



## A pan-European GIS focused on gas hydrates: a research base-line in geohazards and geological storage of CO<sub>2</sub>

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### Abstract

A pan-European GIS focused on hydrate has been developed within the frame of the GARAH project (GeoERA - GeoE.171.002) in order to assess gas hydrate information gaps in the European margins. A data-collection exercise from public sources (MIGRATE and PERGAMON COST actions ES1405 and ES0902, SeaDataNet, NOAA, etc) and European Geological Surveys (BGS, BRGM, IGME, GEUS, etc) has supplied a total of 835 information layers. All this information has been structured in four groups ((i) Geological & Geochemical evidences/indicators, (ii) Geophysical indicators, (iii) Fluid flow seabed indicators and (iv) Oceanographic variables & Geological constrains) where tables and geospatial features have been designed and harmonized following the standards of INSPIRE directives.

This GIS-database has been conceived as a first step or base-line for future gas hydrate related research. The next step as part of 'Work Package 3' of the GARAH project will be the identification of critical knowledge gaps and the definition of specific areas of interest which would benefit from further research. Theses potential future projects could be related to improving the European model of the gas hydrate stability zone (GHSZ), assess potential geohazards and risks, assess the abundance of sediment-hosted gas hydrates, and evaluate the role of CO<sub>2</sub>-rich hydrates for the geological storage of CO<sub>2</sub>.

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