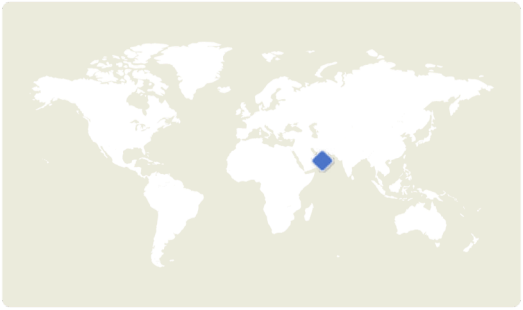
AERIAL MEASUREMENTS OF EMISSIONS IN OMAN

First multi-sector measurement study of methane emission sources in the Arabian peninsula.



DONOR:
European Commission

BENEFITTING COUNTRIES OR REGIONS:
Oman

SECTOR:
Multisector

Subsector, if applicable:
Oil & Gas, Waste

STATUS:
Analysis ongoing

TIMELINE:
Measurements 2023 to 2024

IMEO SCIENCE OBJECTIVE:

→ **Advance science studies in support of countries targeting methane mitigation.**

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KEY FINDINGS

The study will assess oil and gas site-level emissions and source-level distribution via aerial and ground-based methane surveys.

RATIONALE

Prior to this research, there has been no independent, in-depth study of oil and gas methane emissions on the Arabian Peninsula. To expand measurement-based understanding of emissions across sectors, a component on waste sector emissions was added to the oil and gas campaign.

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1 rue Miollis 75015 Paris, France | www.unep.org/imeo
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SIGNIFICANCE FOR DECISIONMAKERS

For operators: Measurement of emissions to identify the contribution of individual sources as well as verification through site or regional-level measurements is crucial to ensure all emission sources are accounted for. The approaches used in this study help make operators of the tools available to them to help identify and reduce their emissions.

For policymakers: Measurement-based estimates of methane emissions from the Arabian peninsula have been limited to insights from satellite data. Aerial and ground-based data can complement and add to the availability of data and provide a specificity and overview of sectoral emissions that is not otherwise available. The results will provide first-of-their-kind insights into the intensity of methane emissions in the region and allow mitigation solutions to be prioritized.

STUDY APPROACH/ACTIVITIES

The measurement team conducted a mix of ground-based and airborne measurements to characterize oil and gas methane emissions in Oman. Airborne measurements were carried out from a specially designed platform that is suspended beneath a helicopter called the HELiPOD. The HELiPOD measurements provided total site-level and regional level emissions estimates. To complement these, a ground-based team conducted drive-by surveys to build up statistics of detectable methane emissions from specific sources. Similar ground-based and airborne measurements were performed around a landfill site, in addition to further exploratory drone-based measurements of the landfill in March 2024.

CATALYZING ACTION

The study was planned and conducted in close collaboration with the oil and gas and landfill operators. Measurement findings were shared with local representatives of the operators throughout the campaign to enable rapid identification of leaks and to enhance their understanding of the study, and the considerations required when performing measurements to quantify site-level emissions.

OTHER SUPPORTERS/STAKEHOLDERS

Principal Investigator: **German Aerospace Center (DLR), Germany AGH University of Science and Technology, Poland**

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The UN Environment Programme's International Methane Emissions Observatory (IMEO) exists to provide open, reliable, and actionable data to the individuals with the agency to reduce methane emissions. IMEO does this by integrating and reconciling data across sources, including its global methane science studies. IMEO supports measurement and research studies around the world to close the knowledge gap on methane emissions and provide policy-relevant insights to decisionmakers.

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