

Foreword

## My natural gas bias

In my opinion, an editor ought to inform his readers of his biases regarding the subject material of the publication he is editing. This is particularly true for a special issue where the authors are based, not upon self-selection, but rather the invitations of the editor. Therefore, let me clearly state my bias. I am a natural gas enthusiast. My home is heated by natural gas. If the technological infrastructure existed, I would have my automobile powered by it. With the threat of global warming due to greenhouse gases looming over the world, natural gas can provide a transition fuel between traditional high-carbon fossil fuels and hydrogen (or other energy alternatives) future.

Unfortunately, geographical barriers separate the users of natural gas from the producers. It is not feasible to run a pipeline from Qatar, with the world's largest natural gas field, to the United States, the largest consumer nation. One solution, made more economically attractive by gas price increases, is to liquefy the gas at the producer end, ship it by specialized vessels to the user nation, and re-gasify the product for transport in existing pipelines.

The safety record for such liquefied natural gas (LNG) is an admirable one. According to the United States Federal Energy Regulatory Commission (FERC), in the past 40 years there have been more than 33,000 LNG ship voyages without a significant accident or cargo security breach. However, the number of proposed re-gasification terminals before FERC for approval exceeds by an order of magnitude the number of existing terminals. Moreover, the post 9/11 environment requires that we not only consider the consequences of accidental releases but also deliberate terrorist attack on the LNG supply.

Several governmental agencies, led by FERC and the Coast Guard, have or are conducting thorough reviews of the proposed LNG terminal expansions. However, many of the available background studies related to LNG releases were done more

than thirty years ago. This suggests that the scientific and engineering community needs to also increase its effort in this field to match the renewed interest by industry and regulators. Hence, the production of this special issue of the Journal, dedicated to the scientific analysis of LNG releases and their consequences.

Since the earlier LNG work still has much that is worth studying, this special issue includes review articles by those who can only be labeled as giants in the field. Supplementing these articles is original research by both new researchers and well-recognized experts. Do not expect to find complete agreement amongst all the authors. Due to limitations on the available experimental data, there remain points about LNG behavior that are controversial. It was the editor's decision to publish the controversy and hope that future, badly needed, large-scale experiments can provide definitive answers. In the meantime, I hope that the reader will get a taste from these papers of the many interesting scientific questions that make LNG research so exciting today.

This editorial reflects the views of the author, and does not necessarily reflect the official positions or policies of the National Oceanic and Atmospheric Administration of the Department of Commerce.

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