

AAPG EMD Gas Hydrates Committee Mid-year Report

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Progress toward commercialization of gas hydrates in North America continued through calendar year 2007, albeit more slowly than many in the hydrocarbon industry might like. The pace in the US is dominated by the Department of Energy's (DOE's) funding for a wide variety of research projects, only three of which involve actual drilling and sampling with an eye toward eventual production experiments. The amount of research being conducted independent of the DOE by the major oil companies and service companies is difficult to assess. However, judging by participation of representatives of such companies at various meetings, little outside of DOE sponsorship is being done.

The AAPG's website pointed to a news release on August 27, 2007, that announced Vietnam's entry into the corps of countries with hydrates research programs. The article specifically mentioned that Vietnam's interest in producing gas hydrates was to extend infrastructure lifetime, which is a different economic driver than that at countries like Japan and Korea where basic national energy supply is the driver. The infrastructure lifetime extension economic model is one often mentioned as an early opportunity for hydrate production in places like the Gulf of Mexico. Another article pointed to by the AAPG website appeared on October 17, 2007, and related to Japan's program, specifically the government's acquisition of a modern seismic vessel to record 3D data. The vessel is to be used, in part, to map the Nankai Trough, which, evidently, has been studied with only 2D data to date.

During the AAPG annual meeting in April 2007, three papers on gas hydrates were presented. The 2007 meeting did not have any dedicated hydrates oral or poster sessions. The Gas Hydrates Committee hosted an informal session for the "Friends of Gas Hydrates" one evening. About 20 convention-goers attended and heard an update from Bob Hunter of the DOE-funded BP Alaska project. The BP project had recently completed drilling and coring a well at Milne Point. Pre-drill predictions indicated two more or less 50 ft thick hydrate bearing sands, which is essentially what was drilled.

The 2008 AAPG annual meeting in San Antonio will include an oral session with 10 presentations, a poster session with 4 posters, a short course, and the "Friends of Gas Hydrate" evening meeting.

Final editing of papers for the special publication from the 2004 Hedberg Research Conference has been completed and publication is slated for 2008. Sponsors have been secured as a means of lowering the purchase price.

In addition to the DOE-funded BP Alaska program, two others are noteworthy in the march toward hydrate production experiments. Field operations in the BP Alaska program will be in somewhat of a hiatus for a year or two as decisions are made regarding a path forward toward production experiments. A project being conducted by the North Slope Borough is moving forward with explicit plans to drill a well to test the thesis that production of free gas beneath the hydrate stability zone will lead to hydrate dissociation and subsequent production of that hydrate gas. This project is focusing on one of the two Barrow gas fields and the Walakpa field and plans to have a drilling proposal on the table by the end of 2008. These two projects need to move forward

steadily if the objective of the DOE's National Energy Technology Laboratory (NETL) of proving producibility of Arctic hydrates by 2015 is to be met. One issue in producibility testing is that hydrate reservoir modeling has suggested that hydrate production may be slower than conventional gas production but would continue over a longer period of time, i.e., anticipated DOE-funded production tests may need to run for longer periods than would be used in conventional well appraisal.

The third DOE-funded drilling project is the Chevron Gulf of Mexico JIP. After a reasonably successful effort of drilling fine-grained sediments in 2005, the program has continued with plans to drill sand-rich sediments. A public meeting was held in July 2007, in Houston to high grade drilling sites. Sites in Alaminos Canyon block 818 were at the top of the list. Chevron drilled this block for conventional resources, and that drilling penetrated a sandy, hydrate-bearing section. The JIP also considered sites in Alaminos Canyon block 857, and a few more sites were added to the list during the meeting through ad hoc nominations from the floor by the Minerals Management Service (MMS). The JIP expects the next drilling cruise to be in spring 2008.

During the JIP site selection meeting, one of the MMS representatives noted that the long-awaited MMS assessment of the hydrate potential of the OCS may be delivered by year end. Release of the MMS assessment of the Gulf of Mexico was initially anticipated for June 2006. The release has been continually delayed for over a year.

During the 2006-07 drilling season, the Japanese and Canadian governments began a two-year program at the Mallik site. Two wells that were drilled during the 2002 program were re-entered and prepared for production tests during the 2007-08 season. Relatively little is known about the scope of tests planned. As part of the revitalization of the wells, some limited testing, similar to that conducted in 2002, was completed.

The NETL's more or less quarterly newsletter, *Fire in the Ice*, which is available on the NETL website, is a good source of information on the US gas hydrates research programs. It also contains articles from time to time on programs in other countries. Most notably this year, it contained articles on the 2006 drilling in Indian waters and the Japan-Canada program at Mallik.

While progress toward gas hydrate commerciality has been made through 2007, economic production still seems to be over a somewhat distant horizon.