

CBM PROSPECTIVITY REVIEW BOTSWANA CASE STUDY

Energy Botswana - PL352, PL353, PL045, PL644 and PL645
Botswana

AWT DISCIPLINES

Geology
Geophysics
Reservoir Engineering
Petrophysics
Resource Assessment
Prospect Risking

PROJECT BACKGROUND

AWT was contracted by Energy Botswana Limited (EBL) to complete a geological review of their wholly owned subsidiary Nata Energy's coal seam gas (CSG) exploration permits in Botswana. The review was commissioned to rank the permits and to generate prospective areas.

Nata Energy held the CSG rights over five petroleum licenses in central Botswana (PL352/2008 and PL353/2008) and northern Botswana (PL045/2008, PL644/2009 and PL645/2009).

Location:
Botswana



THE SCOPE

This review was commissioned to rank the prospectivity of permits and to identify prospective areas.

There were currently no commercial CSG projects operating in Botswana. This appeared to be for reasons other than poor prospectivity.

The data available to produce this prospectivity evaluation was limited and quite sparse. Despite the number of wells that have been drilled in Botswana in recent times, data from only three wells were available for this study. In addition to the well data, regional magnetic and gravity information was available along with a country-wide government-commissioned CSG evaluation report and an over-riding Shell relinquishment report for their coal exploration areas.

AWT reviewed and integrated this data to produce a prospectivity review and ranking of the EBL permits.

AWT ADDED VALUE

Very little detailed information was available on coal thickness and coal depth. Regional maps indicate the coal seams reach thicknesses of up to 25 m in the Central Basin. Numerous coal seams are present within the Morupule and Serowe formations in the central region, and the Tlapana Formation in the northern parts of Botswana.

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Overall, the central region has more certainty regarding coal presence and thickness, particularly PL353/2008. However the presence of the Botswana dyke swarm, and associated sills, seen in the MAS wells, adds significant uncertainty to the quality of the coal.

There is more information on the central permits with available data on three wells in the area. Though there are wells in the northern permits, no data relating to these is currently available. As a result, the southern permits are ranked higher than the northern permits.

All five permits are located within the Kalahari Basin: three are within the North-East Botswana sub-basin, while the remaining permits are within the south-east, central Kalahari sub-basin.

The coals present within the section are Permian aged Gondwanan coals, similar to those found in Australia and other countries that once comprised the southern super continent.

EBL intended to drill three wells based on AWT assessment. The ranking would suggest that two be drilled in the south and one in the north. Overall the presence of coal intersects in wells in the central region providing structural strengthening through infill grouting.