NTNU
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CoolFish

SINTEF

Utilization of cold from LNG driven fishing vessels

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Tekfisk.no

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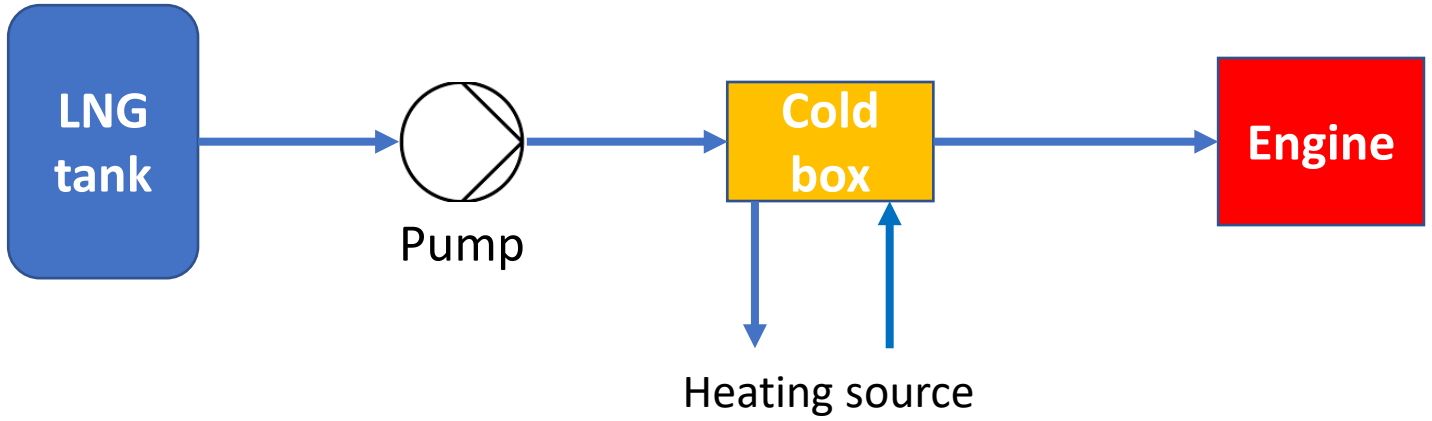
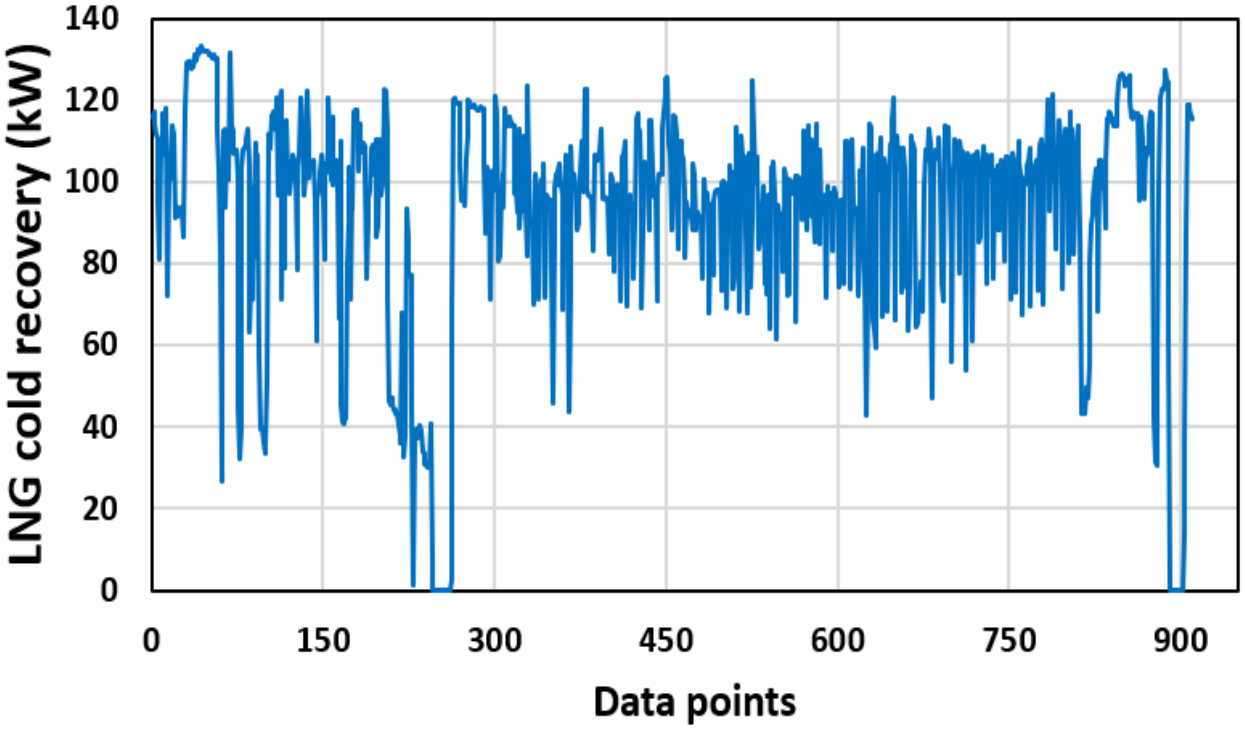
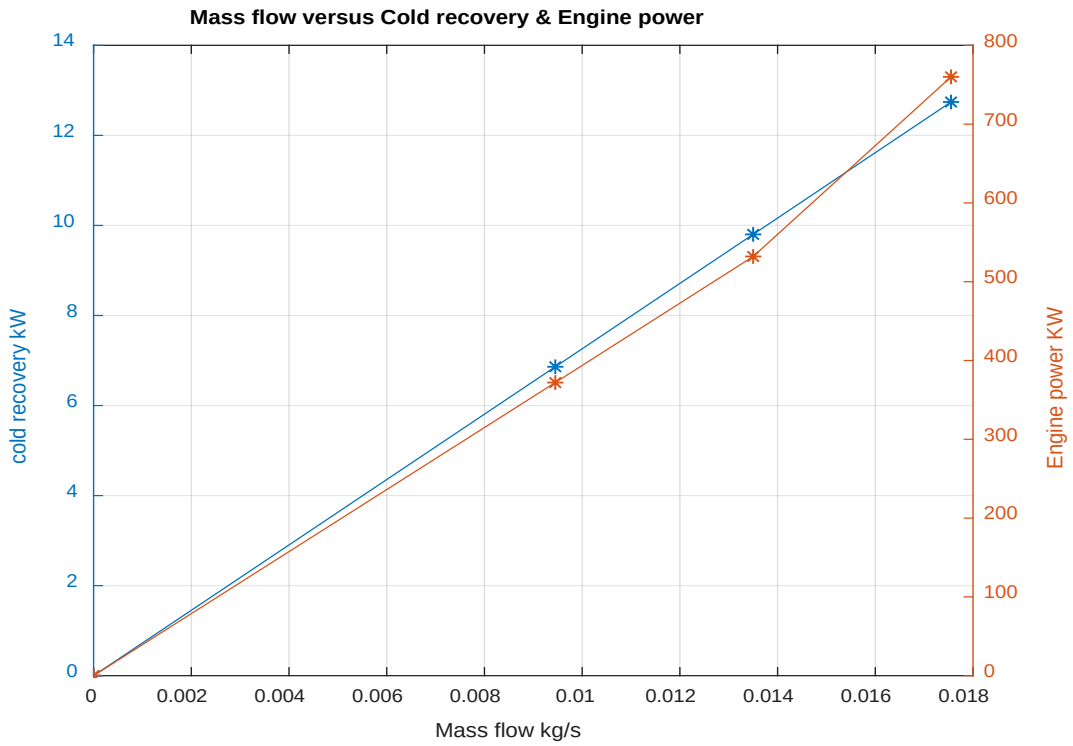
Cold recovery potential from LNG gasification

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





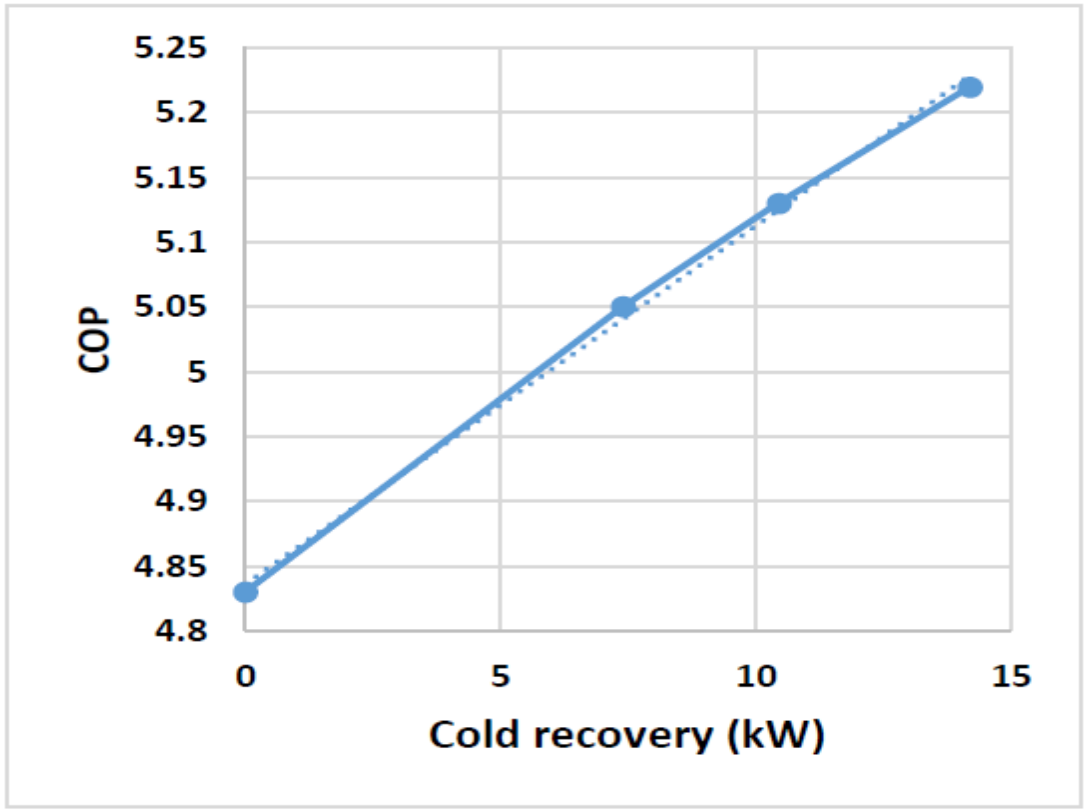
- Estimated LNG cold recovery potential of 4.5 MW fishing vessel

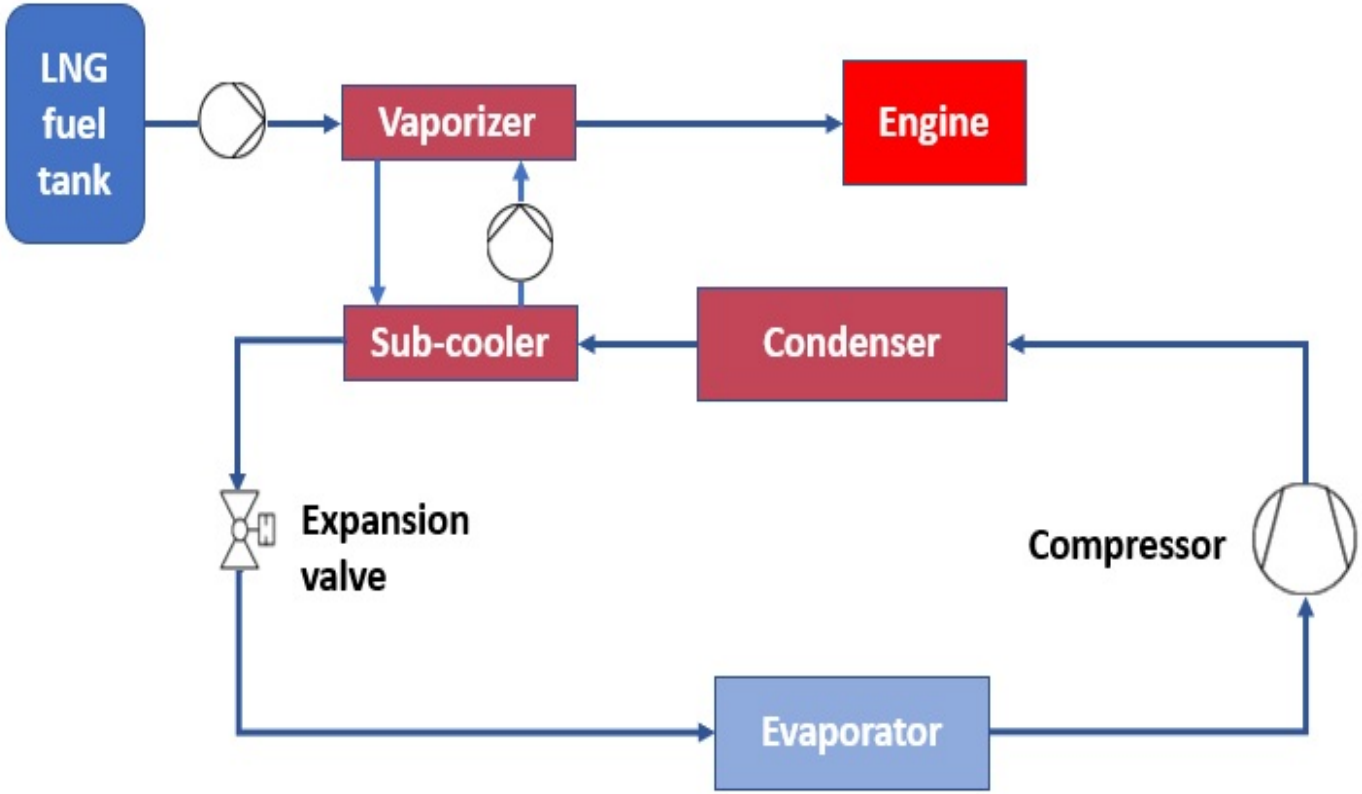


- Estimated LNG cold recovery potential of 760 kW fishing vessel

LNG cold applications

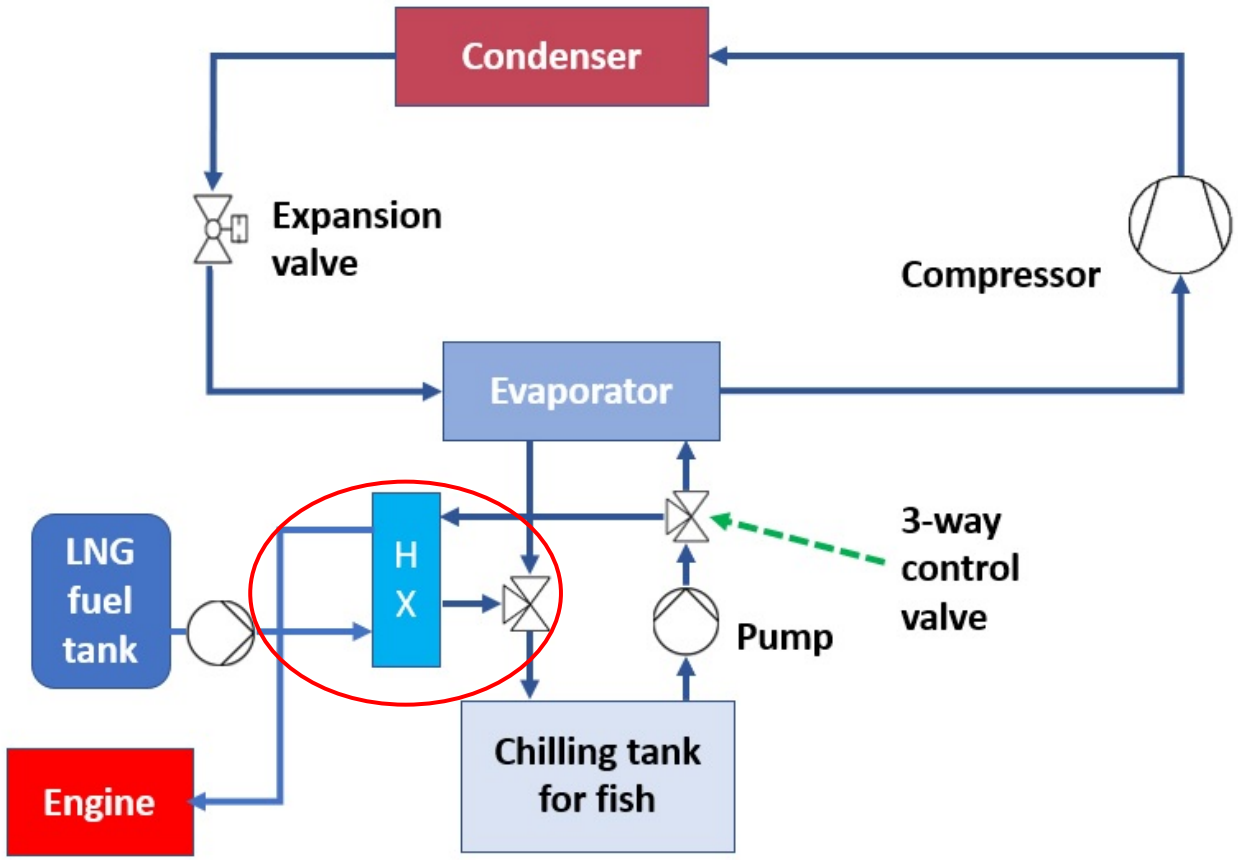
Sub-cooling of refrigerant



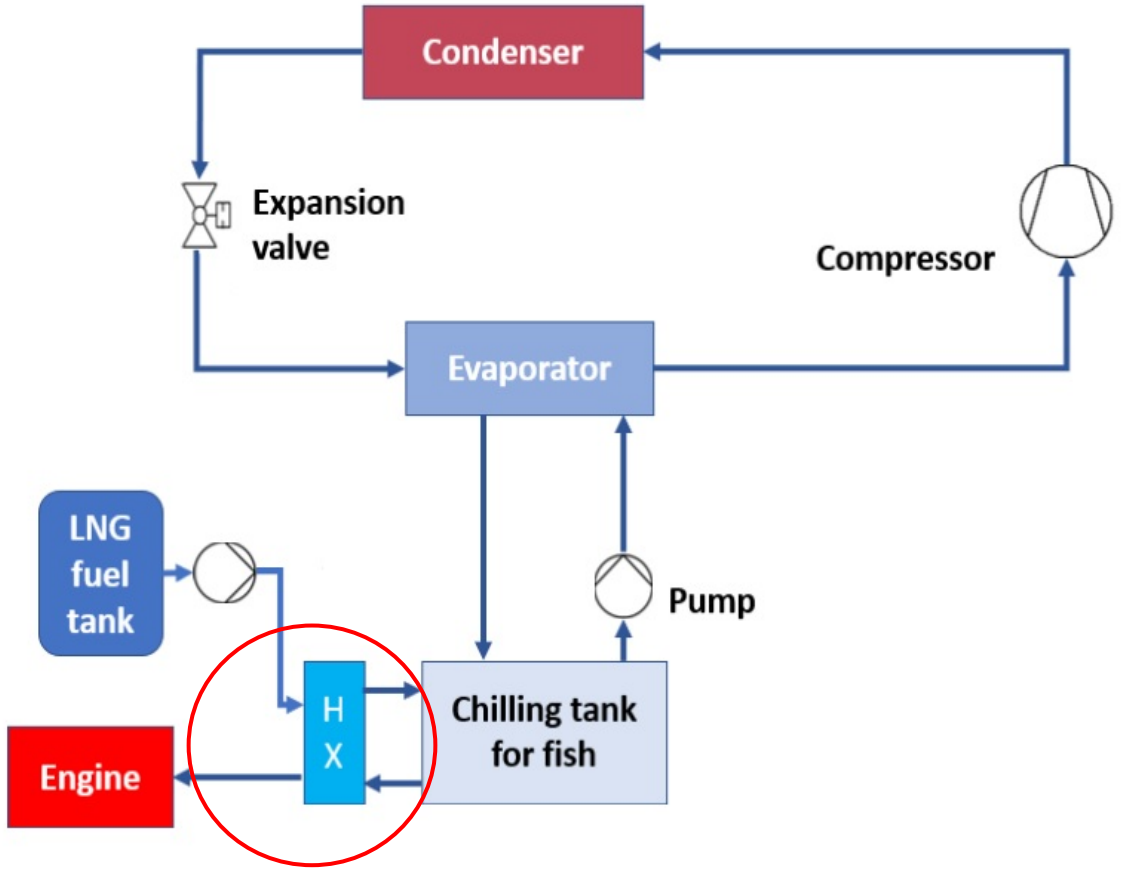


- Result is high coefficient of performance (COP) of refrigeration system or extra capacity.

Cooling of chilling tank



Design 1

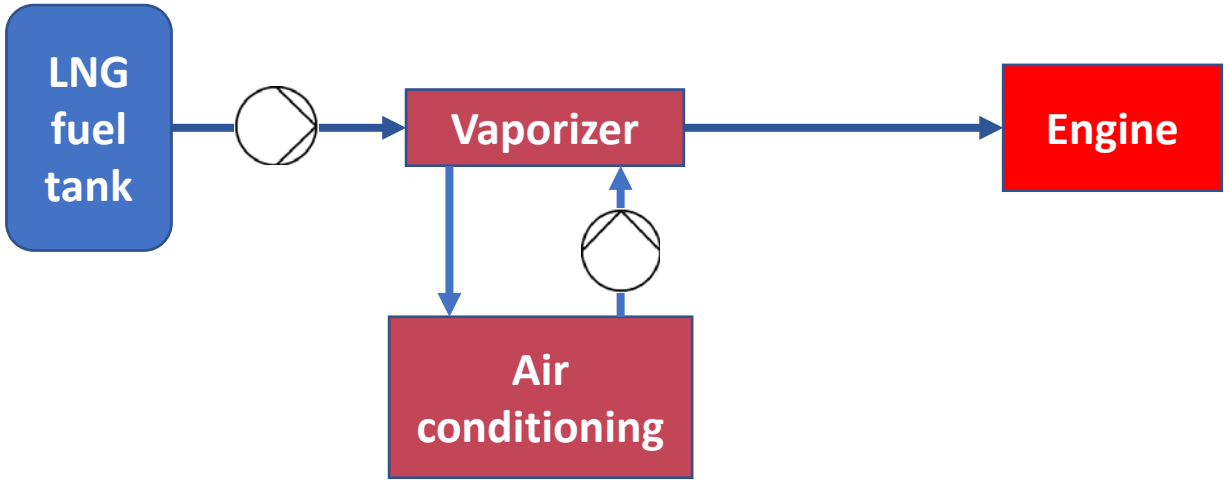


Design 2

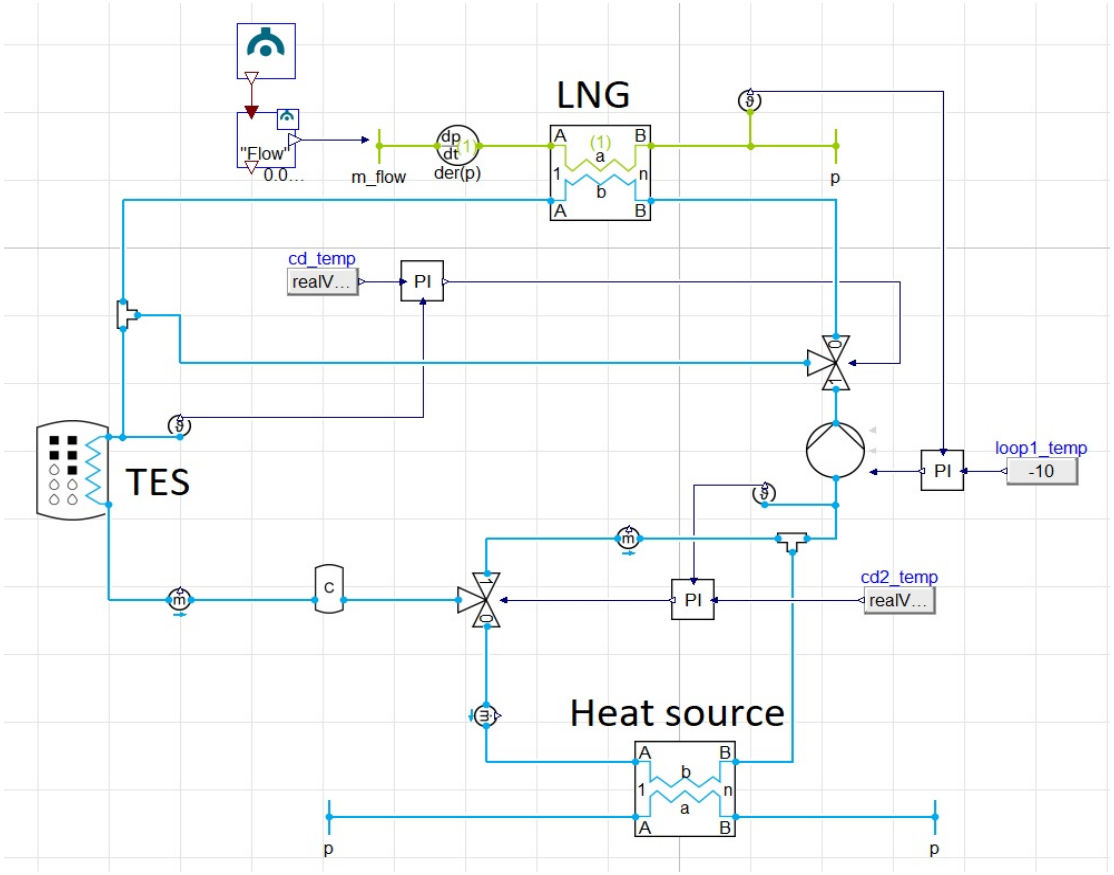
- Boosting the refrigeration capacity.

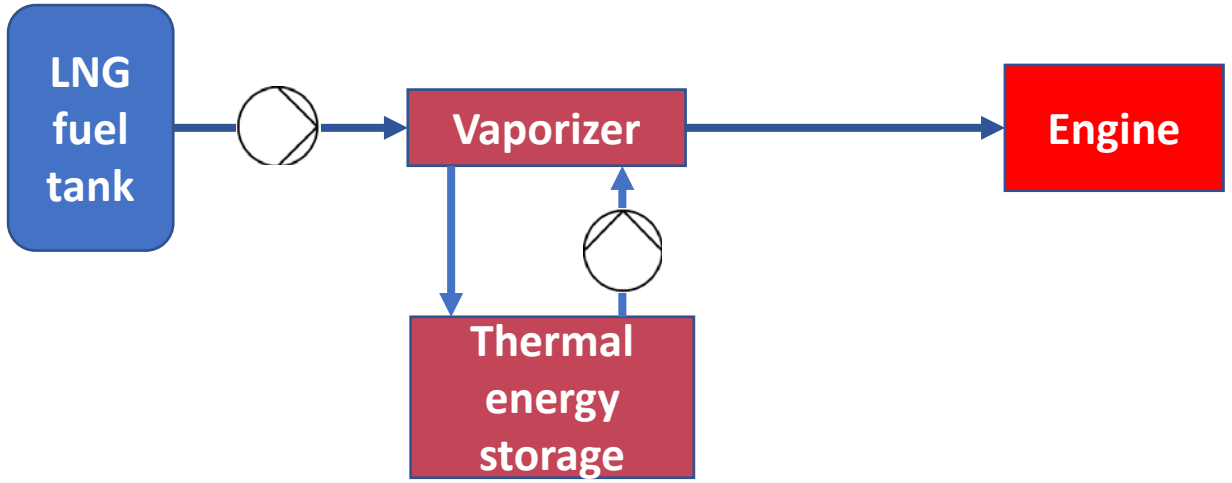
Air conditioning

- Onboard air conditioning demand is for control panels or electronic circuits and crew members.
- Ambient air is not an option for air conditioning due to moisture issues.
- This can also be used for freezing cargo storage or combination of both (cargo and control panels in bigger vessels).



Thermal energy storage





- Thermal energy storage can either for chilling purpose or freezing.

Thank you