Natural gas supplies could be augmented with methane hydrate

EurekAlert

WASHINGTON ? Naturally occurring methane hydrate may represent an enormous source of methane, the main component of natural gas, and could ultimately augment conventional natural gas supplies, says a new congressionally mandated report from the National Research Council. Although a number of challenges require attention before commercial production can be realized, no technical challenges have been identified as insurmountable. Moreover, the U.S. Department of Energy's Methane Hydrate Research and Development Program has made considerable progress in the past five years toward understanding and developing methane hydrate as a possible energy resource.

"DOE's program and programs in the national and international research community provide increasing confidence from a technical standpoint that some commercial production of methane from methane hydrate could be achieved in the United States before 2025," said Charles Paull, chair of the committee that wrote the report, and senior scientist, Monterey Bay Aquarium Research Institute in California. "With global energy demand projected to increase, unconventional resources such as methane hydrate become important to consider as part of the future U.S. energy portfolio and could help provide more energy security for the United States."

Methane hydrate, a solid composed of methane and water, occurs in abundance on the world's continental margins and in permafrost regions, such as in the Gulf of Mexico and Alaska's North Slope. Although the total global volume of methane in methane hydrate is still debated, estimates yield figures that are significant compared with the global supplies of conventional natural gas. The existence of such a large and untapped energy resource has provided a strong global incentive to determine how methane might be produced from methane hydrate safely, economically, and in an environmentally sensible way.

Some of the remaining challenges to production identified by the committee include developing the technology necessary to produce methane from methane hydrate and understanding methane hydrate's potential to behave as a geohazard. For example, industry practice is to avoid methane-hydrate bearing areas during drilling for conventional oil and gas resources for safety reasons. However, avoidance will not be possible if methane hydrate is the production target. In addition, the committee recommended research and development areas for DOE's program, such as designing production tests, appraising and mitigating environmental issues related to production, and determining with greater accuracy the methane hydrate resources on the Alaska North Slope and in marine reservoirs.

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