

Climate imperative

Significant and rapid reductions in greenhouse gas emissions are critical to limit global heating.

Methane is an attractive target for immediate emission reductions: 1) it is 86 times more powerful as a greenhouse gas than carbon dioxide over a 20-year period, and 2) major reductions in atmospheric levels can be rapidly achieved due to its short atmospheric lifetime.

Measurement challenge

Oil, gas, and coal industries represent 30% of global anthropogenic methane emissions, with a significant fraction associated with leaks from pipelines, compressor stations and other infrastructure. These lead to localized methane hotspots.

Most of these emissions can be linked with only a few leaks. Hotspots emitting methane at 400 kg/hr or more can account for over 95% of sources from oil, gas, and coal emissions. Existing satellite instruments struggle to identify these leaks because they lack the necessary spatial resolution.

Innovative engineering

NIMCAM, the Near Infrared Multispectral Camera for Atmospheric Methane, is a UK satellite concept designed to operate at a spatial resolution below 100 metres and able to detect methane plumes from leaks of 400 kg/hr and higher.

Building on HMG funding, we have developed an innovative optical design that minimizes mass and volume, allowing us to take advantage of small satellite launch opportunities.

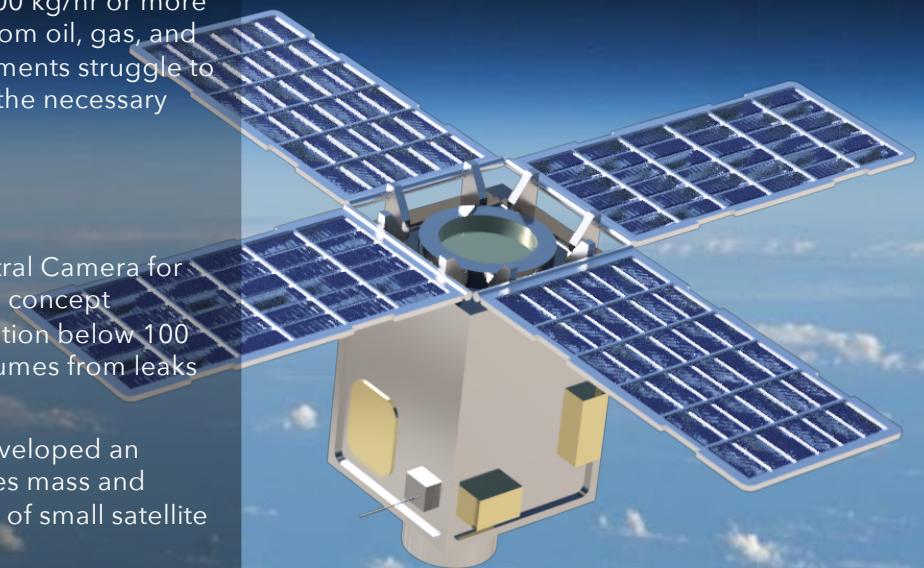
Science with impact

Corporations are facing mounting pressure to provide accurate emissions reporting as well as actively reducing their carbon footprint. The financial and insurance sectors are looking for verifiable data products to support risk mitigation analysis. Policymakers require support in regulation enforcement and inventory efforts to meet national and international commitments. NIMCAM is targeting these growing markets.

NIMCAM offers an opportunity to develop a unique UK remote sensing capability, leverages science and engineering expertise at the University of Edinburgh and UK Astronomy Technology Centre, and exploits new commercial opportunities to get into orbit within three years.

NIMCAM

a UK satellite instrument **locating** and **quantifying** methane leaks with unprecedented **speed** and **precision** for climate reporting



With an accelerated launch date in 2024 NIMCAM will support:

- ✓ Fully mandatory TCFD reporting
- ✓ Evaluation of UK net zero targets
- ✓ Second UNFCC global stocktake preparations



**UK Research
and Innovation**



**UK SPACE
AGENCY**