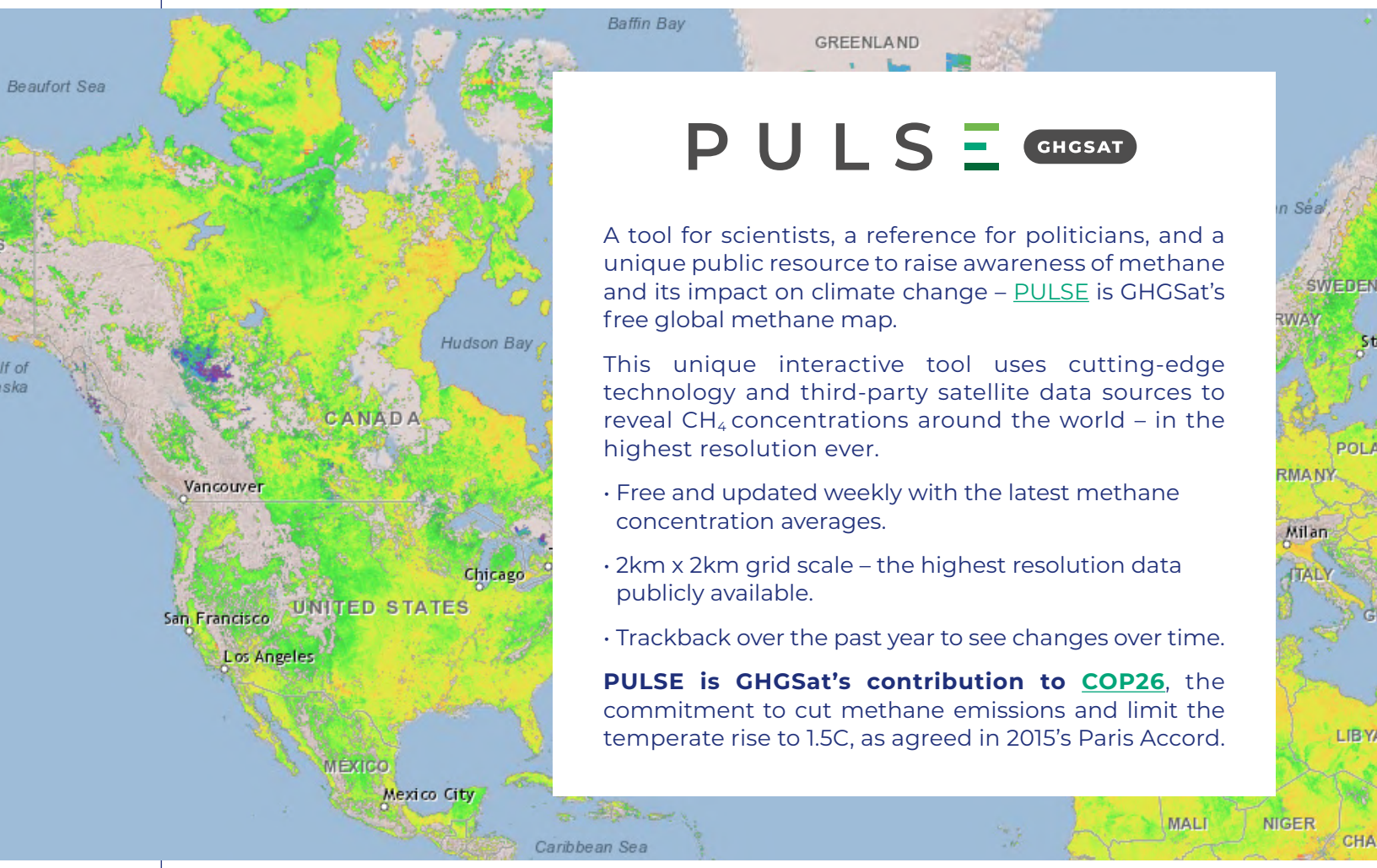
62% of facilities monitored in **Q3 2021** across the world had emissions on multiple days.

AERIAL EMISSIONS MONITORING

GHGSat's airborne sensor uses the same patented technology developed for its high-resolution satellites. The airborne sensor can operate at a variety of altitudes (up to 3,000m, 10 000ft), balancing spatial resolution with coverage needs to meet specific customer survey requirements.

The company is the only emissions monitoring firm to deploy airborne instruments, with matching satellite sensors in orbit, working together in a tiered system using aerial data (DATA.AIR) and orbital data (DATA.SAT) to provide the best possible coverage of emissions.





PULSE GHGSAT

A tool for scientists, a reference for politicians, and a unique public resource to raise awareness of methane and its impact on climate change – PULSE is GHGSat's free global methane map.

This unique interactive tool uses cutting-edge technology and third-party satellite data sources to reveal CH_4 concentrations around the world – in the highest resolution ever.

- Free and updated weekly with the latest methane concentration averages.
- 2km x 2km grid scale – the highest resolution data publicly available.
- Trackback over the past year to see changes over time.

PULSE is GHGSat's contribution to COP26, the commitment to cut methane emissions and limit the temperate rise to 1.5C, as agreed in 2015's Paris Accord.

FUNDING

To date, GHGSat has raised in capital over

US $70M

Investors include Investissement Quebec, SDTC, the Oil and Gas Climate Initiative, Schlumberger, Business Development Bank Canada, Space Angels, and Sustainable Development Technology Canada.
Learn more

1%

The company developed its capabilities with less than 1% of the investment of other systems.

SCIENTIFIC COLLABORATION

GHGSat works with the scientific community to advance the technology and analytics applications of satellite-based emissions monitoring, validating sensor capabilities and datasets. The company is committed to sharing 5% of its satellite data with the global scientific community for research projects.

Learn more

RESEARCH PROJECT

GHGSat is undertaking a new research project with commercial partners to investigate detecting methane emissions from offshore oil and gas facilities with the use of its proprietary satellite technology.

Read more

AWARDS

Fast Company Most Innovative Companies 2021, Space Category
GHGSat press release
Fast Company

EARSC Award 2021
Product of the Year 2021

Les Mercuriades Award 2021
GHGSat press release
Les Mercuriades

Fast Company World Changing Ideas Awards 2021
GHGSat press release
Fast Company

BloombergNEF Pioneer 2020
GHGSat press release
Bloomberg

World Economic Forum Technology Pioneer 2019
Wold Economic Forum

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