Proposal for 3D Basin Analysis and Petroleum System Characterisation/Modelling of Western Bredasdorp Basin, Offshore South Africa

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Justification for Study

Although the western extent of the Bredasdorp Basin has demonstrable active petroleum systems favouring significant hydrocarbon potential, this area has received little or no further exploration interests that could lead to possible oilfield development. Possible responsible factors are:

- High prospect risks
- Inadequate basin evolution models
- Insufficient petroleum system evolution models
- Lack of 1D/2D/3D facies models

Methods

1) Seismic and well-log data analyses and interpretations.
2) Integration of subsurface and outcrop analogue data.
3) 3D basin modelling.
4) 1D/2D/3D facies analysis and modelling.
5) Petrophysical modelling and prospect evaluation.

Background: Geological Models- 1D/2D Vs 3D

Prediction of sedimentary basin-fill architecture and geometry often rely on 1D or 2D modelling approaches. However, understanding these features within 3D basin setting will ensure accurate characterisation of petroleum system elements in our depo-system.

Project deliverables

1) Develop 3D basin and facies models for better prediction of petroleum system elements.
2) Further our understanding of existing prospectivity models.

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References