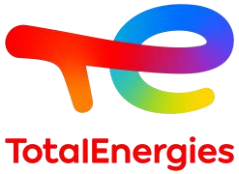
TEPUK

Methane Monitoring and Measurement Methodology

Louise Oatey

TotalEnergies Expectations



Reducing
flaring & venting

Measurement targets

- TotalEnergies Group have committed to OGMP 2.0 Gold Standard reporting by end 2023
- UN led standard concerns improved reporting accuracy and transparency of anthropogenic methane emissions in the oil and gas sector.

Methane reduction targets

- 20% reduction by 2025 based on 2020 baseline
- Campaign to reduce flaring and venting emissions
- Methane intensity below 0.2%

Methane Strategic Project 2022

Leads: Louise Oatey & Kris Kydd

Methane Strategic Project	Define & Validate All Sources
	Map All Sites Against Defined Sources
	Develop accurate measurement methodology
	Begin to implement measurement methodology
LTP	Identification of methane reduction projects including routine venting exclusion

Measurement Methodology

1. Document Current Methodology
2. Ensure all methane sources captured
3. Gap analysis against OGMP 2.0 Gold Standard
4. Implement required improvements
   - E.g. compositions, flowrates, additional measurements

Monitoring
& Measuring

Methane measurement –Site Level AUSEA HQ Tech

Campaigns over 7 assets between July and Sept

Not yet used in the UK but used in other affiliates

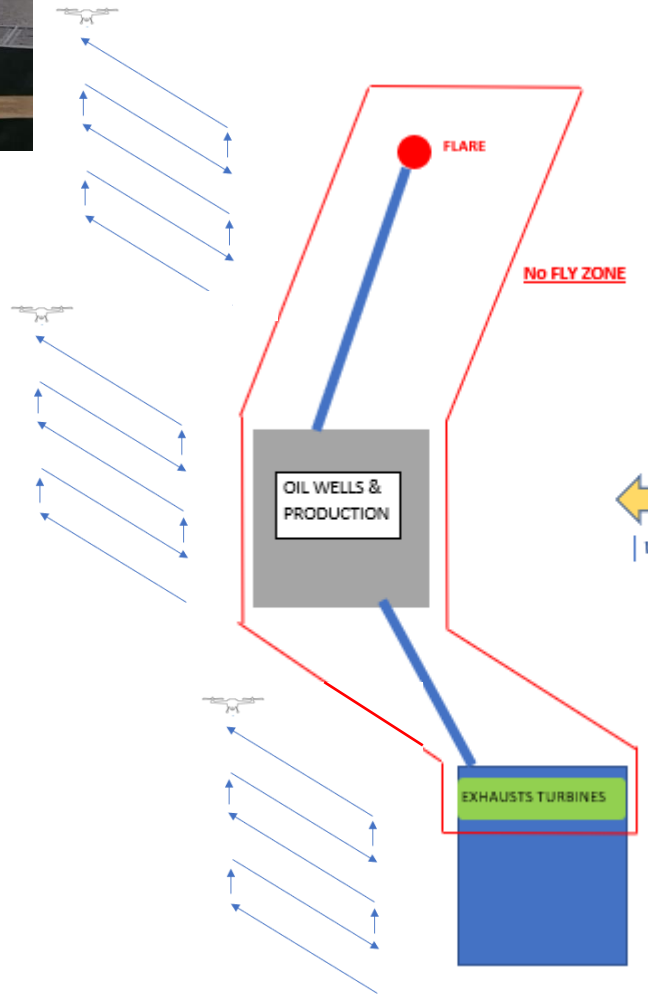
Drone 9kg

CO2 + CH4 sensor

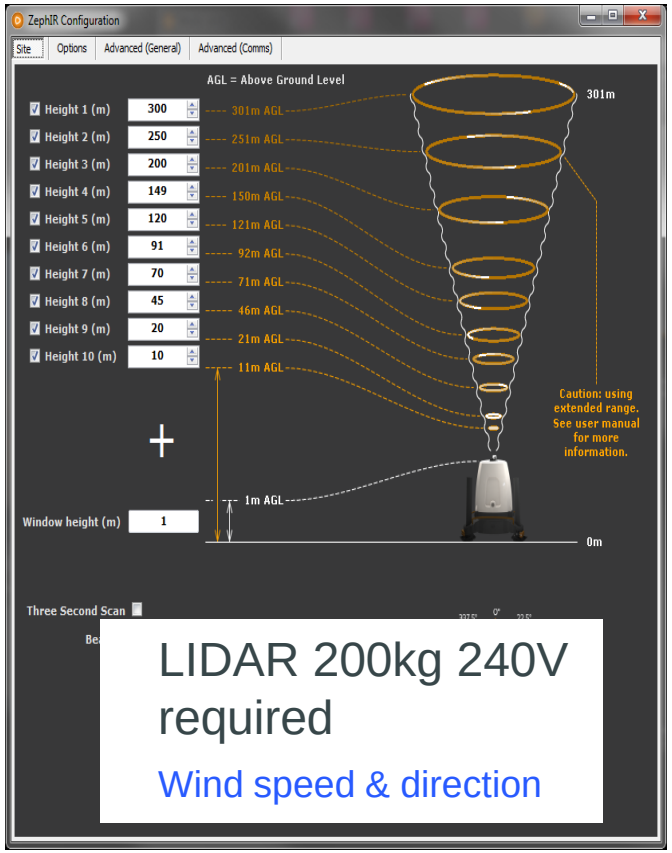
Drone-mounted diode laser spectrometers

Whole site or specific areas

- 30min flights
- From platform or vessel
- Take off location to have visual line of sight to crane / exhausts



30m exclusion zone from platform



LIDAR 200kg 240V required

Wind speed & direction

Methane measurement –Site Level

FLYLOGIX UK Tech

SeekOps

TotalEnergies

- CH4 sensor
- BVLOS
- 3 flights already done to Elgin
- 4 flights across 4 sites between June and August
- 250km to Elgin 250m radius around platform
- *14 rotations - approx. 40min*

Why both Flylogix + AUSEA?

1. Correlate datasets
2. Measure CO2 and CH4

Source Level

Gas Emission Detection Surveys (GEDS) using FLIR Cameras performed by core crew is not enough to reach OGMP 2.0 Level 4 for TotalEnergies.

Currently reviewing various technologies to improve quantification of fugitives

Every 12M

Aim to prove at SGP first before deploying offshore.

Methane **E**missions **Q**uantification Service

To identify & rank leak rates of all joints/connections

Macro Quantification using Sample Wand
Quickly identifies, locates and quantifies methane leaks, characterising leaks using traffic light system.
Sensitivity >0.0183g/hr *(8.76scf/yr)*

Micro Quantification using Probe
Incorporates IKM patent pending survey technology, providing highly accurate and precise measurements.
Sensitivity >0.91µg/hr *(0.000427scf/yr)*