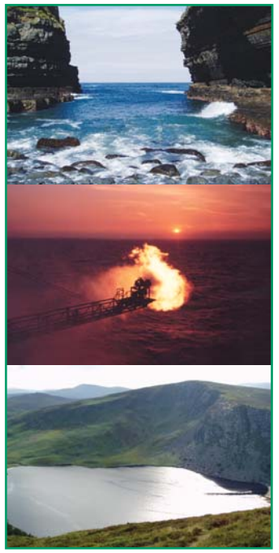

Atlantic Ireland

An exciting petroleum province

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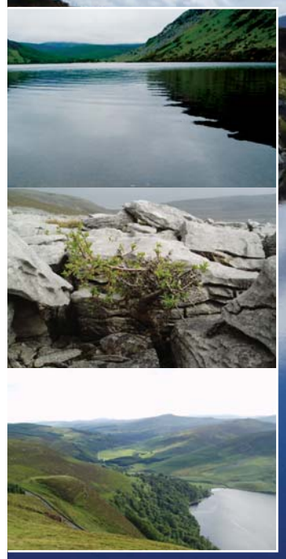
Atlantic Ireland

An exciting petroleum province



Petroleum Affairs Division
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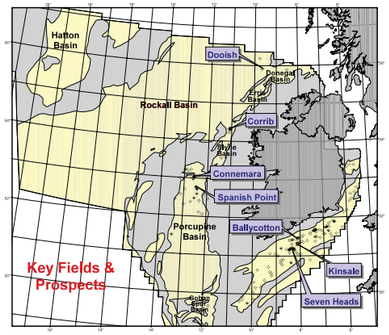
Department of Communications, Marine and Natural Resources

Atlantic Ireland

An exciting petroleum province

Executive Summary

The Atlantic Basins of Ireland are an under-explored frontier petroleum province with proven working hydrocarbon systems. A new evaluation of the area, sponsored by the Petroleum Affairs Division, includes a major revision of the tectonic and deposition systems evolution.

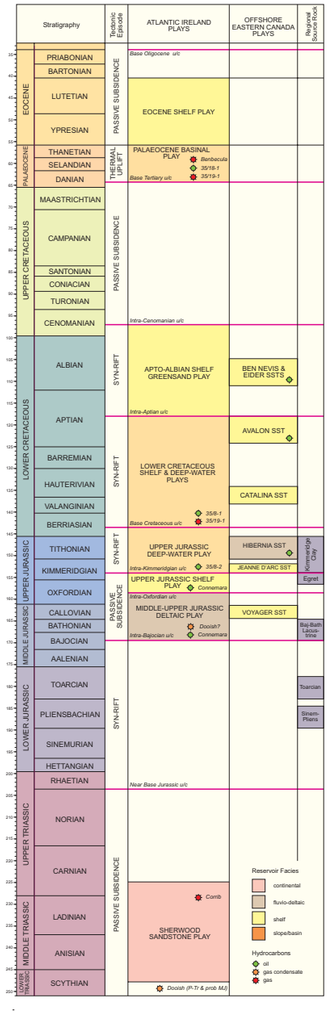


Atlantic reconstruction shows the juxtaposition of the Porcupine and Rockall basins with the Orphan Basin of Eastern Canada. This reconstruction has shed light on the depositional environments and sediment transport directions. These new models show the likelihood of regional world class Upper and Lower Jurassic source rocks. Reservoir distribution at four stratigraphic levels controls the following play systems:

- Permo-Triassic play (proven by the Corrib and Dooish discoveries)
- Middle-Upper Jurassic deltaic and shelf plays
- Lower Cretaceous syn-rift shelf and basinal plays
- Tertiary shelf and basinal plays

Source rock modelling, prospect evaluation, and analogue basin review show a risked yet to find potential of at least 10 billion barrels of oil equivalent. The structural style allows for the presence of giant un-drilled structures.

NORTH ATLANTIC PLAYS



Tectonic Evolution

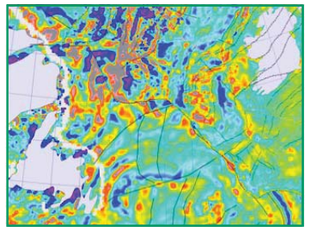
The tectonic evolution of the area is complex, showing four rifting events.

These superimposed events control source and reservoir deposition resulting in the potential for stacked play systems.

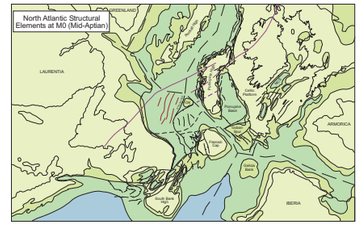
A simplified stratigraphic column is shown.

Atlantic Reconstruction

Gravity and magnetic data illustrate the positioning of the Atlantic Ireland basins against the Orphan and Labrador basins of Eastern Canada (not palinspastically restored).

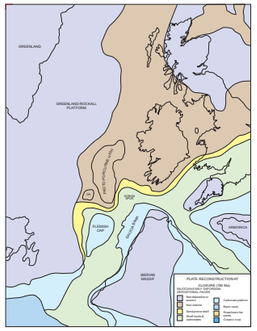


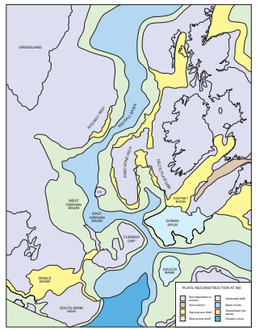
The reconstructed basin and structural lineaments model is also shown. This illustrates the basin configuration immediately prior to the onset of Atlantic Rifting in the Mid Cretaceous (after Srivastava, 1996).



Depositional Environments

On the basis of the reconstructions, the depositional environments at closure in the Early Jurassic (left) and initial Atlantic separation in the Early Cretaceous (right) can be postulated.

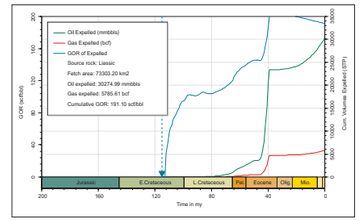




Source Rock Modelling

Well data combined with gross depositional environment models indicate Upper and Lower Jurassic regional world class source rocks. Volumetric assessment and expulsion modelling from the Lower Jurassic alone, as illustrated, shows generated volumes of over 130 billion barrels of oil and around 50Tcf of gas.

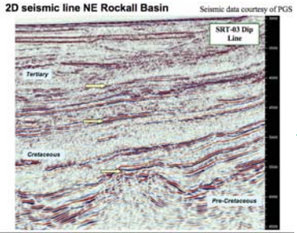
Liassic Source with Geothermal Gradient of 30°/Km



The source rocks are generating today.

2D seismic line NE Rockall Basin

Seismic data courtesy of PGS



Structural Style

Rifting followed by basin margin inversion has resulted in a structural style characterised by simple tilted fault blocks as illustrated. These structures along with large inversion features shown on seismic data invoke the possibility of giant un-drilled prospects.

Current information on Irish offshore licensing can be found at www.pad.ie