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A photograph of an offshore oil rig in the middle of a vast, calm blue ocean under a clear sky. The rig is silhouetted against the horizon. A large blue arc is superimposed over the top of the image.

ATLAS TO EXPLORE HYDROCARBON OPPORTUNITIES IN THE DUTCH OFFSHORE

Explore in a mature basin

17 November 2022 – Dutch Exploration Day

Acknowledge

Thanks to the GEODE team and Reviewers



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GEODE in a nutshell

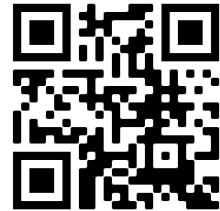
- Joint project of EBN B.V. and TNO to create an atlas to explore hydrocarbon opportunities in the Dutch offshore.
- Easily accessible web-based GIS environment where play-based exploration data such as risk maps and post drill well analysis data is presented for the main hydrocarbons plays of the Dutch offshore.
- Results of this project are made available to the public free of charge.
- Online since November 2021, launched at the Dutch Exploration Day.

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GEODE Project goals



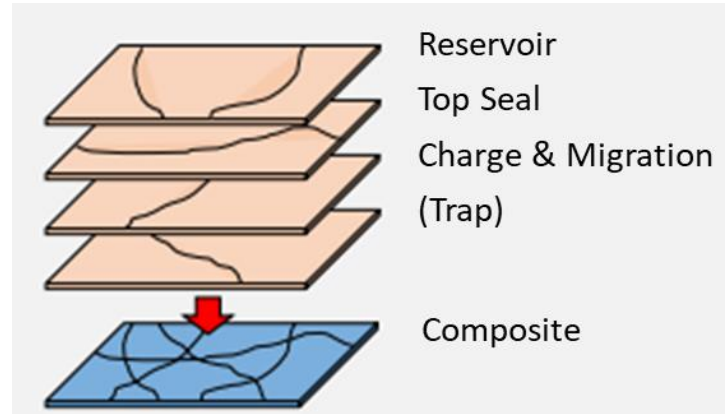
- GEODE aims to help to better understand and frame exploration opportunities against the backdrop of regional common risk segment maps with the objective to stimulate exploration activities within the Dutch Offshore.
- Consolidate subsurface knowledge (e.g. NLOG, TKI and JIP projects) and make information easily accessible in order to support the identification of the most prospective areas,



GEODE approach

- A Play Based Exploration (PBE) approach is used to create common risk segment (CRS) maps.
- Historical data is transformed into mappable information and provides an indication on the '**chance of success**' of finding reservoir, seal, and source rock for a certain play.
- Player software (from GIS-PAX) is used to perform play analyses.

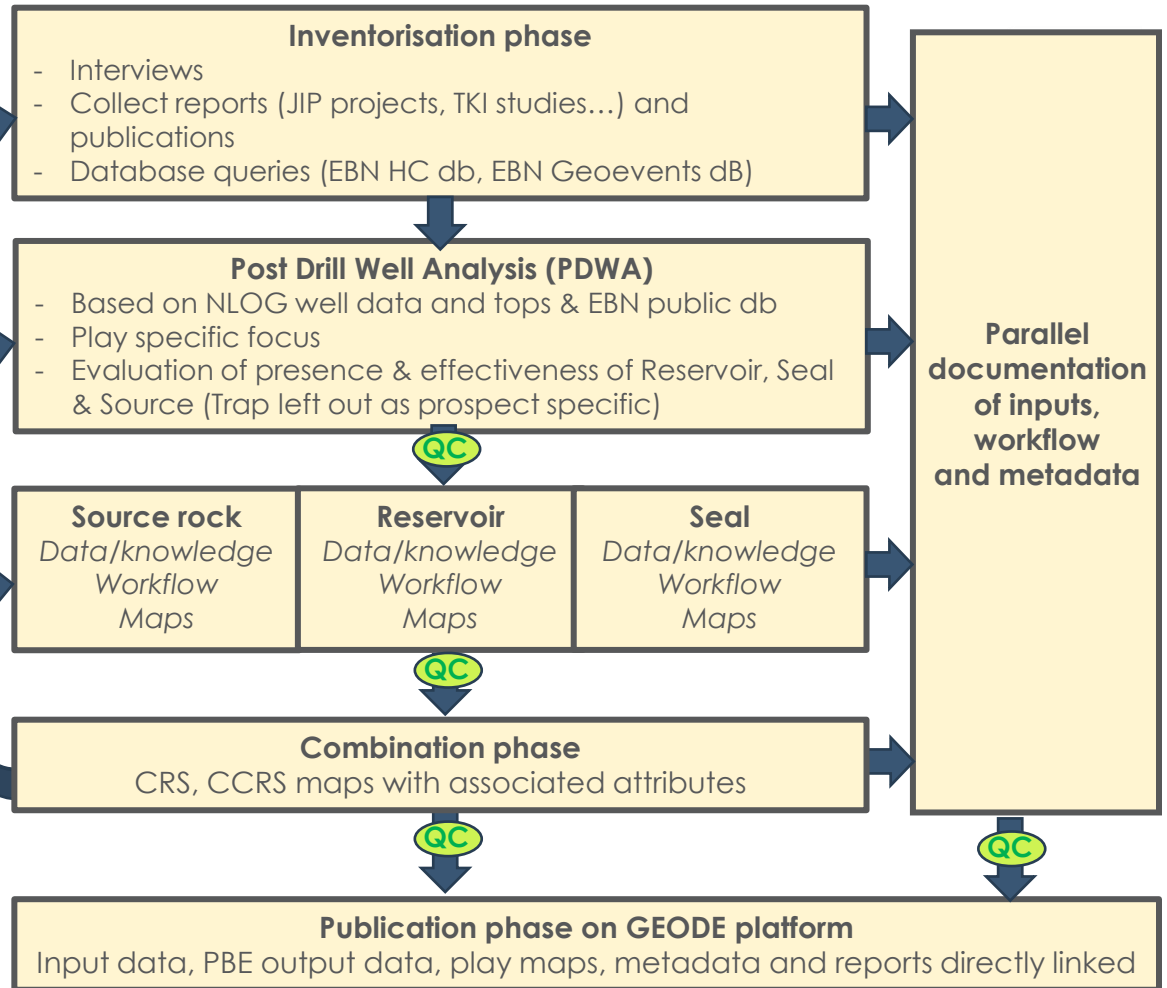
Composite Common Risk Segment map



Workflow per play

- Integrated play team TNO and EBN staff.
- Quality control step done by QA/QC team for each play. These QA/QC teams are formed by external Subject Matter Experts.

Update where necessary



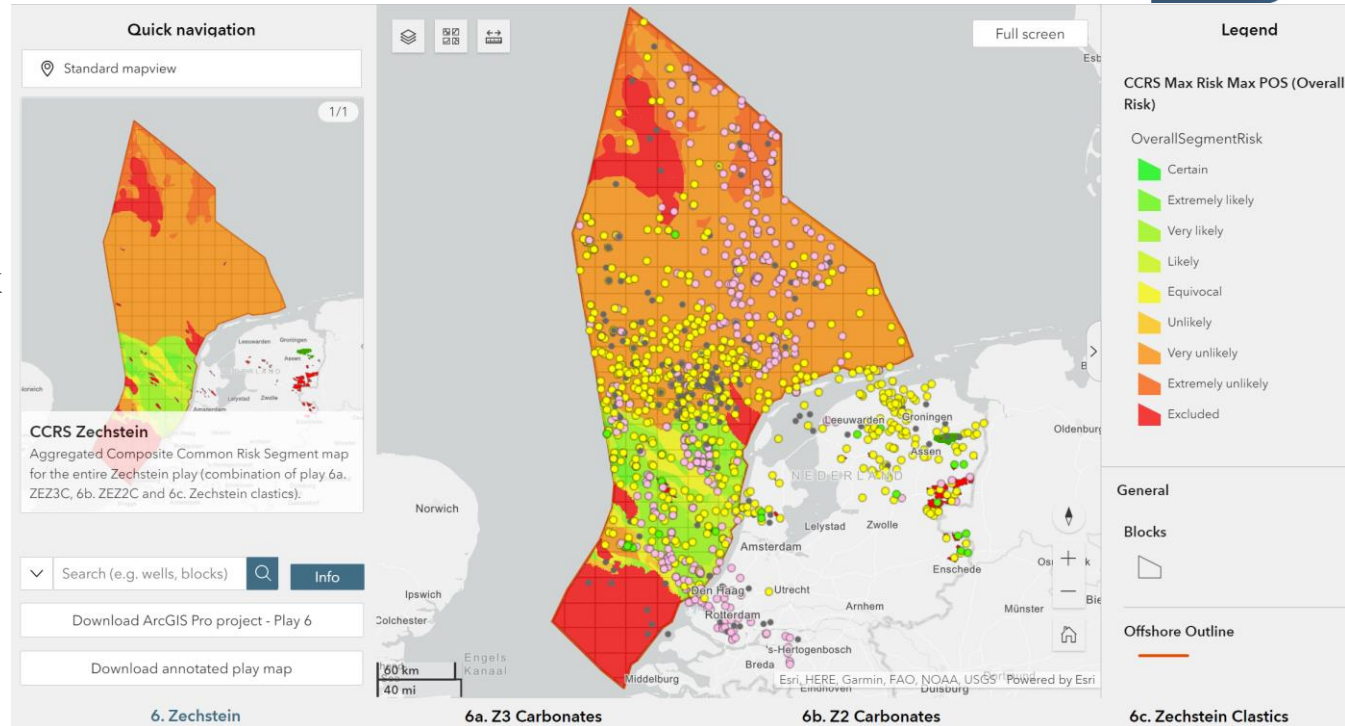
Selected plays for the Dutch offshore

- 8 plays and 4 source rock intervals are published.
- Light version of the Carboniferous play dashboard, the GIS experience will be added in December 2022.
- Work in progress!



Project deliverables per play

- Post-drill well analysis (PDWA)
- Common Risk Segment maps (CRS)
- Composite Common Risk Segment maps (CCRS)
- Annotated play map
- ArcGIS PRO project



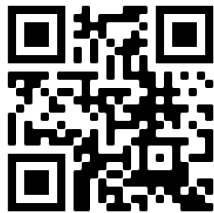
2023 and beyond...



Future directions:

- ❑ We aim to extend GEODE and deliver wall-to-wall risk maps for the entire Dutch subsurface.
- ❑ These risk maps will be dedicated to hydrocarbon, CO2 storage and heat extraction resource evaluations.
- ❑ This would be the first atlas of this kind.
- ❑ A pilot project to identify and mature GEODE deliverables will start in January 2023. Based on pilot phase outcomes we will progress maturing other dashboards for the various resources as well.

Thanks for your attention



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