The Development Path for Hydrate Natural Gas

The vast resource potential attributed to gas hydrate has led to an understandable interest from nations with the most severe energy deficiencies. Although technical and economic hurdles have pushed back the timeline for development, considerable progress has been made in the past five years. Commercial hydrate development requires high concentrations of hydrate in porous, permeable reservoirs. While it is unrealistic to consider the global potential of gas hydrate to be in the hundreds of thousands of tcf, there is a strong potential in the hundreds of tcf or thousands of tcf.

For gas hydrate development to be commercially viable, economic factors need to be addressed. These include operating expense, flow rates, ultimate recovery per well, transportation to markets, and safety.

Press releases from several national gas hydrate research programs have reported gas hydrate “discoveries”. Except in a few specific areas such as the North Slope of Alaska, the Gulf of Mexico and the Nankai deposits off central SE Japan, valid resource assessments remain to be accomplished. A focused exploration effort based on geological and depositional characteristics is needed that addresses hydrate as part of a larger petroleum system. It is very likely that drilling on properly identified prospects, rather than just targeting bottom-simulating reflectors (BSRs), will lead to commercial development in less than a decade.
Art Johnson Bio

Art Johnson is President and Chief of Exploration for Hydrate Energy International and is engaged in energy consulting in the U.S. and throughout the world. Prior to forming HEI in 2002, Art was with Chevron for 25 years. He is co-chair of the AAPG/EMD Gas Hydrate Committee and is a Past-President of New Orleans Geological Society. Art chaired the Methane Hydrate Advisory Committee for the U.S. Secretary of Energy from 2001 to 2006 and has advised Congress and the White House on energy issues since 1997. He has an on-going role coordinating the research efforts of industry, universities, and government agencies, and serves as an AAPG Visiting Geoscientist. Art has been appointed as the Gas Hydrate Lead Analyst for the "Global Energy Assessment", an international project supported by the World Bank, UN organizations, and national governments.

Art lives in Kenner, Louisiana with his wife and daughter. Among his recent publications are "Economic Geology of Natural Gas Hydrate" published by Springer, "Alternative Energy and Fuels Technology" published by the Catalyst Group, and "AAPG Memoir 89".