

First Measurements of Methane Emissions from the Waste Sector in Oman by a Helicopter Probe

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Methane (CH₄) is one of the most potent greenhouse gases after carbon dioxide and the focus of worldwide initiatives to combat global warming, including the latest initiative by UNEP, the International Methane Emissions Observatory (IMEO).

According to Oman's latest Biennial Update Report, the solid waste sector is the second largest methane source and represents 15% of Oman's methane emissions. However, until now no sector-specific measurement-based studies on such emissions exist for Oman. In the autumn of 2023, the first IMEO supported science study was conducted in Oman focusing on methane emissions from the waste sector.

Here, we present a novel concept supported and funded by UNEP's IMEO. The approach involves measuring CH₄ emissions from landfills using the unique helicopter-towed probe HELiPOD equipped with in situ methane instrumentation complemented by mobile ground-based CH₄ measurements. Quantifications of CH₄ mass fluxes from individual landfills can be provided from these measurements. The methodology was deployed during the METHANE-To-Go-Oman field experiment in collaboration with be'ah. By comparing our collected data with their estimated methane mass fluxes, we aim to assist the involved companies and related governments in prioritizing their methane emission mitigation actions and policies for future endeavours.