



# Geological Analysis and Resource Assessment of selected Hydrocarbon systems

## Deliverable 1.3

### Annual progress report 2018

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## **GENERAL INTRODUCTION**

The aim of the Geological Analysis and Resource Assessment of selected Hydrocarbon systems (GARA) is to develop a harmonized, scientific based, geological analysis and assessment conventional and unconventional hydrocarbon resources that will help member states to continue the transition to lower Carbon energy sources. This will contribute to climate commitments, and allow the planning for secure sources of affordable energy. The analysis and assessment of hydrocarbons will focus on two areas:

(i) in Europe's major petroleum province – the North Sea and include a “Geological analysis and resource assessment of North Sea petroleum systems”, This research includes the assessment of conventional and unconventional oil and gas resources in the most important hydrocarbon basin in Europe. This will enable the remaining resource to be better understood and managed, and identify options for multiple and alternative uses of the subsurface as producing fields come off-line.

(ii) with a pan-European view, “Hydrate assessment in the European continental margin and related risks”.

The assessment of gas-hydrates resources in the European continental margin represents an information gap of pan-European interest. This will improve the understanding of the potential role that gas-hydrates may play in the future EU energy mix, as it will constitute a base-line for future projects pertaining the improvement of the European model of the GHSZ, related hazards and potential for geological storage of CO<sub>2</sub>.

A catalogue evaluating the multiple-use of hydrocarbon reservoirs, as integrated or alternative use of the subsurface, together with an appraisal on risks and safety, will be produced.

## **EXECUTIVE REPORT SUMMARY**

This report is an internal project progress report describing the results achieved in the project in the first seven months (from 1 July 2018 until 31 January 2019).

In general, all work packages are well in progress although WP4 is to some degree delayed as there are some communication challenges between GIP-P and the other projects on describing the needs of the individual geoscientific projects and what the deliverables from GIP-P can be.

One deliverable (4.1) was delayed one month.



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## 1 PROJECT PROGRESS

The GeoERA Geological Analysis and Resource Assessment of selected Hydrocarbon systems (the GARAH Project) was initiated at the Kick-off GeoERA Projects event in Brussels, 3-5 July 2018. First, a general meeting of the Geo-energy projects was held to establish common grounds and synergies between the projects. Next, a dedicated GARAH project meeting was organised for discussing the project implementation and consolidating the project team. Finally, a meeting between the geo-energy projects and the GIP-P in order to establish a common platform for organising, disseminating and sustaining the digital outputs from the geo-energy projects.

The main purpose of this GARAH project is to generate a catalogue evaluating the multiple-use of hydrocarbon reservoirs, as integrated or alternative use of the subsurface, together with an appraisal on risks and safety. This catalogue will be uploaded to an EGDI platform by the GIP-P project.

The 20 – 21 November 2018 the GARAH group had it first face to face meeting in Madrid, kindly hosted by IGME. The meeting worked with the four work packages and at the end a we had a board meeting.



The GARAH group at the Madrid meeting, 20 – 21 November 2018



## **1.1 WP1: Coordination**

This work package is concerned with the overall financial, administrative and operational management of the project as well as coordinating activities across the work packages.

WP1 is coordinated by GEUS, and 6 person months are budgeted for the WP.

WP1 has organized a Project Agreement signed by all partners. A list of contacts, overall and per work packages, has been established and is regularly updated.

WP1 has organized regular Project Board meetings by teleconference using Skype. At all meetings so far enough partners have participated to reach quorum. A face to face board meeting was held on the 21<sup>st</sup> November 2018 in Madrid. It is expected that the GARAH project will have a face to face meeting each year.

Regarding deliverables, WP1 has produced D1.1: GARAH Dissemination and Exploitation Plan (DEP) (M3), and D1.2: GARAH Project data management plan (M6), and contributed (quality check included) to the deliverables finalized so far: D4.1: GARAH Preliminary data selection, IP guidelines, QA procedures (M7).

## **1.2 WP2: North Sea Petroleum Systems**

WP2 is coordinated by GEUS and further 6 partners have reserved time and budget to participate in the tasks. In total, 62.54 person months are budgeted for the WP.

The assessment of the North Sea Petroleum Systems is divided into two parts; a general assessment part utilizing the "EUOGA" methodology, and a pilot study area using 3D petroleum modelling assessment.

At the Madrid meeting, it was agreed to approach the harmonisation of the database through two questionnaires; one for conventional HC, and one for unconventional HC. These questionnaires have been presented and forwarded to the relevant geological surveys, with the expectation to be completed by March 2019.

First paper submitted: Niels H. Schovsbo and Finn Jakobsen (2019): Review of hydrocarbon potential in Denmark East of 6° 15' E based on the last 30 years of exploration activities.

The pilot study is dependant of mapping carried out by GeoERA 3DGEO-EU project. An early meeting was held in Hannover (11-13 September, 2018). Here both projects participants agreed on the size of the study area, the stratigraphic framework, time frame, and the mapping responsibilities. The data is expected to be delivered by March 2019.

## **1.3 WP3: Knowledge Gaps Gas Hydrates**

WP3 is coordinated by IGME and further 4 partners have reserved time and budget to participate in the tasks. In total, 39.02 person months are budgeted for the WP.

At the start of WP3, main focus has been to describe the available hydrate related-data in a pan-European scope of interest to be incorporated into the GARAH project GIS-database. The geographical study area involves a wide view of the European margins from Macaronesia, to the Black Sea, and the Barents Sea. The thematic layers, data



collection covers all available, public information related to gas-hydrates such as direct evidences (samples), gas compositions, seafloor temperatures, heat flow or seismic anomalies ascribed to near surface gas.

The database obtained in the MIGRATE project has been adopted to the GARAH project and will be forwarded to GIP-P.

#### **1.4 WP4: Knowledge Data Base**

WP4 is coordinated by GEUS and further 4 partners have reserved time and budget to participate in the tasks. In total, 11.08 person months are budgeted for the WP.

At the Kick-off GeoERA Projects event in Brussels, 3-5 July 2018, a meeting between the geo-energy projects and the GIP-P in order to establish a common platform for organizing, disseminating and sustaining the digital outputs from the geo-energy projects. This meeting was followed up with a workshop in Bruxelles, 24-25 October 2018, where the functionality of the upcoming GIS database was discussed. The GARAH project has answered a number of questionnaires send out by GIP-P, and has generated the report: D4.1: Preliminary data selection to provide relevant information in assessing hydrocarbon resources in subsurface.



## 2 DISSEMINATION ACTIVITIES

The GARAH dissemination activities are given in the table below.

No	Activity	Objective	Description of activity	Output (target value)	Responsibility	Start	End	Status
1	Project logo	Inform about the project	Creation of project logo	1 graphic charts		01-05-2018	30-06-2018	Accomplished
2	Project poster	General support of GeoERA	Project poster for GeoERA kick-off	1 poster		01-05-2018	30-06-2018	Accomplished
3	Corporate Identity templates	Inform about the project	Preparation of templates for reports and presentations / posters including partner logos	1 MS Word template 1 PowerPoint template		01-05-2018	31-07-2018	Proceeding
4	Contact address GARAH	Inform about the project	General access address on flyers, poster and websites: ??? In addition: contact address of communication manager	1 address		01-06-2018	31-07-2018	Proceeding
6	Project Website	Inform about the project	Implement a GARAH webpage inside the GeoERA website showing key facts and news as well as deliverables and general dissemination outputs	1 website		01-07-2018	30-09-2018	Proceeding
5	Project leaflet	Inform about the project	Create the initial version of an A5 format leaflet, which contains the key facts of the project	1 leaflet (online, 150 print-outs)		01-07-2018	31-12-2018	Not started
7	GARAH collaboration workshop with 3DGEO-EU	Knowledge exchange and cross cutting topics	The workshop will take place at the offices of BGR in Hannover and will streamline the activities of the GARAH and 3DGEO-EU activities	1 workshop	Stefan	01-07-2018	13-09-2018	Accomplished
9	Shared confidential directory with 3DGEO-EU	Knowledge exchange and cross cutting topics	Setup of a shared directory for exchange of project confidential data	1 shared directory	Peter	01-07-2018	30-09-2018	Accomplished
8	GARAH presentation/poster at EGU 2019 or 2020??	Dissemination of GARAH	Abstract preparation	Abstracts and presentations or poster		01-01-2019	31-12-2019	Not started
10	GARAH face to face meeting	WP and board meetings	The meeting will take place in Madrid at IGME with main focus of harmonizing the data into a common database	Questionnaires and reports D2.1 and D3.1		20-11-2018	21-11-2018	Accomplished