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**Assessing the promise of natural gas hydrates as an unconventional source of energy**

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Gas hydrates are a naturally occurring “ice-like” combination of natural gas and water that have the potential to provide an immense resource of natural gas from the world’s oceans and polar regions. The amount of natural gas contained in the world’s gas hydrate accumulations is enormous, but these estimates are speculative and range over three orders-of-magnitude from about 2,800 to 8,000,000 trillion cubic meters of gas. By comparison, conventional natural gas accumulations (reserves and technically recoverable undiscovered resources) for the world are estimated at approximately 440 trillion cubic meters as reported in the “U.S. Geological Survey 2000 World Petroleum Assessment.” Despite the enormous range in reported gas hydrate volumetric estimates, even the lowest reported estimates seem to indicate that gas hydrates are a much greater resource of natural gas than conventional accumulations. However, it is important to note that none of these assessments has predicted how much gas could actually be produced from the world’s gas hydrate accumulations. Proposed methods of gas recovery from hydrates generally deal with dissociating or “melting” in-situ gas hydrates by heating the reservoir beyond the temperature of hydrate formation, or decreasing the reservoir pressure below hydrate equilibrium. Computer models have been developed to evaluate natural gas production from hydrates by both heating and depressurization. Depressurization is considered to be the most economically promising method for the production of natural gas from gas hydrates. Estimates vary on when gas hydrate production will play a significant role in the total world energy mix; however, it is possible that hydrates will be able to provide a sustainable supply of gas for the world’s future energy needs.