Mapping and monitoring of methane seepages from seabed to surface, insights and recommendations from a multi-year Equinor project

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Increased awareness around global GHG emissions have resulted in focus on subsea well associated and naturally occurring methane seeps. To increase our understanding and evaluate the current practice, Equinor launched a comprehensive initiative in 2019 to investigate and quantify methane seepage in selected areas on the Norwegian Continental Shelf (NCS), focusing on both well-associated gas seeps (WAGS) and naturally occurring gas seeps (NOGS). The project aimed to distinguish anthropogenic contributions from natural seepage dynamics and to document the environmental impact of seabed gas release. Through this effort, several innovative technologies, methodologies, and monitoring approaches were developed to identify seepage locations, measure emission rates, and trace the fate of released methane. The use of Multibeam Echosounder data from the water column in combination with water sampling, use of Remotely operated vehicles and laboratory analysis has contributed to a deeper understanding of seabed methane dynamics and supports the development of standardized nomenclature and best practices for mapping and monitoring gas seepage. Status and recommended framework will be presented through our presentation.