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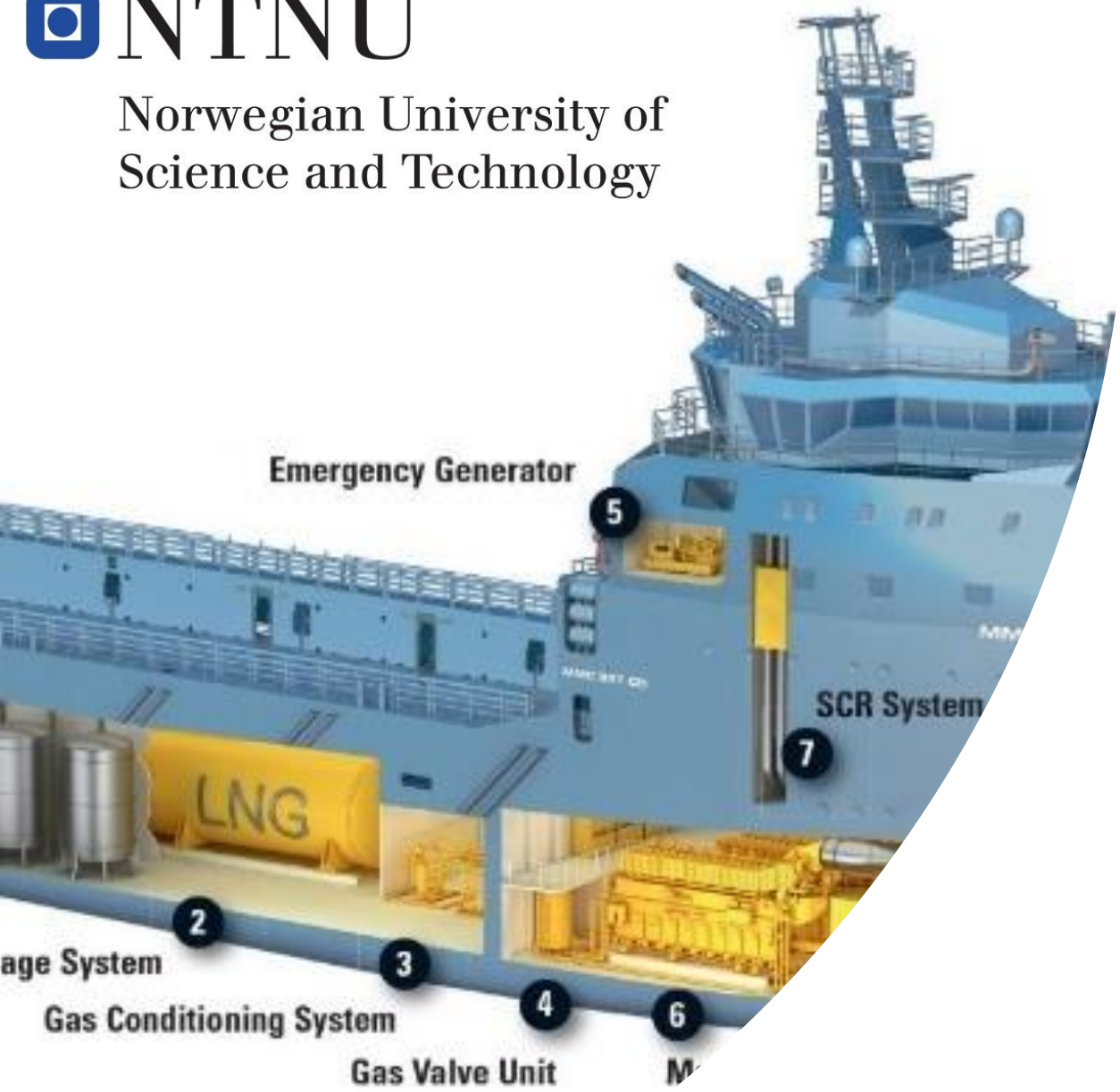

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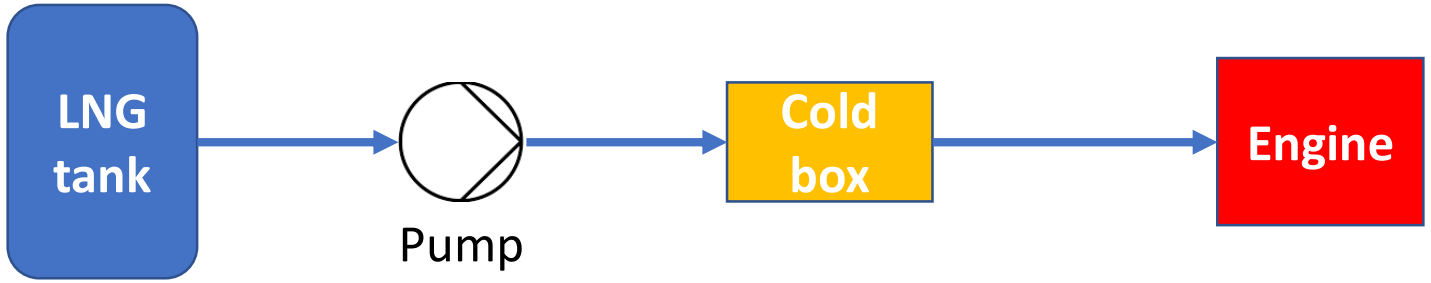
Utilization of cold from LNG driven fishing vessels

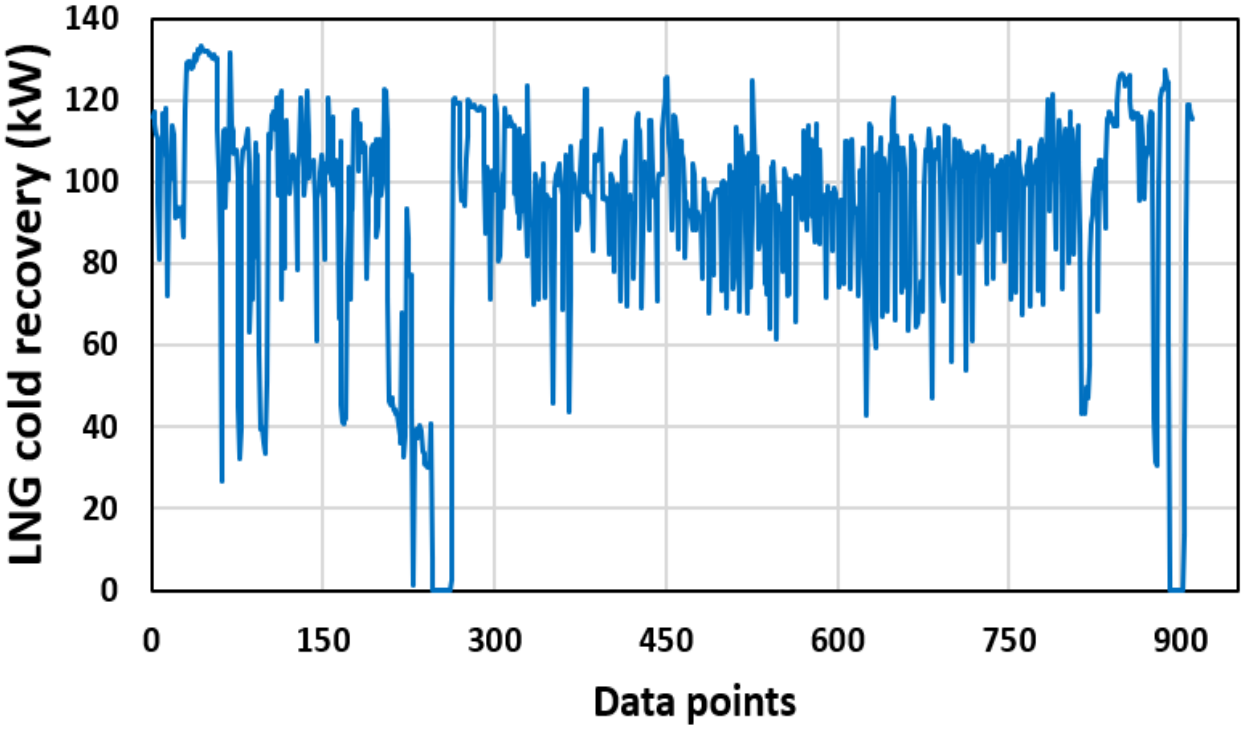
Muhammad Zahid Saeed (Master student, NTNU)

Contents

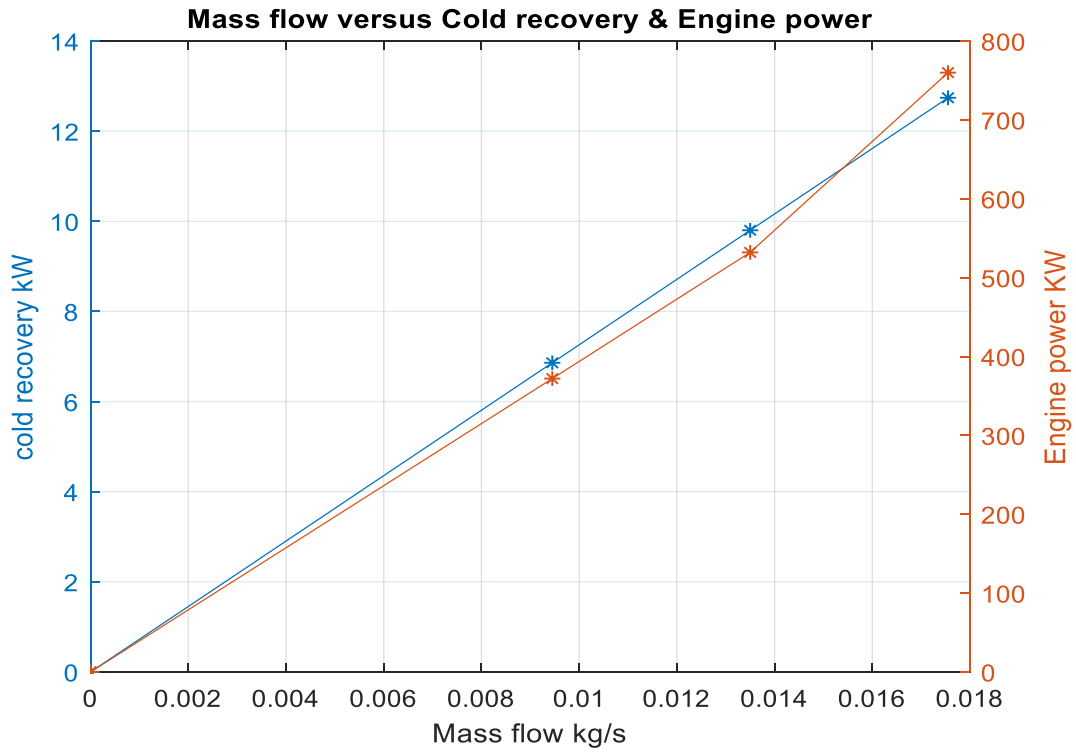
Cold recovery potential from LNG gasification

- LNG is stored in cryogenic tanks at 1 bar and -162 °C.
- Before use as fuel in engine, the liquid converts into gas in the cold box/vaporizer.
- The outlet temperature and pressure of gas from the cold box depends on the engine specifications.





- Estimated LNG cold recovery potential of 4.5 MW fishing vessel

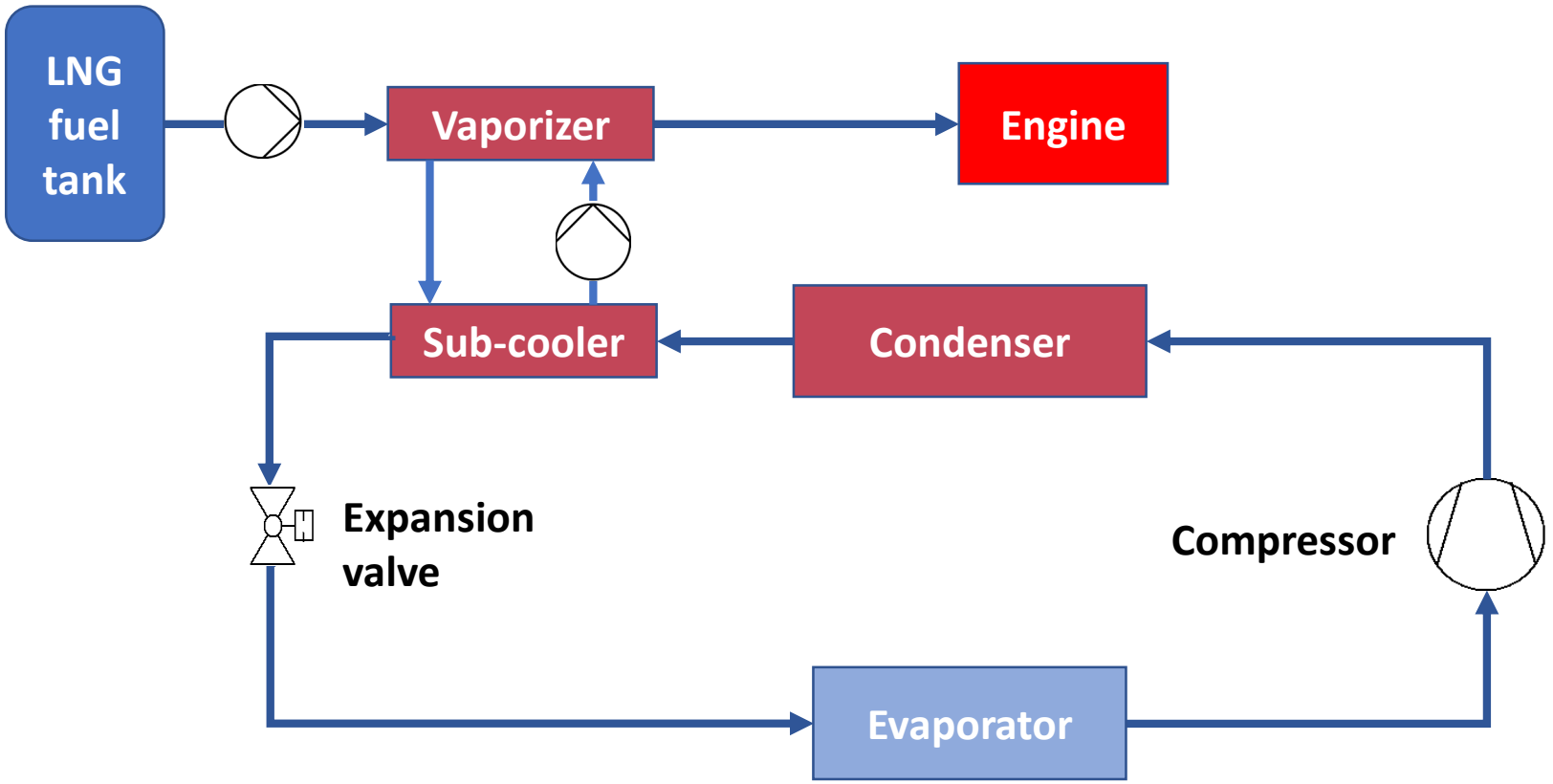


- Estimated LNG cold recovery potential of 760 kW fishing vessel

LNG cold applications

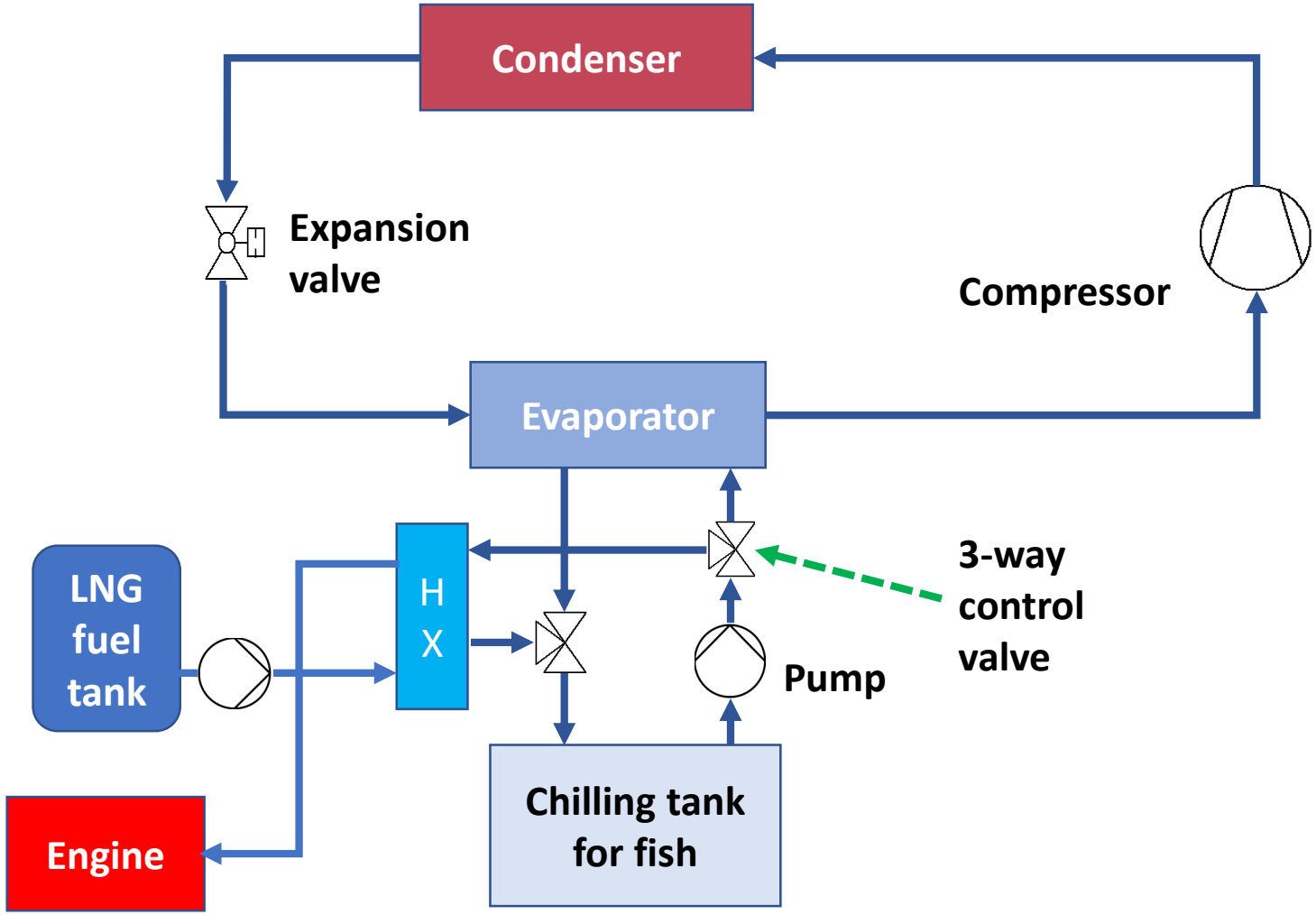
Sub-cooling of refrigerant

- Result is high coefficient of performance (COP) of refrigeration system or extra capacity



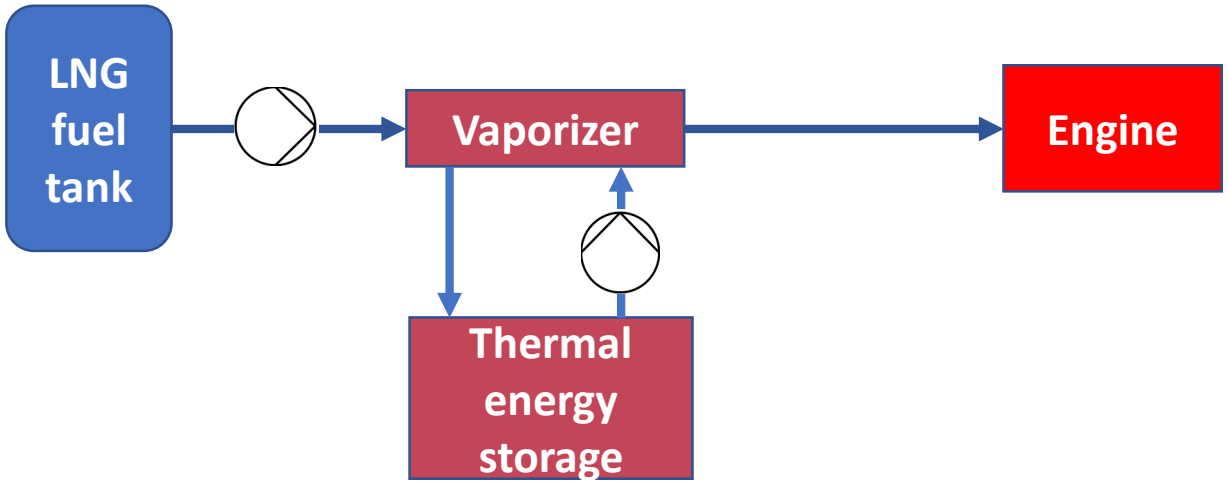
Cooling of chilling tank

- Boosting the refrigeration capacity.



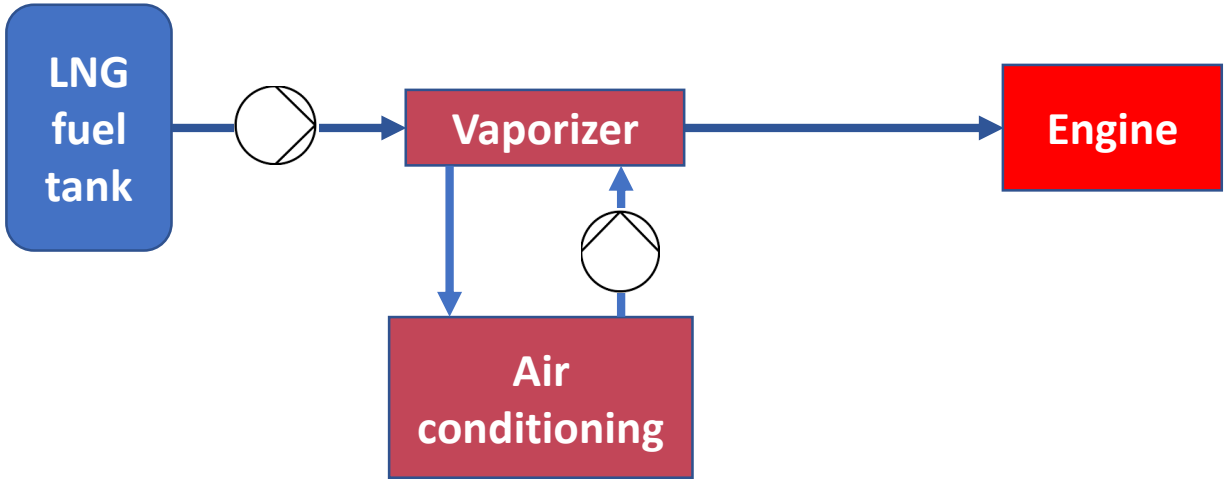
Thermal energy storage

- Thermal energy storage can either for chilling purpose or freezing.
- Easy to fully utilize the fluctuating LNG cold potential.



Air conditioning

- Air conditioning can be use for cooling in machinery room or for freezing storage room.



- It is possible to combine different applications in one vessel. However, it is entirely depend on the size and requirements of the vessel.

Reference

- Patent no. US 8,043,136 B2, https://patents.google.com/patent/US8043136B2/en
- Further calculations and results are in the author's conference paper in ICCC 2020 and Master thesis.

Thank you. Questions?