

AAPG EMD Gas Hydrates Committee Report – 2010

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Gas Hydrate Committee

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A field test to assess sustainable production rates will be undertaken in the Prudhoe Bay Field on the North Slope of Alaska in early 2011. The test will be at industry scale will extend to over one year. A deepwater production test planned for offshore Japan is 2012 as a follow-up to the Arctic test. A CO₂ injection test is also in the planning stages for 2011. The goal is to determine if CO₂ can be injected into a gas hydrate reservoir resulting in the production of methane while permanently sequestering CO₂.

Over the past decade, substantial progress has been made as predictive models have been developed and confirmed for hydrate exploration and for the characterization of hydrate reservoirs. The achieving of sustained commercial production rates should spur industry interest in the United States and worldwide.

The companies that are most involved with gas hydrate programs in the U.S. include BP, Chevron, ConocoPhillips, Schlumberger, and Halliburton; although all of the operators on the North Slope are now involved. Their in-kind contributions of labor and data are complemented by a substantial match of Federal funds. Several service companies are engaged in a support role as subcontractors.

The Gas Hydrate Committee's role to the broader membership of AAPG has been limited as gas hydrate has been widely seen as a resource for the distant future. With success in the upcoming production tests, a greater interest by AAPG members is expected, and the committee will play an increasing role in communicating development in this field.

One of the areas where information from the committee will be of value is in communicating the resource potential of gas hydrate at a regional and basinal scale. Resource estimates that were published during the 1970s and 1980s, and which are still widely cited, did not view gas hydrate from a petroleum systems perspective, and did not differentiate high grade reservoirs (sands and gravels) from low-grade reservoirs (shales). Hydrate assessments utilizing a petroleum systems approach have thus far been published only for the North Slope of Alaska, the Gulf of Mexico, and a small portion of offshore Japan. A new global assessment, based on a petroleum systems model, is currently in progress with results to be available in early 2012.

Due to the nature of natural gas markets, commercial hydrate development will likely occur fastest in regions where demand is strong and supplies are limited; in particular, Japan, India, China, and South Korea. This represents an opportunity for stronger interconnection with AAPG members outside of the U.S.

Additional International Activity

A gas hydrate field program will commence in April, 2010, offshore South Korea as a follow-up to the successful field program conducted in 2007.

EMD Technical Sessions and Publications

AAPG Memoir 89, with the title "Natural Gas Hydrates -- Energy Resource Potential and Associated Geologic Hazards", was released in January, 2010. The publication consists of 39

articles, with expanded abstracts on paper and the full articles on CD-ROM. If printed out in its entirety, the volume runs to over 800 pages.

The 2010 AAPG annual meeting in New Orleans will include hydrate oral and poster sessions, a gas hydrate short course, and a “Friends of Gas Hydrate” committee meeting.