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Marine CNG - Why Hasn't It Happened?

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Abstract

Marine Compressed Natural Gas (CNG) is a technology that has evolved to a point where technical challenges no longer pose a hurdle to project development. The Class Societies have provided guidance and rules that allow for ship construction, and the proponents have completed the testing and certification required in advance of final project definition.

In the recent past at a time of high energy prices, the question on the lips of many interested industry observers is “Why have we not yet seen a Marine CNG project?”

This paper will examine the state of the industry and outline the reasons that this technology has not yet seen a final project approval. We will provide a brief description of the proponents’ current readiness, describing any additional technical hurdles that apply to particular technologies as well as industry wide barriers. In addition, we will focus on many of the projects that have examined marine CNG and the reasons why these projects have not yet proceeded.

The Centre has found that the following key issues have hampered Marine CNG development:

- **Target Market** – Marine CNG has never been a solution for large scale export for natural gas, yet many gas owners have contrasted this technology against its gas transport cousin, LNG. Many initial projects examined marine CNG as a solution to transport large volumes of gas over medium to long distances. Marine CNG’s niche remains in regional transport, where gas market dynamics are far removed from LNG solutions.
- **Human Resource Availability** – The boom of natural gas development has seen many new (and proposed) gas delivery solutions. With so many projects on the drawing board, human resource availability is at a premium. It was inevitable that the international oil companies were going to deploy their human resources where the project scale was at its maximum. Smaller developments like marine CNG have suffered accordingly.
- **Unclear Economics** – Marine CNG has suffered from a lack of transparency on project cost. Other gas delivery solutions have accepted economic ranges that can quickly be applied to different project scenarios. Questions surrounding capital and operational costs and the resulting tariff structure are not readily available to the industry. In a time where gas supply agreements are becoming more and more challenging, the economics of Marine CNG must be clear.
- **Fragmented Industry** - When any of the technology proponents gets a contract, the industry wins. While there are advantages to being the first or early entrant, this does not preclude competition from achieving similar success. Any contract would be an endorsement of the industry as a whole and increases the probability of others succeeding. As Charles Darwin stated, it is not the strongest or quickest that survive. It is the ones most adaptive to change. The marine CNG industry needs to concentrate on making a project happen based on the merits of their own technology.

The Centre for Marine CNG has spent considerable effort examining the challenges for this unique technology. There continue to be niche applications where Marine CNG is the optimal economic and technical solution for gas development, which we will provide.

Introduction

Marine CNG has been identified as a niche technology that will complement both LNG and pipeline technologies for stranded gas monetization. One of the major benefits for CNG is the minimal fixed capital assets for resource exploitation. In comparison to LNG, there is no requirement for liquefaction and regassification terminals, with the added benefit of a mobile asset (the CNG vessel) that can be redeployed, depending on gas supply agreements, seasonality and/or life of field.