



Egypt – Offshore Nile Delta



EGYPT UPSTREAM GATEWAY
MINISTRY OF PETROLEUM & MINERAL RESOURCES

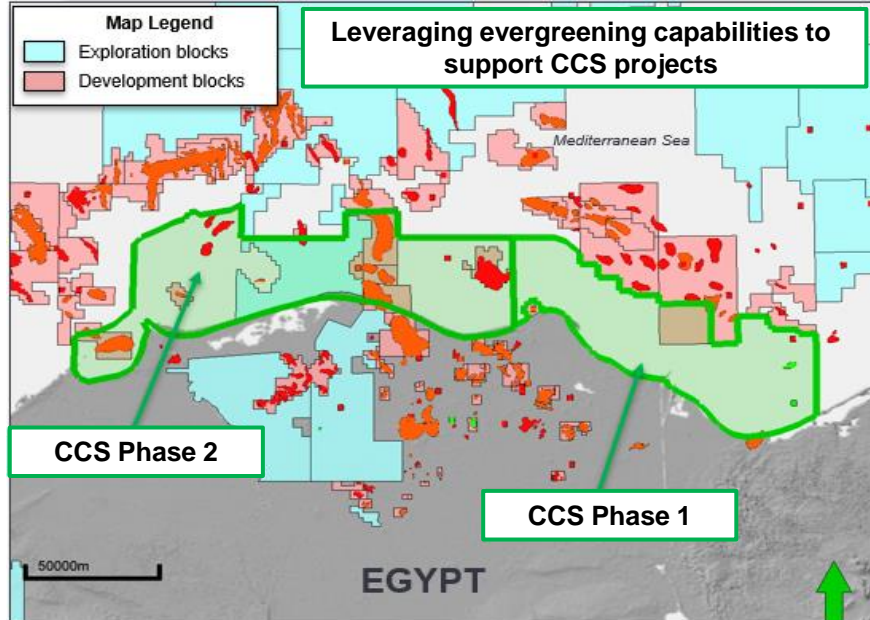
Regional CCS screening Phase 1&2

EXD Flyer 2022

Egypt Upstream Gateway completed a key CCS screening study to evaluate the CO₂ storage potential in the shallow waters offshore the Nile Delta-Mediterranean Sea in Egypt. The main goal is to reduce the CO₂ footprint of Egypt, and to enable discussions with different stakeholder to support creating a legal, environmental, social and infrastructural framework with the international guidelines. The study was divided into two phases: Phase 1 focused on the Eastern offshore Nile Delta, while Phase 2 evaluated the potential in the Western Nile Delta.

This framework will serve as a blueprint for effectively managing similar projects in the future. By employing a meticulous regional screening process, this research project aims to critically assess and evaluate the feasibility of implementing carbon capture and storage techniques within the offshore Nile Delta region of Egypt.

Access the full study project for download [here](#)





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Offshore Nile Delta CCS:

Regional Carbon capture & storage screening – Phase 1 &2

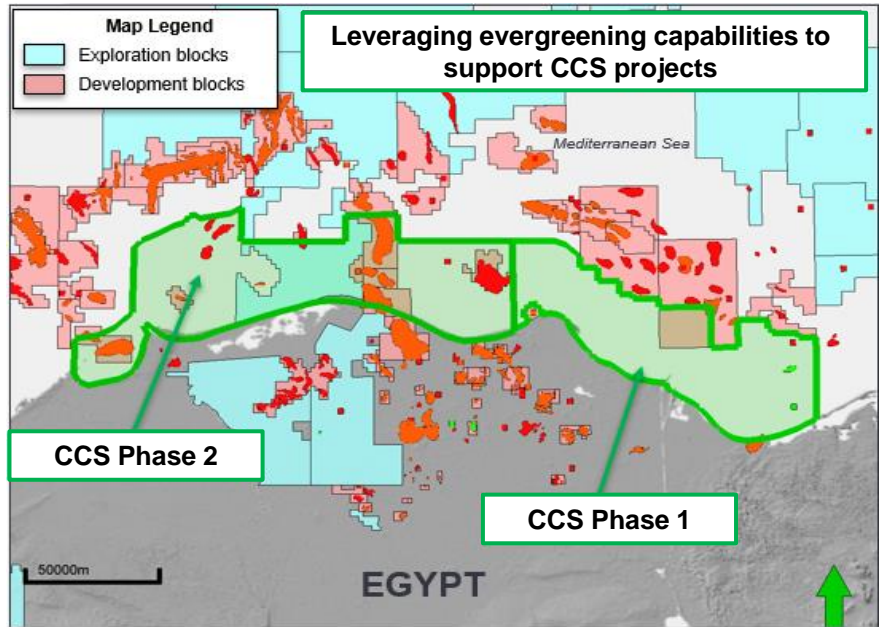




Regional CCS screening Phase1 & 2

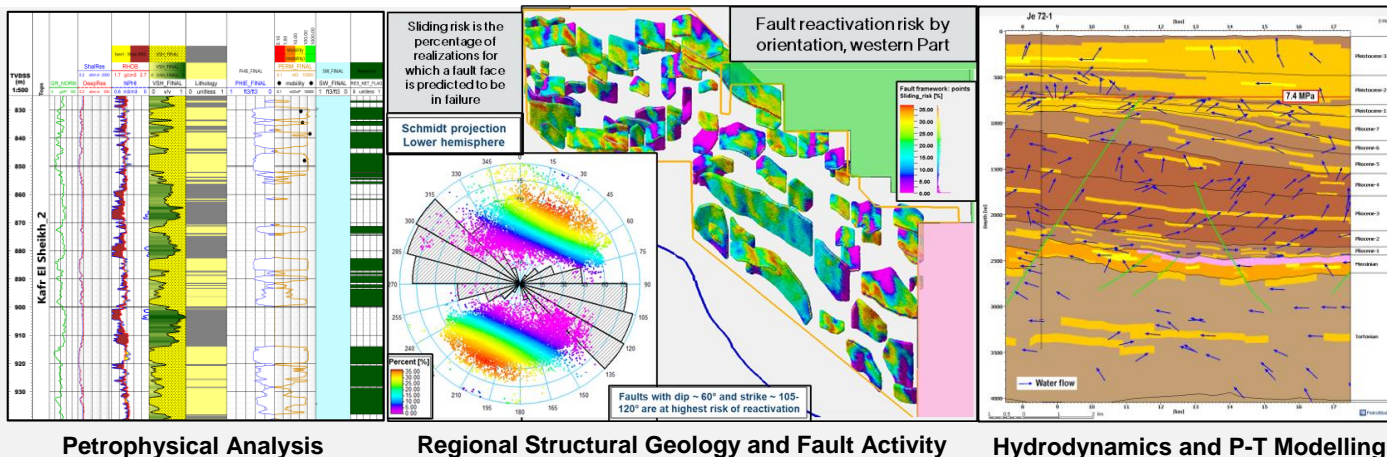
The objective of the study was to evaluate the CO₂ storage potential in the shallow waters offshore the Nile Delta-Mediterranean Sea in Egypt. The goal is to reduce the CO₂ footprint of Egypt in the order of millions of tons per annum and to initiate discussions with different stakeholders to create a legal, environmental, social, and infrastructural framework within international guidelines under which similar projects can be managed in the future. The study was divided into two phases: Phase 1 focused on the Eastern offshore Nile Delta, while Phase 2 evaluated the potential in the Western Nile Delta (see below).

CCS Workflow Highlights
Non-technical evaluation
Petrophysical evaluation
Seismic interpretation & mapping
Fault seal risk assessment
Hydrodynamics and pressure-temperature assessment
CCS play evaluation
CO ₂ capacity estimation & ranking



EUG East-Med regional post-stack merge over ~ 10,000 km².

First, 22 anthropogenically produced CO₂ sources are identified with an approximate total yearly emission capacity of 27Mt of CO₂ within reasonable distances from the study area. The study area was evaluated using all the well and seismic data that were made available by EUG for this project. The overall stratigraphic succession from the Messinian Abu Madi to the Pleistocene formations was screened and key levels with reasonable seismic quality have been interpreted in detail. The technical aspect of the study focused on the pre-selection of potential storage sites by integrating different geological and geophysical workflows (see above).

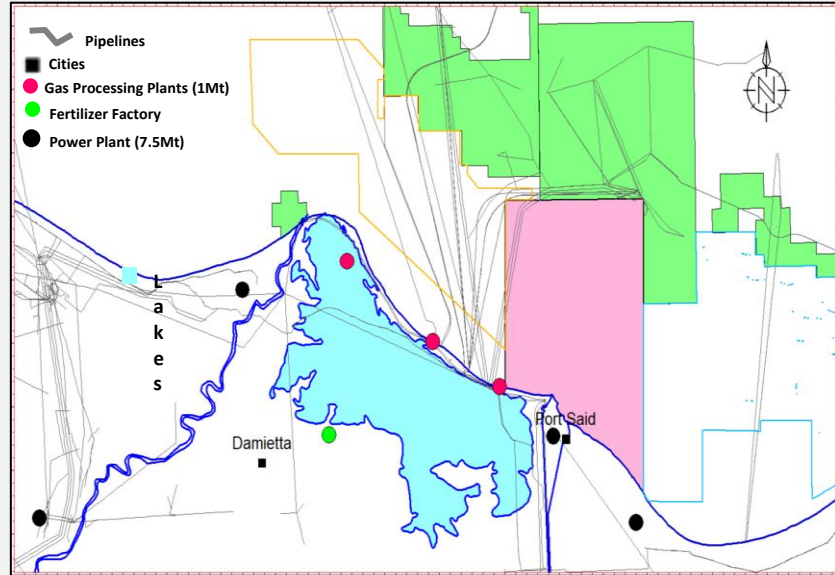




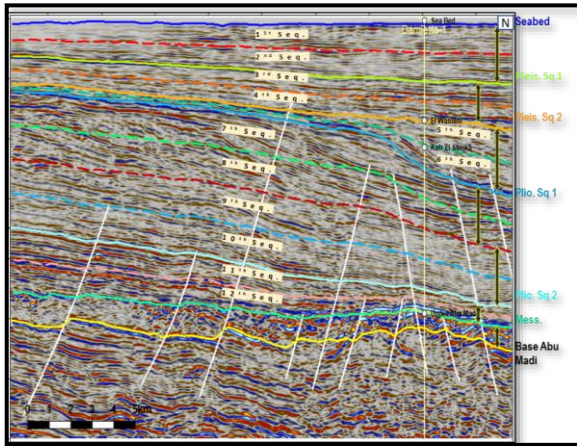
Regional CCS screening Phase1 & 2

In this project we focused on saline aquifers, depleted and near depleted fields have been identified in the western and Eastern offshore Nile Delta.

Finally, 16 sixteen potential storage sites have been identified in both Phase1 &2 study area in the Abu Madi and Lower Pliocene sediments.



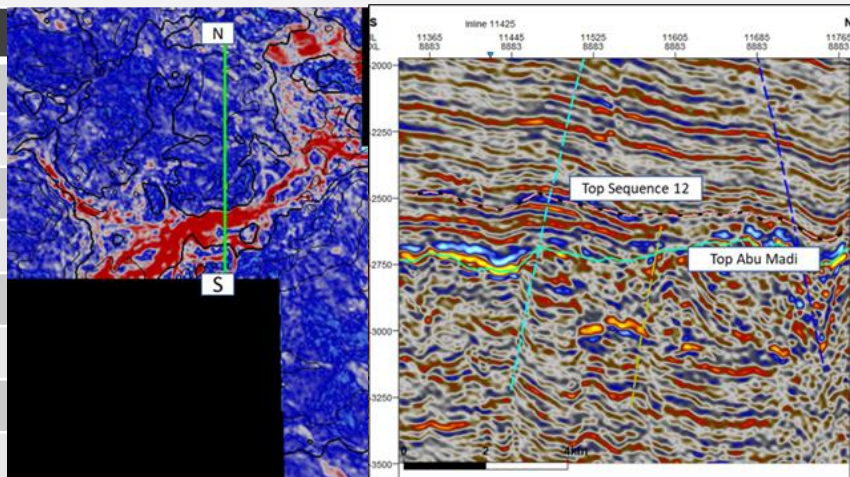
Summary of CO₂ Sources



Seismic Interpretation and Mapping

The theoretical CO₂ storage capacity has been estimated. Using the scheme outlined by the Norwegian Petroleum Directorate (2014), the sites are risked and ranked. In general, the aquifers' capacities are generally small compared to other saline aquifers around the world which are predominantly controlled by stratigraphic and fault boundaries. The storage capacity is estimated with a total maximum theoretical storage capacity of approximately 622Mts for all four sites.

Deliverables
Non-technical evaluation
G&G interpretation
Fault seal analysis
CCS play analysis
Well correlation & petrophysical analysis
Hydrodynamics and P-T assessment
Volumetrics
Final report



An identified Clastic Channel Prospect in Abu Madi and Sequence 12