

Committee on Resources

Subcommittee on Energy & Minerals Resources

Witness Statement

TESTIMONY OF

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BEFORE THE

UNITED STATES HOUSE OF REPRESENTATIVES

COMMITTEE ON RESOURCES

SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES

H.R. 1753 AND S. 330

"Methane Hydrate Research and Development Act of 1999"

The Honorable Barbara Cubin, Chair

At

2:00 pm, May 25, 1999

Room 1324 Longworth House Office Building

This statement is respectfully submitted in support of H.R. 1753 and S. 330. Recent studies have shown that gas hydrates are widespread along the coastline of the continental United States, onshore areas of Alaska and the possibly in deep marine environments of the Pacific Islands of the United States and other countries. The amount of gas in hydrate reservoirs of the United States greatly exceeds the volume of known

conventional gas reserves. The gas hydrate accumulations in the area of the Prudhoe Bay and Kuparuk River oil fields in northern Alaska are best known and documented gas hydrate occurrences in the world. Recently completed domestic gas hydrate assessments suggest that the North Slope of Alaska may contain as much as 590 trillion cubic feet of gas in hydrate form and the offshore areas of Alaska may contain an additional 168 trillion cubic feet of gas in hydrates. The Prudhoe Bay-Kuparuk River gas hydrate accumulation is estimated to contain approximately 35 to 45 trillion cubic feet of gas, which is one of the largest gas accumulations in North America. Unlike most marine gas hydrate accumulations, such as those along the eastern continental margin of the United States or in the Gulf of Mexico, the permafrost associated gas hydrate accumulation in northern Alaska occur in high concentrations and are underlain by large conventional free-gas accumulations.

The occurrence of concentrated gas hydrate accumulations and associated conventional free-gas accumulations are thought to be critical for the successful economic production of gas hydrates. An additional comparison reveals that onshore permafrost associated gas hydrates, relative to marine gas hydrate accumulations, often occur in higher quality reservoir rocks which should also contribute to the economic production of this vast energy resource. It should also be noted that the known gas hydrate accumulations in northern Alaska are found within an area of very active industry exploration and development operations. The existing oil and gas industry infrastructure in northern Alaska will certainly contribute to the eventual economic development of the North Slope gas hydrate resources. This infrastructure and known hydrate reserves were the reason that this area as the first choice for testing by the Japan National Oil Corporation last year. We believe that the cost of developing gas hydrate exploration and production technology will be considerably less on if developed on land rather than at sea.

The first gas hydrate accumulations to be produced may have unique characteristics, such as location, that may make them technically and economically viable. For example, gas associated with conventional oil fields on the North Slope of Alaska is used to generate electricity in support of local field operations, for miscible gas floods, gas lift operations in producing oil wells and re-injected to maintain reservoir pressures in producing fields. In the future, gas may be used to generate steam that may be needed to produce the known vast quantities of heavy oil and more recently the production of a clean diesel fuel by gas to liquid conversion. Existing and emerging operational needs for natural gas on the North Slope are outpacing the discovery of new conventional resources and at least one of the operators in Alaska is looking at gas hydrates as a potential source of gas for field operations. The North Slope of Alaska contains vast, highly concentrated gas hydrate accumulations that may be exploited because of a unique local need for natural gas.

In addition to the above, and even more important is the possibility of utilizing hydrate gas for space heat and the generation of energy in Alaska's Native villages. The current cost of electrical power in the villages is on an average of \$0.50 per kilowatt hour. If hydrate gas can be produced it will be possible to utilize fuel cells or other power generating technology to reduce this cost while providing power that can be utilized for home space heat, waste reformation, mineral and other natural resource development. Rural Alaska is a vast warehouse of natural resources just waiting for an economical energy resource to make them viable. By developing natural resources, much needed jobs will be created.

I urge the committee to support H.R. 1753 and S 330, "Methane Hydrate Research and Development Act of 1999."

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