

Exploration opportunities in the Hopedale Basin, Labrador Sea, Province of Newfoundland and Labrador, Canada

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Summary

More than 30 years have past since the first major gas discovery (Bjarni field) in the Canadian Labrador Sea. During the 1970-1983 exploration cycle, source and reservoir rocks as well as several large and medium size fields were discovered. Within the Hopedale Basin large gas fields such as Bjarni/North Bjarni complex (3.1 tcf) and Gudrid (.9 tcf) were found. While oil is now produced on the more southerly Grand Banks and gas is produced on the Scotian Shelf, no exploration or delineation drilling has taken place in the Hopedale Basin since 1983. The Hopedale Basin is an under-explored Mesozoic rifted area located off Newfoundland and Labrador, between 53° and 57° North Latitude.

After several reassessments of the Labrador Sea gas potential and five successive seasons (2002-2007) of modern seismic acquisition and processing, four Hopedale Basin exploration parcels, totaling 939,678 hectares (2,321,995 acres) were offered by the C-NLOPB for an exploration land sale. Interested parties have until August 2008 to submit bids for these parcels. The four parcels lie on the shelf in 200 m to 500 m of water depth and two of the blocks contain the fenced-in Significant Discoveries Licenses of the Bjarni-North Bjarni and Gudrid gas fields.

A proven petroleum system exists in the basin anchored by the Early Cretaceous Bjarni lacustrine shale (source rock) and alluvial sandstones (reservoir rock). Other reservoirs exist in Late Cretaceous and Tertiary marine sandstone. As indicated by the newly acquired seismic data, several untested structural and stratigraphic traps, some accompanied by amplitude anomalies, are

identifiable on the new seismic data. The four parcels may contain an additional 3-5 tcf gas, bringing the area to the economic threshold needed for development. More mature lacustrine source rocks or an older marine source that can generate oil may exist in the large and deep basinal troughs located on the slope and rise situated east of the landsale parcels.

References

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