

Process Design of Methane Hydrate Decomposition Connected with LNG Receiving Terminal

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Due to increasing demand, geopolitical risks, and concerns about naval accidents including terrorisms, it is needed to develop various means of transporting natural gas (NG) which is economical and safe. Recently issued paper was written that natural gas hydrate (NGH) chain is better than LNG chain by 18-25% in total cost including capital and operational cost and 6-14% in energy requirement when transporting less than one or two million ton of NG for less than 3500 nautical miles in one way voyage between terminals. Since NGH chain is only accepted in small or medium scale and within 3500 nautical miles, and NGH decomposition process is batch system, NGH decomposition process alone cannot meet the demand and get economic feasibility. So in this research, methane hydrate decomposition process connected to LNG receiving terminal will be discussed. Decomposed methane hydrate was entered LNG chain, such as LNG storage tank or BOG streams or recondenser. After that, economic feasibility would be estimated on each part. It is expected that small or medium scale gas field could be developed and measures of transporting NG could be diversified.