

Potential Industry Applications Using Gas Hydrate Technology

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(Received 25 June 2012; Revised 24 August 2012; Accepted 21 October 2012)

Abstract: Over the past decades, gas hydrates have stimulated significant interest and triggered fundamental research. Primarily, the focus has been on hydrate blockage in pipelines, and on naturally occurring gas hydrates. However, gas hydrates can be useful in many different ways that can be pertinent to our industry, thanks to their unique structural packing where only certain molecules can enter the gas hydrate cavities. Among the several potential uses of gas hydrate technology are gas separation, transportation and storage of natural gas, desalination, and carbon dioxide disposal. In particular, it is possible to (i) separate the heavier components (pentane and higher) from natural gas, and (ii) capture, store and transport natural gas. This paper proposes a workflow for capturing, storing and transporting gas in the hydrate form, particularly for situations where there are infrastructural constraints such as lack of pipelines. These applications of gas hydrate technology can have potential benefits to the oil and gas industry.

Keywords: Natural Gas Capture Storage Transportation Hydrate