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## **ABSTRACT AND PROPOSAL TO PRESENT**

### **27th IAEE Annual International Conference—Tehran**

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**Suggested Sessions:** Oil & Natural Gas

Technology & Energy Efficiency

Environmental Issues

New Technologies in Energy

New Technologies in Transportation

**Title:** “The Use of Natural Gas Hydrates in Transportation: Recent Advances, Economics, Prospects”

#### **Abstract**

Much of the effort related to natural gas continues to be in the area of efficient storage and cost-effective transportation from the field to the consuming regions. Two of the principle methods currently in commercial use—LNG and GTL—physically and chemically reduce the volume of natural gas in order to reduce storage and transportation costs.

A new area of study involves natural gas hydrates. Hydrates—solid crystals of methane—have long been known as a problem during production and transportation operations in the field as they tend to contribute to pipeline plugging. Only in the past decade their potential in storage and transportation has been examined. It is known that, due to the physical characteristics of hydrates, vast amounts of natural gas methane can be stored and transported in the form of these solid crystals with densities hundreds of times higher than in the gas phase with significantly easier handling.

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Additionally, enormous quantities of hydrates have recently been found in a number of reservoirs with worldwide deposits estimated at 20,000 trillion cubic meters and so significant attention is being paid to hydrates as not only a mode of transportation, but also a new, untapped, source of natural gas for the future.

In this paper, the technical background related to hydrates will be briefly reviewed, the R&D status will be discussed, and various issues related to commercialization and economic potential of utilizing natural gas hydrates in commercial transportation will be examined.