



# Linde Engineering LH2 Fueling Solutions

Nabeel Hakemi  
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Making our world more productive



# Hydrogen solutions | Production, Distribution, Fueling. Linde covers the full value chain



## Production & Storage



Conventional  
(e.g. SMR)



Renewable  
(e.g. Electrolysis)



Liquefaction

## Distribution



LH<sub>2</sub>  
Liquid Hydrogen



CGH<sub>2</sub>  
Compressed Gaseous  
Hydrogen



Onsite Electrolysis

## H<sub>2</sub> Fueling Stations



Cryopump

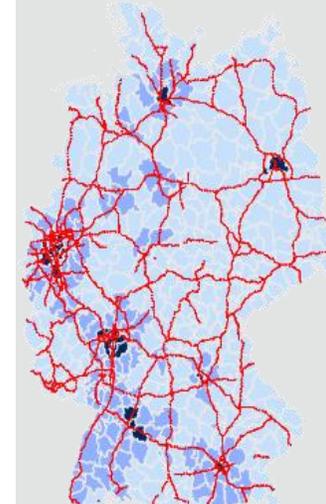


Ionic compressor

Boil-off mgmt.  
system

Dispenser

## Infrastructure & vehicles



## Case Study: MF Hydra

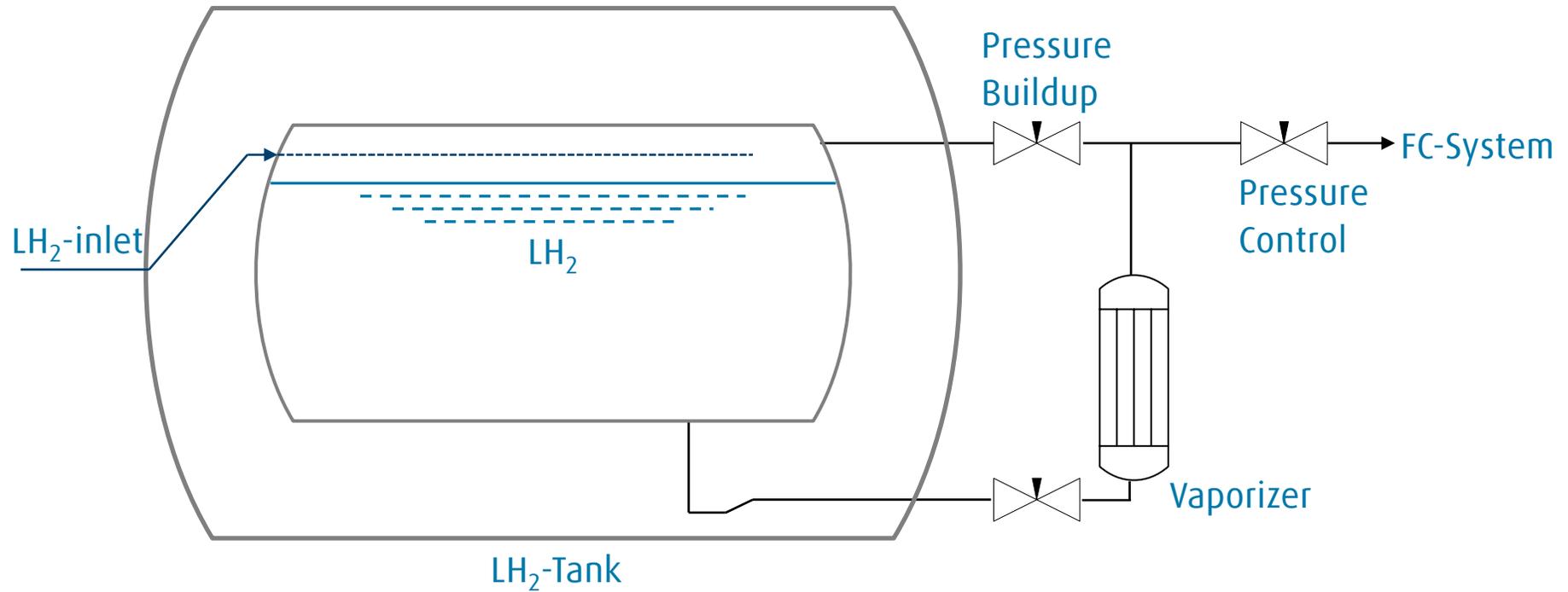


- Linde Engineering to carry out the: development, Engineering, Manufacturing, Installation and commissioning of Liquid Hydrogen Fuel System
- Linde Engineering Scope of delivery :
  - I. LH2 Tanks
  - II. Water Bath Vaporizer
  - III. Piping
  - IV. Bunkering System
- Experience with DNV requirements and approval process
- Linde Engineering can bring to the table its long years operational and safety expertise in the field of LH2



# Maritime Application.

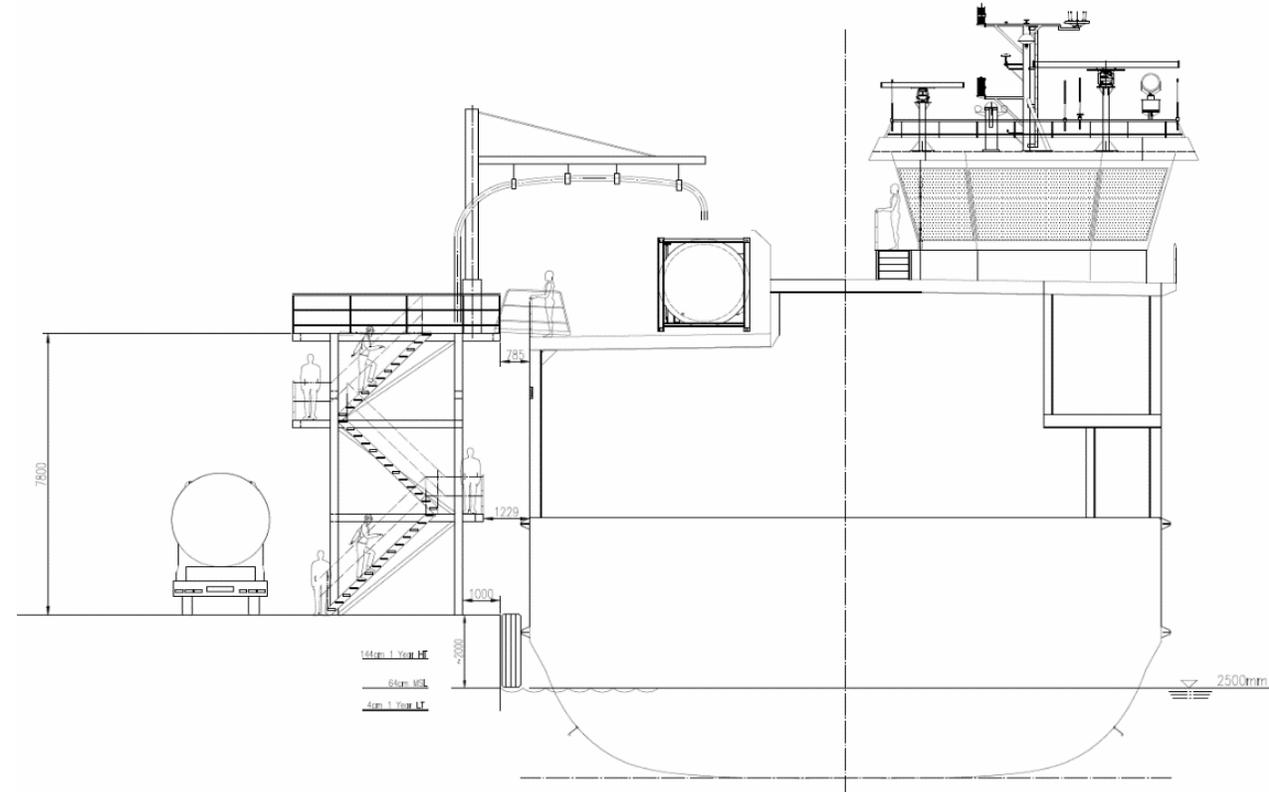
## LH<sub>2</sub> Onboard Solution – PFD



# Ships Bunkering and Refueling Solutions



- Linde Engineering special refueling procedure for maritime application: Quick Refueling
- Minimize or completely avoid GH2 losses/venting during refueling
- Achieve sufficient distribution of subcooled liquid during refueling, and condense vapor
- Usage of special cryogenic coupling (incl. Emergency release functionality)
- Pressure Cascade or pump driven bunkering







Think Hydrogen. Think Linde.