

New Activity Increases Prospectivity Of West Greenland

Evidence of an active petroleum system has been observed in West Greenland for many years with numerous oil seeps and onshore oil staining in the Nuussuaq Basin. More recently, satellite imagery has identified offshore slicks.

The presence of a viable, mature source rock dominated early debate on the prospectivity of the underexplored basins of the West Greenland Shelf. Exploration wells in the 1970s provided valuable data but lacked hydrocarbons. The region has seen a number of exploration phases, and enhancements in exploration technology have resulted in an improved understanding of the regional geology. This, in line with the acquisition of a high-quality seismic database during the past five years, has resulted in a re-evaluation of the southern and central areas of the West Greenland Shelf.

The Geological Survey of Greenland (GEUS) reinterpreted old seismic and well data during the early 1990s and concluded all prospects drilled in the 1970s were flawed, and that cessation of exploration in the region was premature. Significant seismic acquisition occurred in the area during the '90s, and GEUS research in the Nuussuaq region showed evidence of oil seeps onshore. The data from these seeps confirm the presence of Jurassic oils. Analysis has revealed evidence of five oil types/sources.

In 1998, administration of mineral and petroleum resources transferred from the Danish Ministry of Environment and Energy to the Bureau of Minerals and Petroleum (BMP) under Greenland home rule government in Nuuk. A new licensing policy was announced in April 1999 and an open-door policy was established that covered areas offshore West Greenland between 60 degrees N and 63 degrees N; between 68 degrees N and 71 degrees N; and onshore areas Disko-Nuussuaq, West Greenland; and Jameson Land, East Greenland.

In July 2000, the Qulleq-1 exploration well in the Fylla Bank license became the first well drilled offshore Greenland in almost 25 years. Despite being dry, the well provided data that have played a key role in understanding the petroleum prospectivity offshore West Greenland.

The West Greenland 2002 licensing round covered an area between 63 degrees N and 68 degrees N. Competitive terms included a reduced corporate tax (from 35 to 30 percent). EnCana Corp. (87.5 percent operating interest) and Greenland national oil company Nunaoil A/S (12.5 percent) were awarded a license in the Nuuk Basin. The Atammik license covers 3,985 square kilometers in water depths of 200-1,000 meters.

The BMP launched the Greenland licensing round in April 2004. Four areas were available between 62 degrees N and 69 degrees N, comprising parts of the Lady Franklin Basin, the Kangaamiut Basin and ridge, parts of the Ikermiut fault zone/Sisimiut Basin, and parts of the Atammik and Fylla structural complexes.

A new license was awarded to EnCana (87.5 percent operating interest) and Nunaoil (12.5 percent) in the northeastern part of the Lady Franklin Basin in January 2005. Located 250 km west of Nuuk, the license covers 2,897 sq km in water depths ranging from 750 m in the north to 1,750 m in the south.

“The Geological Survey of Greenland reinterpreted old data and concluded that cessation of exploration was premature.”

EnCana is offering up to 60 percent of its participating interests in both of its offshore West Greenland licenses to qualified companies. The initial exploration periods for the Atammik and Lady Franklin licenses expire Dec. 31, 2006. All commitments have been completed for this initial exploration period for the Atammik license. EnCana has reported a similar program is planned for the Lady Franklin license.

EnCana has stated it intends to proceed to the second exploration phase, which carries commitments of one exploration well and a 300 sq-km 3-D seismic program for the Atammik license, and an exploration well and an optional 500 sq-km 3-D survey for the Lady Franklin license. Extensive regional evaluations have been conducted and a minimum of seven primary leads have been identified in the Lady Franklin Basin, and at least five have been identified in the Nuuk Basin.

The BMP announced in January 2005 that the Disko-Nuussuaq region between 67 degrees N and 71 degrees N was being prepared for licensing. The former open-door onshore and offshore areas between 68 degrees N and 71 degrees N have been closed for applications for exclusive hydrocarbon licenses until Dec. 31. These areas are still open for nonexclusive prospecting license applications.

TGS-NOPEC commenced acquiring a multiclient, 7,000 km 2-D survey last year to infill existing seismic grids in the Lady Franklin Basin and Disko Island area. On completion, TGS-NOPEC reports it will have more than 34,000 km of modern 2-D seismic available offshore West Greenland.

The BMP, along with GEUS, is planning an updated evaluation of the exploration possibilities and prospectivity that includes the new seismic data. This will be presented this summer, prior to announcing details for the next licensing round.

For information regarding the EnCana West Greenland licenses, contact Mark.Cooper@encana.com. □



PAUL WEBBER is regional manager, Northwest Europe, for IHS Energy's Global E&P Reporting Service. He can be reached at Paul.webber@ihsenergy.com.