



An Investigation into Gas Production from Methane Hydrate

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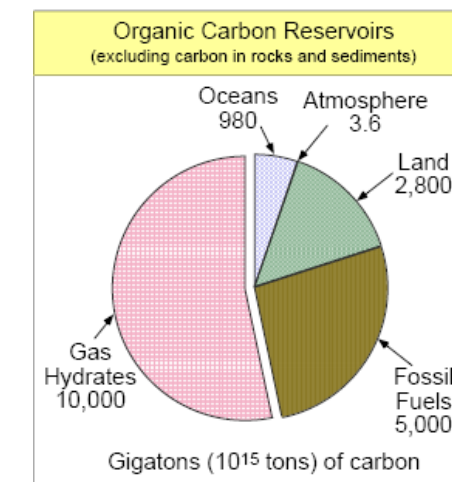
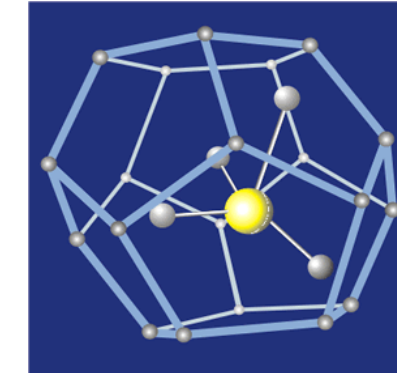
Introduction



Methane hydrate is formed when water molecules freeze around a molecule of methane gas.

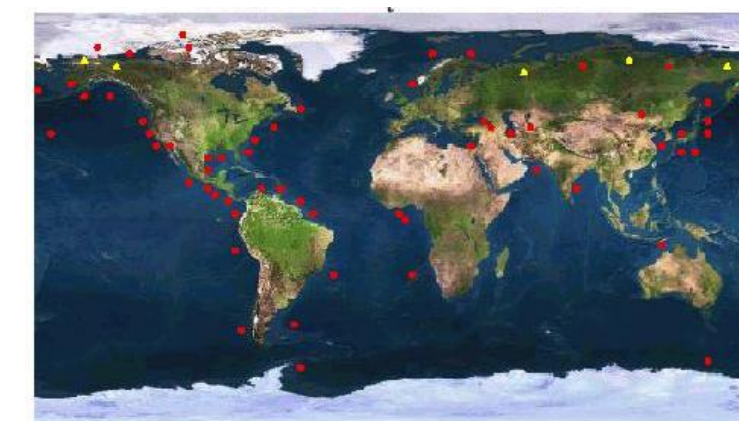
The amount of energy stored in natural gas hydrates is significantly more than that of all the other fossil fuels combined.

The locations of hydrates have been recorded in marine and permafrost environments throughout the world.



Survey, U.S.G., 2003 <http://pubs.usgs.gov/of/gas-hydrates/>

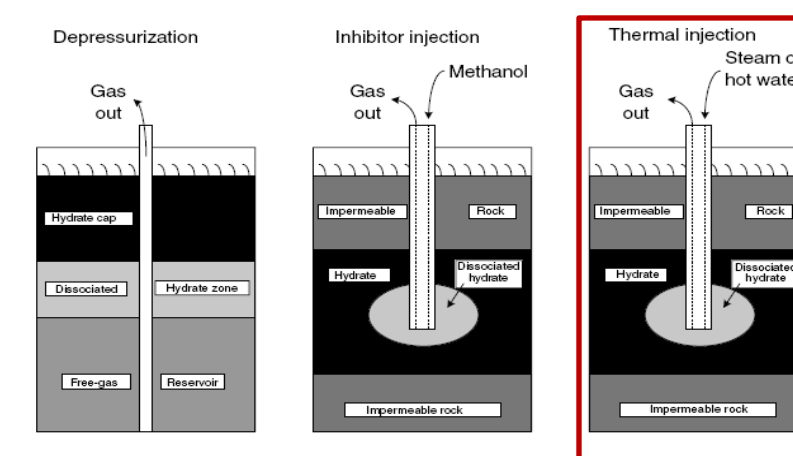
- Increasing global energy demand
- Hydrate research is moving towards production
- No identified efficient method
- Expensive Field test
- Need more production test data



Worldwide distribution of confirmed or inferred offshore gas hydrate-bearing sediments, USGS Report 96-272, [1]

Objectives

- Design and build large scale experimental test apparatus.
- Experimental investigation of the production methods.
 - Depressurization
 - Chemical stimulation
 - Thermal stimulation [1]
- FEM coupled Mathematic model of methane gas production.



New Thermal Stimulation Approach: Point Heat Source

