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Natural gas transportation in form of hydrate

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Abstract: Traditionally, natural gas is transported by pipelines or by ships as liquefied natural gas (LNG). Because of large costs of liquefaction plants and carriers for natural gas, LNG transportation system has been applied only to very large gas fields. For meeting the increasing demand and stable supply of natural gas, small and medium size gas fields need to be utilized. To enable the utilization of small and medium size gas fields, it is necessary to develop another transportation system for natural gas, with lower initial costs.

Gas hydrate is a crystalline solid which consists of gas molecules each surrounded by a cage of water molecules. Use of gas-hydrates for transportation of natural gas was first proposed by Gudmundsson et al. (Norway) in 1996. The temperature of natural gas hydrate (NGH) through transportation remains higher than that of liquefied natural gas (LNG), and accordingly, transportation of NGH is expectably more flexible in terms of its facilities and equipments. NGH can be a medium for natural gas transportation for comparatively small gas fields to which LNG transportation system is not economically applicable.

The development of the NGH transportation system started in year 2001. This paper outlines the system and results of current study.

Key words: [NGH](#), [pellet](#), [natural gas transportation](#), [economy](#)

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