

# Modelling and simulations of hydrogen flow in a maritime fuel cell system

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## **Introduction and background:**

Hydrogen used together with a fuel cell system is a promising technology for reducing emissions. In order to reduce the emissions in the maritime industry, a maritime fuel cell system is a possible solution. Understanding of hydrogen's behavior due to a leak or change in demand is needed for improved piping design and safety measures.

## **Problem description and objective:**

In this study a literature review of maritime fuel gas systems, with a focus on fuel-storage and supply systems will be performed, leading to a suggested design of a maritime hydrogen fuel supply piping system.

A transient one-dimensional pipeline flow model will be developed. The model will also consider the effects of a sudden leak in the system.

For the model development a literature review of relevant Equations of State for the gas pipeline flow will be performed.



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