

Play Fairway Analysis and Block Ranking of the Norwegian North Sea

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Exploration in frontier basin is characterised by high risk-low data investment decisions. Understanding the spatial play extents and risk distribution is essential in identifying exploration opportunities and “sweet-spots”, while implementing a consistent and auditable methodology allows the process to be easily repeatable through time and across assets.

Geographical Information System (GIS) was applied in the play fairway summary and block ranking assessments in frontier settings using the Norwegian North Sea as a case study.

Datasets used included gross depositional environment maps, source rock, licence acreage, structural map, water depth and facilities data. The predicted play fairway summary maps generated during the project for the identified plays matched the corresponding hydrocarbon field distributions and new play fairways covering open acreage were able to be identified for the various play intervals.

The assessment of the available acreage showed that good blocks usually correspond to areas with low total common risk values and favourable economic factors. However, given the assumptions used in the derivation of the play summary maps, the newly delineated play fairways are likely to be associated with high risks and uncertainties.