



ASX Code: CE1

Market Announcements Platform ASX Limited Exchange Centre 20 Bridge Street Sydney NSW 2000

#### 10/05/2018

# **New Portfolio Asset - Namibia**

## **Highlights:**

- Calima has been awarded a 56% interest and Operatorship of a 5,433 km<sup>2</sup> exploration block in the emerging deepwater oil play of the Orange River Basin of southern Namibia.
- There has been an upsurge in interest from major international oil companies in Namibia, with Exxon, Total and ONGC, amongst others, acquiring interests over the last six months.
- The increase in industry interest and transaction activity has been driven by the presence of multiple oil-prone source rocks encountered in recent exploration wells.
- The Calima acreage is believed to be underlain by these source rocks where they could be sufficiently mature to generate an oil charge.
- This acquisition complements Calima's other African portfolio assets in Western Sahara and Comoros.

Calima Energy Limited (ASX:CE1) (Calima or Company) has expanded its asset portfolio in Africa through the award of a Petroleum Agreement for offshore Block 2813B, covering an area of 5,344 km² in the Orange River Basin of Namibia (Figure 1). The award was made following an application to the relevant authorities representing the Government of Namibia. The agreement has an initial investment term of four years. During the first year of the initial term the Company will undertake an evaluation of the existing data in, an around, the block. Over the four years of the initial term Calima has committed to acquire 2D or 3D seismic data and undertake a detailed prospectivity review. The investment obligations associated with the agreement are comfortably within the Company's financial capabilities.

Calima's core focus in the short term remains upon the Montney Formation in British Columbia, where the Company plans to drill several wells later in the year. This investment in Namibia provides shareholders with an interest in a high-profile emerging hydrocarbon province alongside major oil





companies. Together with Calima's other portfolio assets in Western Sahara and Comoros, this project has the potential to generate real shareholder value with only modest investment of capital.

Namibia has recently experienced a significant upsurge in industry interest following some encouraging drilling results which demonstrated the presence of thick oil-prone, mature source rocks and high-quality sandstone reservoirs. Over the last six months Exxon, Total, Tullow, ONGC, Africa Energy Corporation and BW Offshore have all farmed-in to projects offshore Namibia and over the next twelve months at least four deepwater wells are expected to be drilled. Of direct relevance in supporting the value proposition offered by Block 2813B, Total farmed-in to the acreage immediately south in October 2017 and, over the next 12 months, Shell are reported to be drilling two wells in acreage immediately to the southeast.

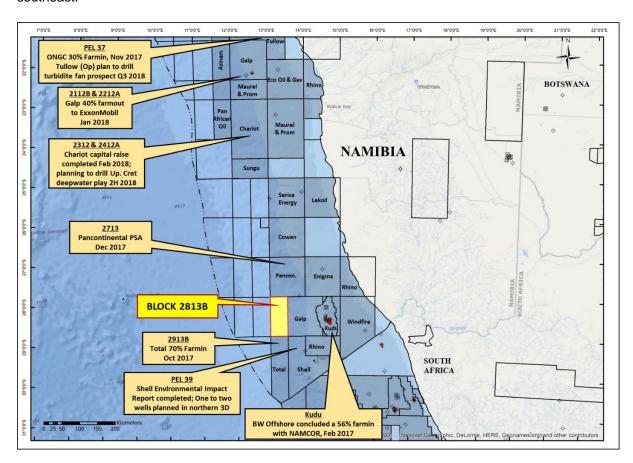


Figure 1 – Map of offshore Namibia showing selected recent and planned exploration activity.

### Alan Stein, Calima's Managing Director commented:

"We are tremendously excited by the exploration potential of this acreage and are delighted to have been able to secure the opportunity at a time of increasing industry interest and activity in the region. This offers us participation in a world-class exploration play with only a modest initial investment in new seismic data. There are a number of exploration wells due to be drilled in adjacent acreage which will provide valuable information to assist Calima's forward investment strategy. The initial four-year period





for seismic acquisition and evaluation complements our core activities in Western Canada where the Company will be drilling several wells in its Montney project later in the year."

# **Background Information**

The sedimentary basins offshore Namibia cover an area of approximately 500,000 km<sup>2</sup>, which is comparable in size to the NW Shelf of Australia. By comparison Namibia is underexplored with only 15 exploration wells having been drilled to date resulting in the Kudu gas and condensate discovery in 1974.

The presence of gas at Kudu caused many in the industry to regard the Namibian offshore as being gas-prone and there was not much follow-on exploration activity. Over the last 10 years however, driven by encouraging results from the matching basins on the other side of the Atlantic in Brazil, explorers refocussed on Namibia and during 2012-13 a Brazilian exploration company drilled wells in the Walvis Basin which demonstrated the presence of oil-mature Aptian source rocks. The Wingat-1 well in 2012 (Figures 2 and 3) encountered thick, mature Aptian oil-prone source rocks and recovered light oil from sandstones within the same interval.

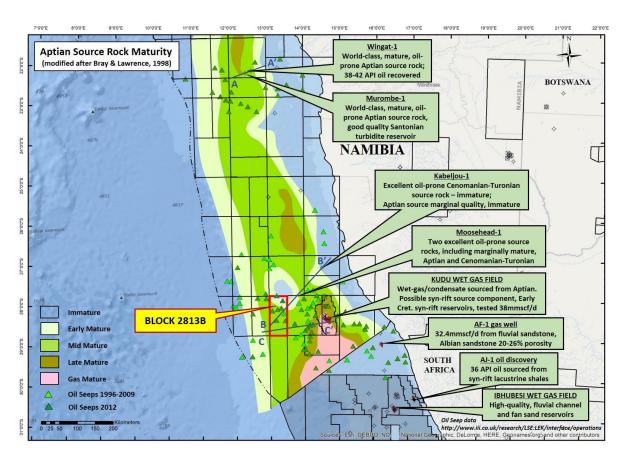


Figure 2 – Map of offshore Namibia showing Aptian source rock maturity, reported sea-surface oil seepages and selected relevant well results.





The following year Murombe-1 (Figures 2 and 3) also penetrated mature, oil-prone Aptian source rocks but, in addition, encountered a 240m-thick turbidite channel sand of Santonian age with a net-to-gross of 15% and an average porosity of 19%. There were no hydrocarbons present in the well which was thought to be due to lack of up-dip seal, however, it did provide calibration for the seismic signature of potential reservoir facies.

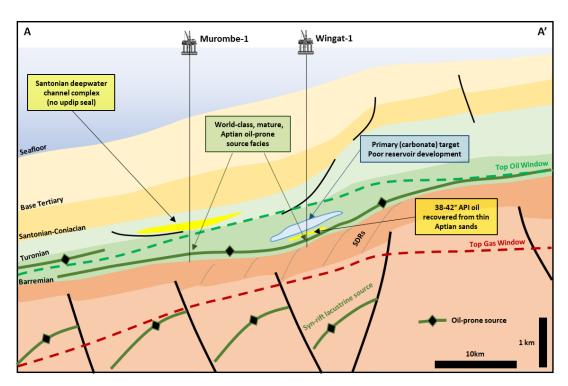


Figure 3 – Cross -section A-A' through the Wingat-1 and Murombe-1 well locations. Both wells encountered mature oil prone Aptian source rocks and Murombe-1 encountered a thick Santonian deep water turbidite sandstone facies. The cross-section is located on Figure 2.

Over the same period in the Orange Basin of southern Namibia, the Kabeljou-1 well (Figures 2 and 4) was drilled to test a structural high to the north of Kudu. This well encountered oil-prone source rocks in the Cenomanian-Turonian but they were immature. The Kabeljou-1 well did not encounter any potential reservoir.

The following year the Moosehead-1 well tested a structural high outboard of Kabeljou-1 (Figure 4). The well encountered oil-prone Aptian and Cenomanian-Turonian source rocks. The deeper Aptian sequence was only marginally mature and the primary reservoir target was a carbonate facies which was a non-reservoir where encountered by the well. In combination with the earlier results at Kudu, where the Aptian source was present but more deeply buried into the gas window (Figure 5), there is now a compelling combination of data points which demonstrate the presence of oil-prone source rocks and provide information about the depth of burial required for maturity. These results, combined with industry seismic mapping, have been used to generate the source rock maturity map in Figure 2.





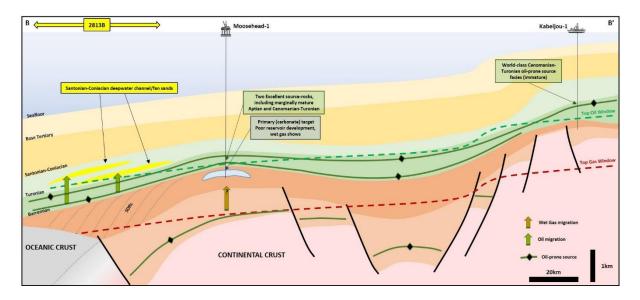


Figure 4 – Cross-section B-B' through the Moosehead-1 and Kabeljou-1 well locations. Both wells encountered immature oil-prone Cenomanian-Turonian source rocks. Moosehead-1 also encountered an oil-prone Aptian source rock that was marginally mature. Block 2813B lies to the southwest of Moosehead-1 where the source rocks are predicted to be oil-mature. The cross-section is located on Figure 2.

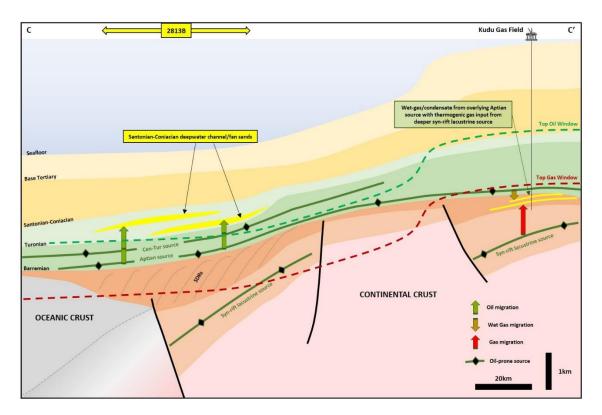


Figure 5 – Cross-section C-C' through the Kudu gas condensate field. The Kudu field is partially charged by Aptian source rocks which are sufficiently buried to be in the gas window. There is also thought to be a contribution from older source rocks. Block 2813B lies to the west of Kudu where the source rocks are predicted to be oil mature. The cross-section is located on Figure 2.





Numerous oil seepages have also been reported offshore Namibia (Figure 2) with most occurrences clustered around the Walvis Basin in the north and the Orange Basin in the south. There are numerous seepages reported over Calima's 2813B block.

The primary reservoir objectives in Block 2813B are Upper Cretaceous slope-turbidite channels and basin-floor-fans similar to those encountered by Murombe-1. There are sequences in Block 2813B (Figure 6) which appear to have the expected seismic signature of deepwater fans in mounded and onlap type settings which could generate traps.

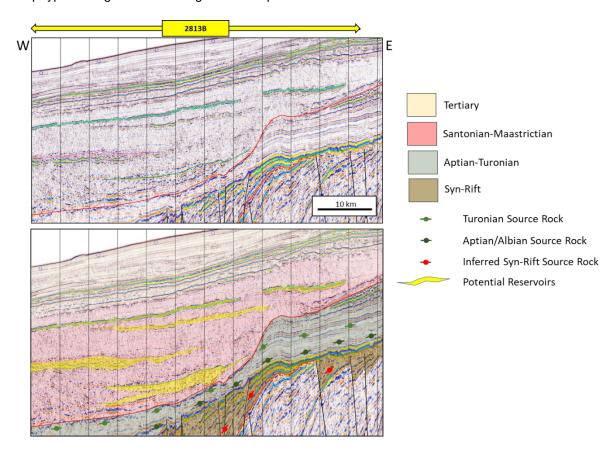


Figure 6 – Example of a seismic line located within Block 2813B. There are several sequences which are interpreted to be slope-turbidite channels and/or basin-floor-fans which might constitute potential reservoirs within the Santonian-Maastrichtian (Upper Cretaceous) section.

The Orange Basin of southern Namibia is a frontier hydrocarbon province with commensurate levels of exploration risk, however, the data available suggests that all the necessary elements of a major petroleum province should be present. Exploration activity by other Operators in the vicinity of Block 2813B will provide valuable information in the near-to-medium term.





The interests in the Block 2813B Petroleum Agreement are:

Calima Energy (Namibia) Ltd 56% (Operator)

Trago Energy Pty Ltd 20%

Harmattan Energy Ltd 14%

NAMCOR 10%

Harmattan Energy Ltd (Harmattan) is a wholly-owned subsidiary of Havoc Partners LLP (Havoc). Havoc developed this opportunity using its existing knowledge and network of contacts in Africa and then, under the terms of the Management Services Agreement entered into between Havoc and the Company in June 2017, offered participation in the project to Calima.

During the initial four-year term of the Petroleum Agreement the minimum investment obligation is US\$2,000,000. Harmattan and Trago Energy Pty Ltd are financially carried through the initial term.

Calima's management team have extensive experience in Africa. As the founders and executive management of Fusion Oil & Gas plc and Ophir Energy plc the team have been directly involved in more than 20 exploration projects across 10 different countries in Africa discovering more than 2 billion barrels of oil equivalent in deepwater basins in Mauritania, Equatorial Guinea and Tanzania.

For further information visit <a href="https://www.calimaenergy.com">www.calimaenergy.com</a> or contact:

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# **About Calima Energy**

**Calima Energy Limited** (ASX:CE1) is an international oil and gas company with its primary interests in Canada, in an area of British Columbia that is considered to be highly prospective for the Montney Formation. The Company also has various portfolio assets in Africa, located in Namibia, Western Sahara and Comoros.