Evaluating Methane Seepage from Decommissioned Offshore Wells in the Context of Natural Marine Emissions

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Recent studies have raised concerns about methane emissions from decommissioned offshore wells, particularly in the North Sea, suggesting they may be significant contributors to atmospheric greenhouse gases. This paper by IOGP (the International Association of Oil and Gas Producers), developed by the methane seepage and wells P&A experts from IOGP member companies examines such claims, focusing on the scientific validity of methodologies used in key publications (e.g., Vielstädte et al., Bottner et al., Lei et al.) and comparing their findings with broader datasets from major offshore basins.

Natural biogenic methane seepage is a well-documented global phenomenon, occurring independently of oil and gas activity.

IOGP aims to present its paper at this North Sea symposium, with an aim to publish a more detailed paper highlighting the following 8 key messages immediately following the symposium:

1. Seafloor seepage of Natural Methane is a common feature from marine sediments around the world
2. Review of the Geomar reports (2015, 2017 and 2020) and Lei et al (2025) reveals weaknesses in the methodology, assumptions and extrapolations
3. Methane seepage volumes from offshore wells are significantly smaller in comparison to the natural seepage estimates from the two of the largest offshore oil and gas basins
4. Members follow good industry practice in the clearance of offshore well positions and trajectories from shallow gas
5. Industry's best practice since 1996 requiring independent verification minimizes the risk of seepage.

Importantly, the paper acknowledges the complexity of methane migration in marine sediments and the need for continued monitoring and research. It calls for improved differentiation between natural and anthropogenic seepage in future studies, and for caution in extrapolating limited datasets to global scales. The findings contribute to the ongoing scientific debate by challenging prevailing narratives and reinforcing the importance of methodological rigor, geological context, and regulatory oversight.

This work supports a more nuanced understanding of methane emissions in offshore environments and aims to inform future policy, research, and industry practice.