



# WP5 – Modelling of the Cryohub system

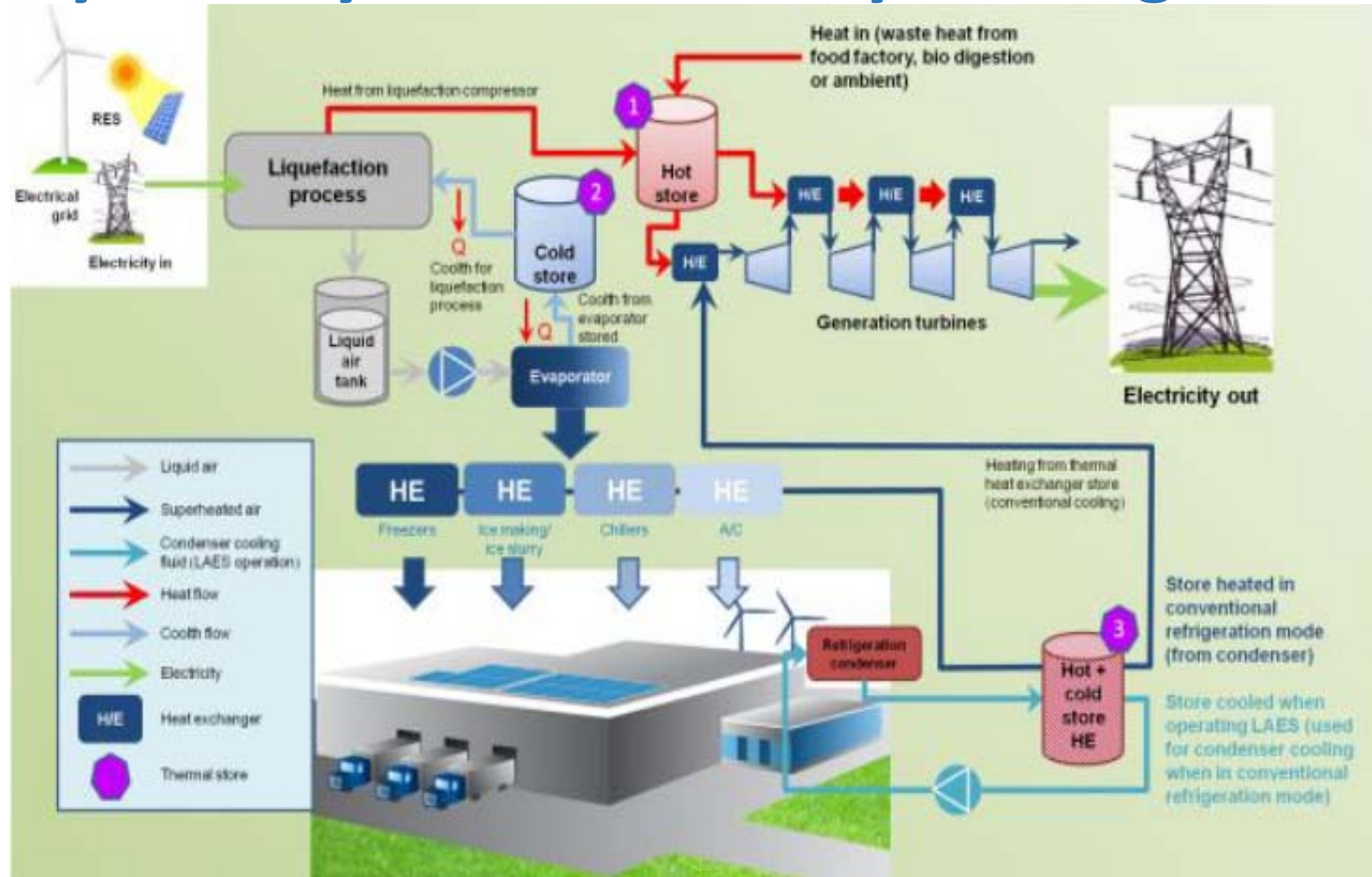
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Cryohub Online Workshop 17/03/2021

# Cryohub system as initially envisaged



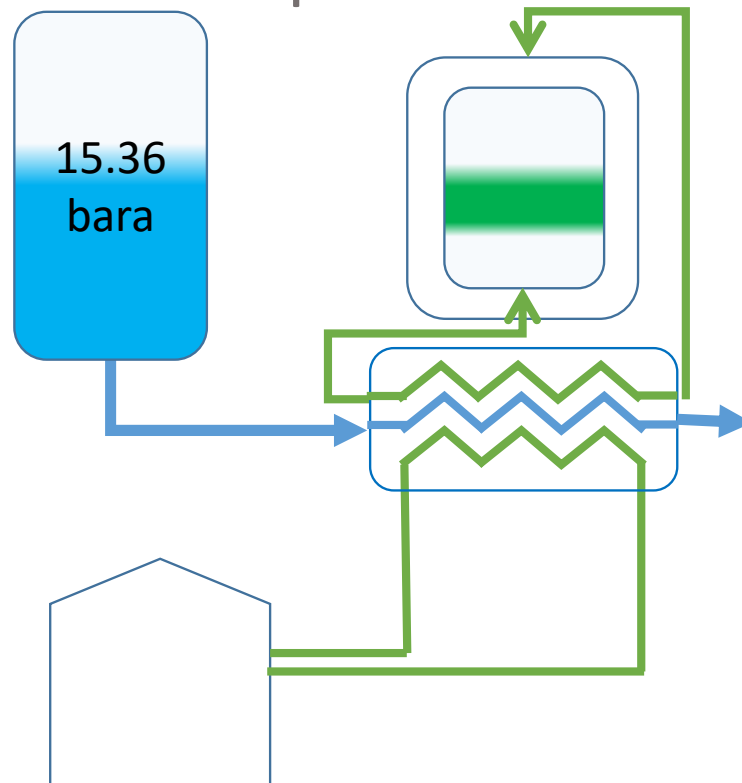
# Cryohub system as demonstrated (without a liquefactor)

- High pressure LIN storage 15.36 bara



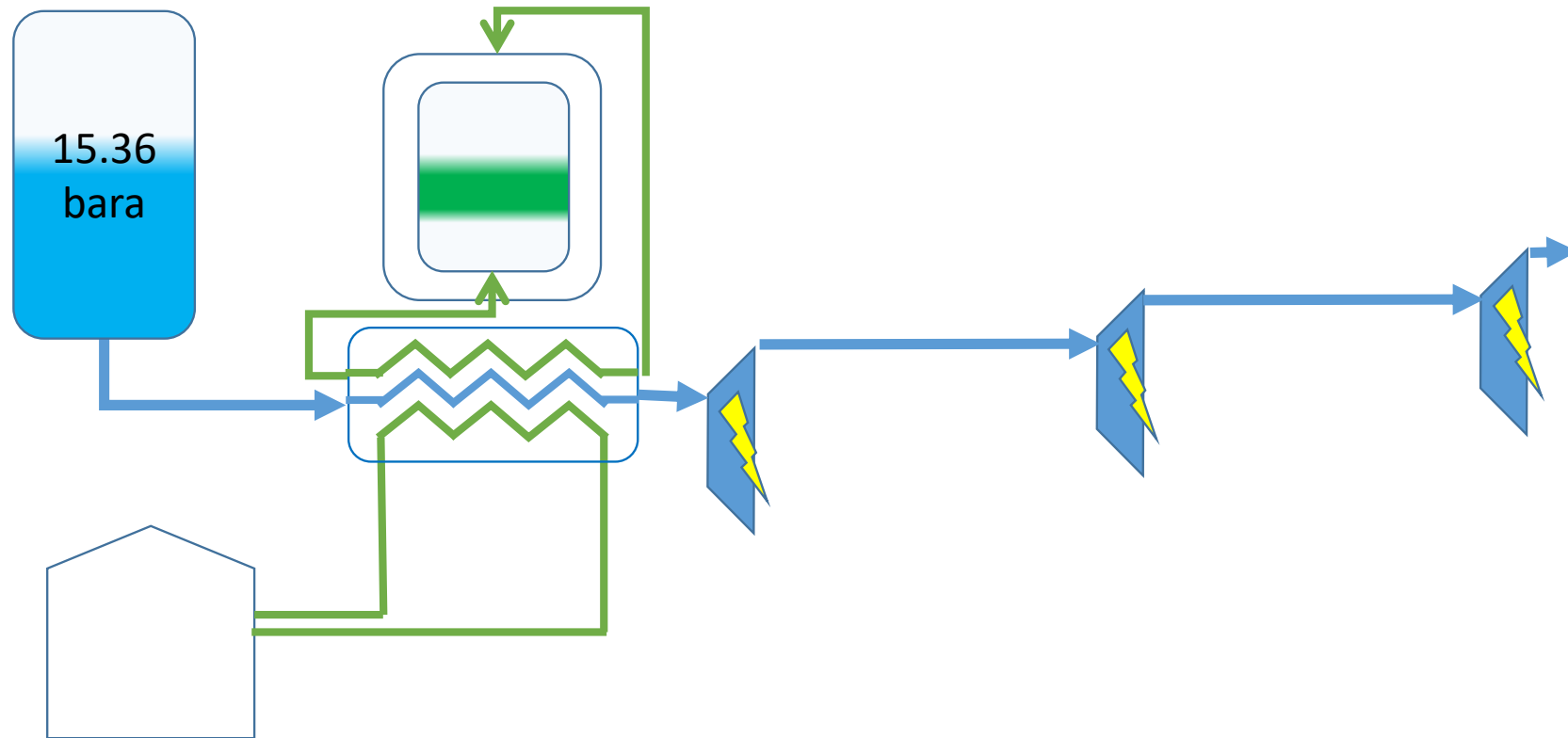
# Cryohub system as demonstrated (without a liquefactor)

- Cold Energy used in the cold store warehouse or stored if possible



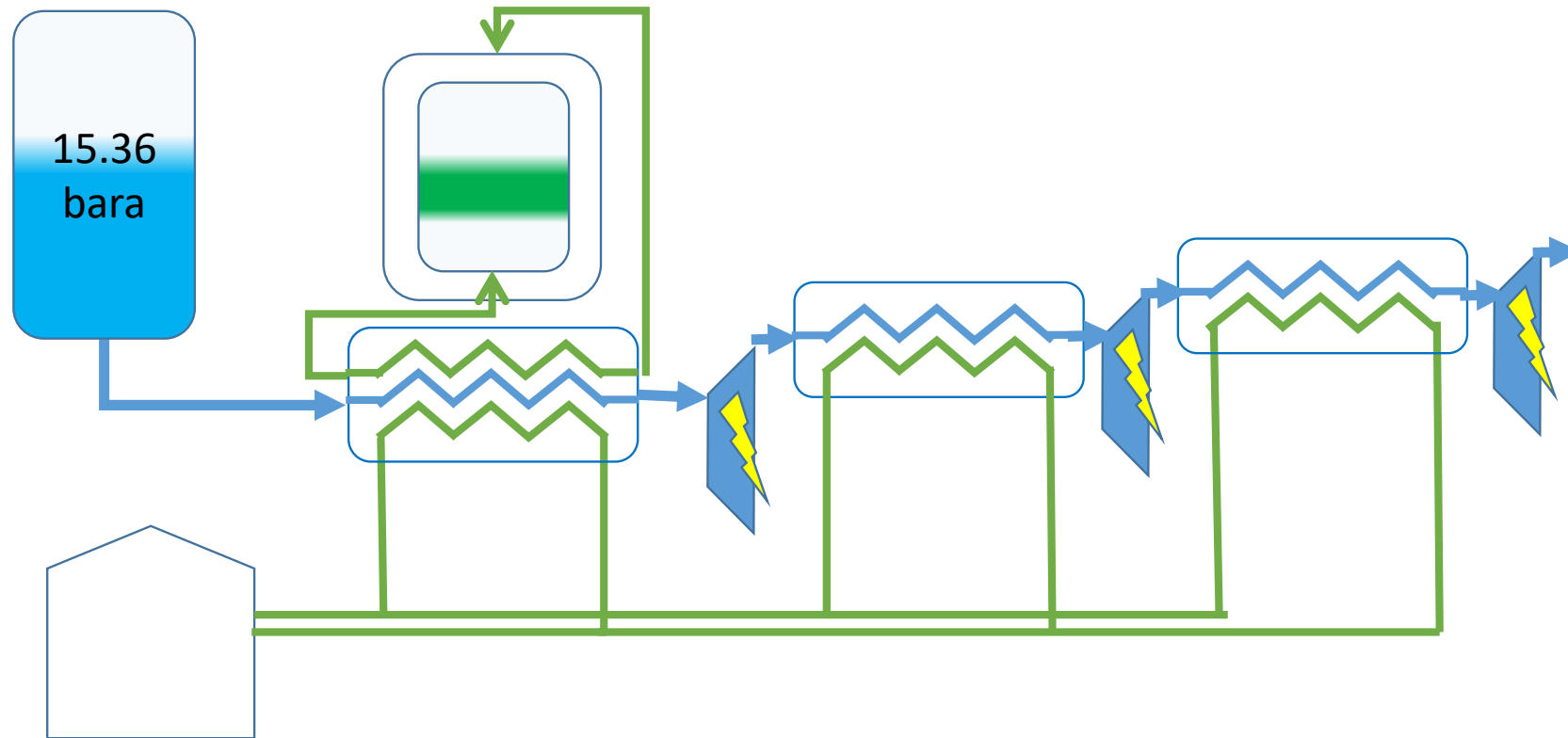
# Cryohub system as demonstrated (without a liquefactor)

- 3 stages of expansion after evaporation



# Cryohub system as demonstrated (without a liquefactor)

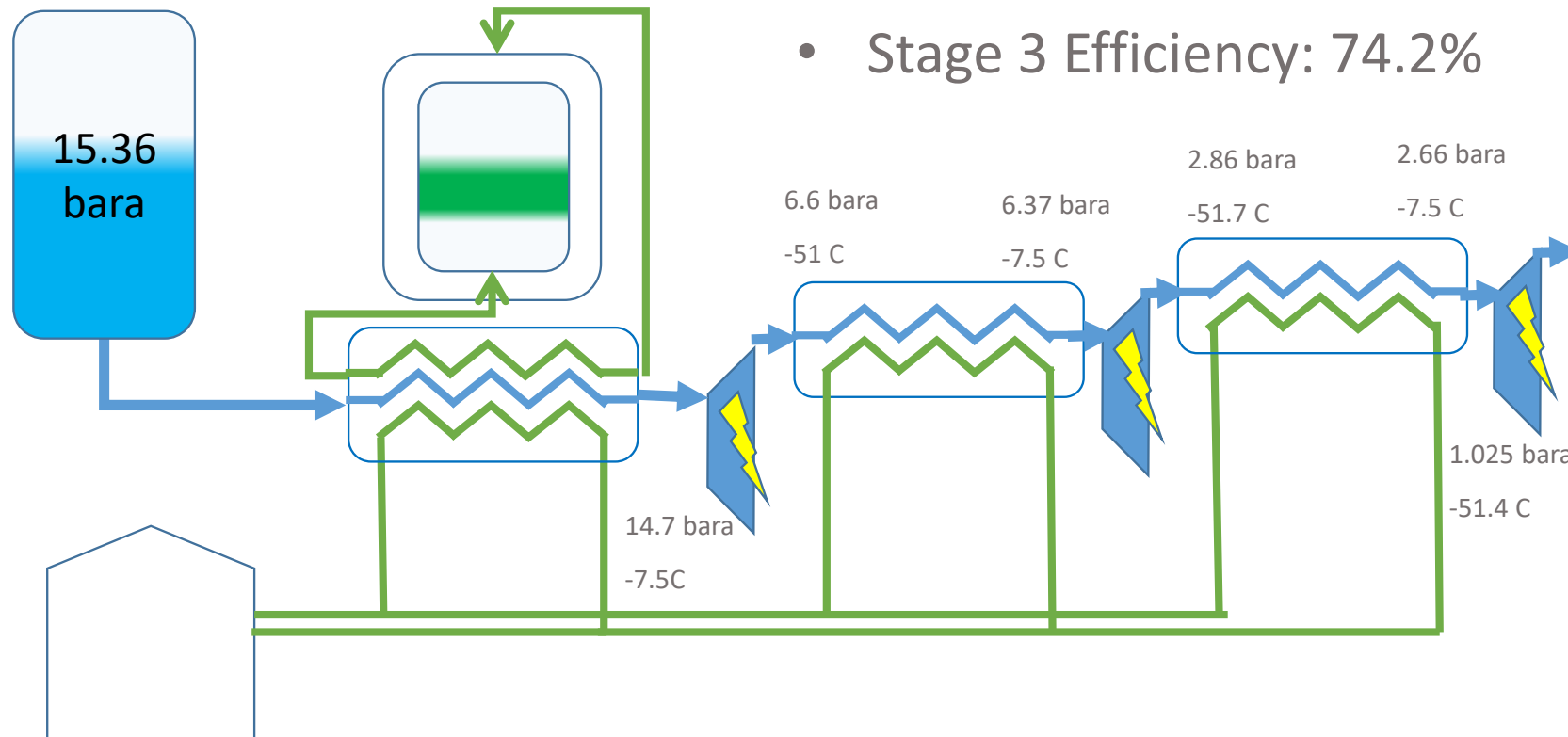
- Interstage cold energy generation and use in cold store warehouse



# Cryohub system as demonstrated (without a liquefactor)

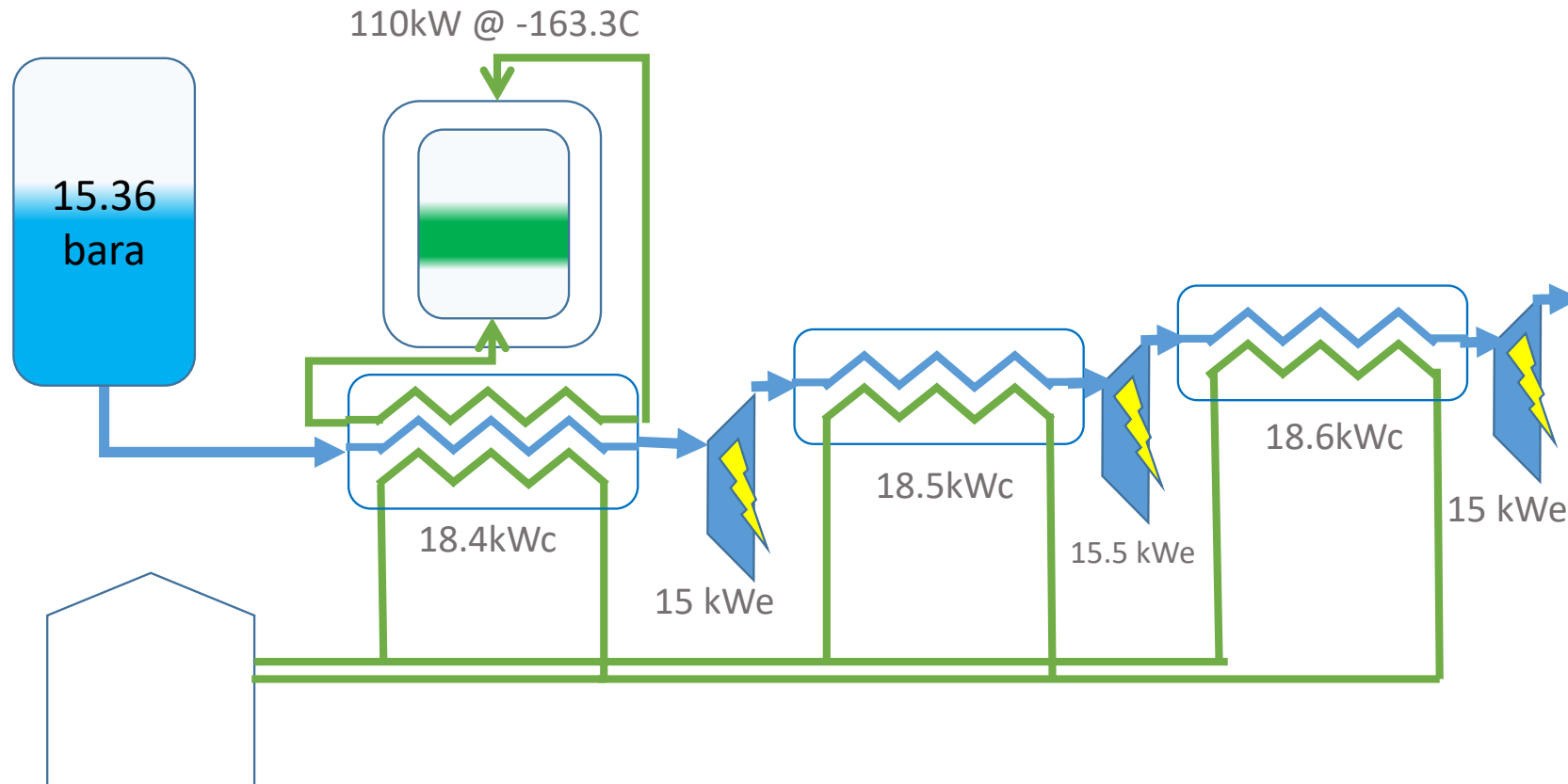
At nominal conditions:

- Stage 1 Efficiency: 78.7%
- Stage 2 Efficiency: 80.9%
- Stage 3 Efficiency: 74.2%



# Cryohub system as demonstrated (without a liquefactor)

- At nominal conditions:



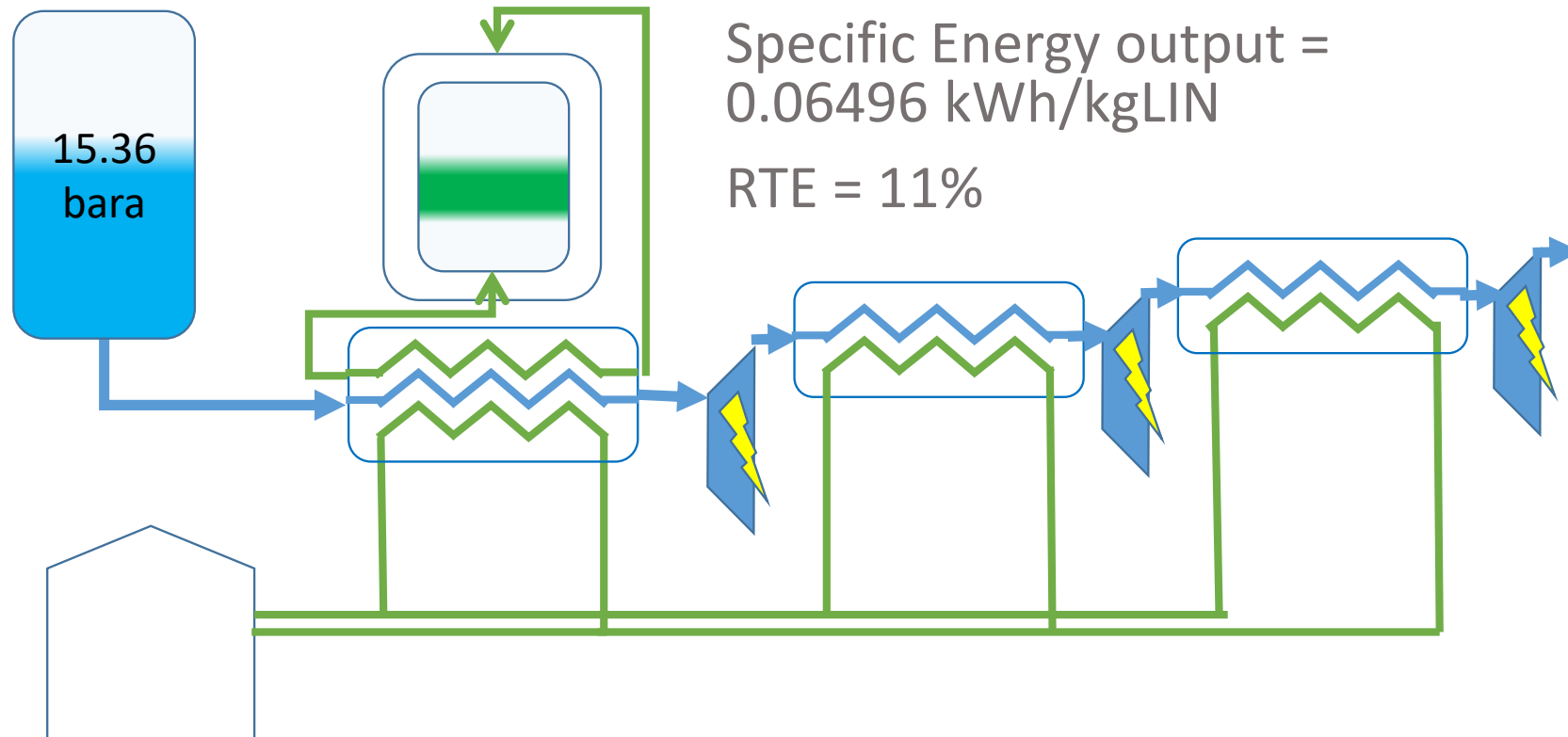


# Cryohub system as demonstrated (without a liquefactor)

- At nominal conditions: Specific Liquefaction work = 0.5898 kWh/kgLIN

Specific Energy output = 0.06496 kWh/kgLIN

RTE = 11%

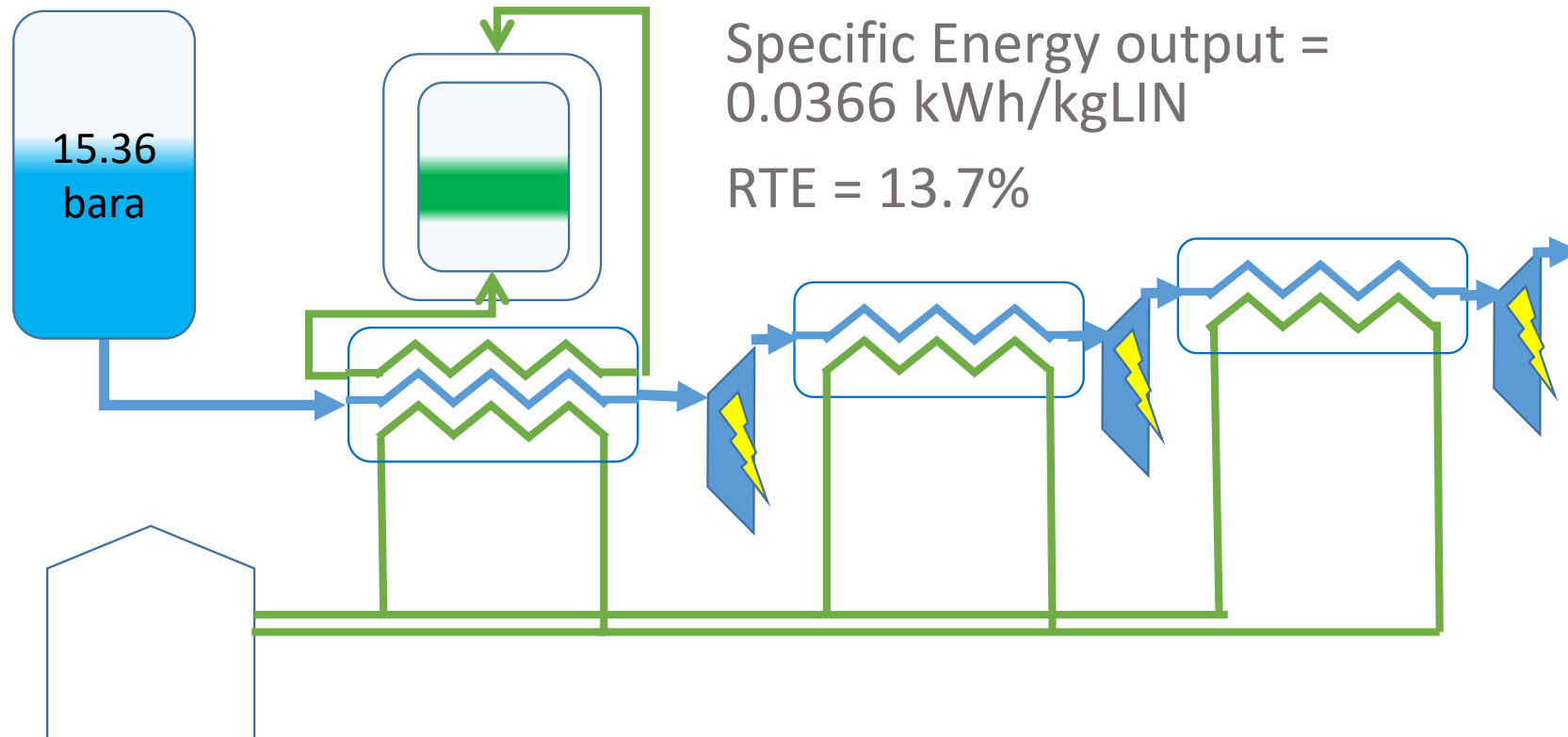


# Cryohub system as demonstrated (if we had a liquefactor)

- At nominal conditions: Specific Liquefaction work = 0.267kWh/kgLIN

Specific Energy output = 0.0366 kWh/kgLIN

RTE = 13.7%





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