Manufacturer of heat pumps and chillers using natural refrigerants

– solving challenges of the green transition

Natural Refrigerants ONLY

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Manufacturer of heat pumps and chiller systems in Aarhus

Natural Refrigerants ONLY

- 4,400 m^2 office and production in Aarhus
- 80 dedicated employees
- 75 projects sold
- Broad product range with CO2 and Hydrocarbon
- 240 MW sold
- 158 heat pumps
- Revenue: 30 M€ in 2023 and 45 M€ in 2024
- Heat pump and chiller racks up to 3MW

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The way we work

ADVICE

PROJECT MANAGEMENT & DESIGN

START UP & COMMISSIONING

REMOTE MONITORING

SUPPORT

PRODUCT DESIGN ++

PRODUCTION +++

INSTALLATION -

COMMISSIONING ++

SERVICE ++

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Heat Pump Selection/Design

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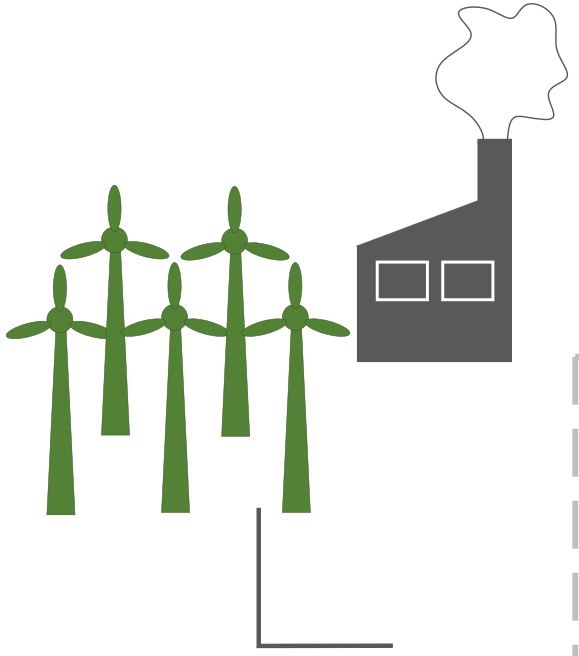
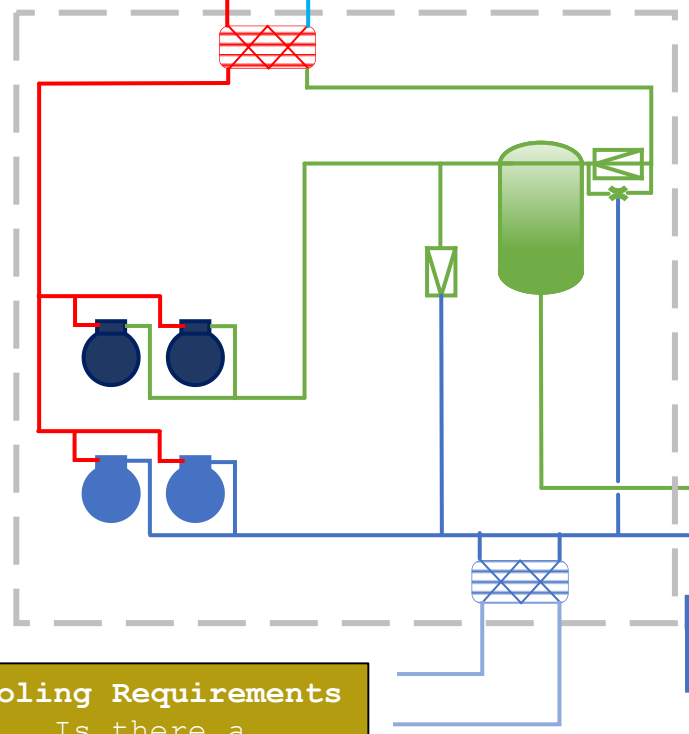
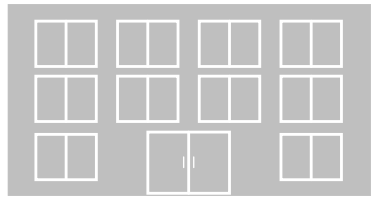
Network Details
What flow temperature is required?
What return temperature is

Thermal Storage
Is it being used?





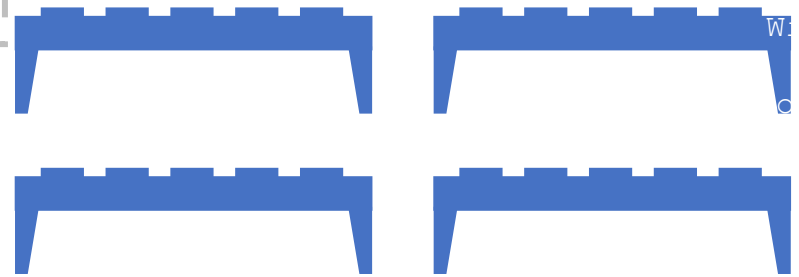


Network Consumers
What type of buildings are connected?
What are the demand patterns for the heat?

Energy Source
What type of energy source?
Is there an opportunity for grid balancing?

Energy Absorbers
What space is required/available?
What ambient temperature range?
Defrosting

Cooling Requirements
Is there a need/opportunity for combined heating and



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What Fenagy will Provide

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Leak Detection & Ventilation

Networked

Heat Pump

Connected to Central Control

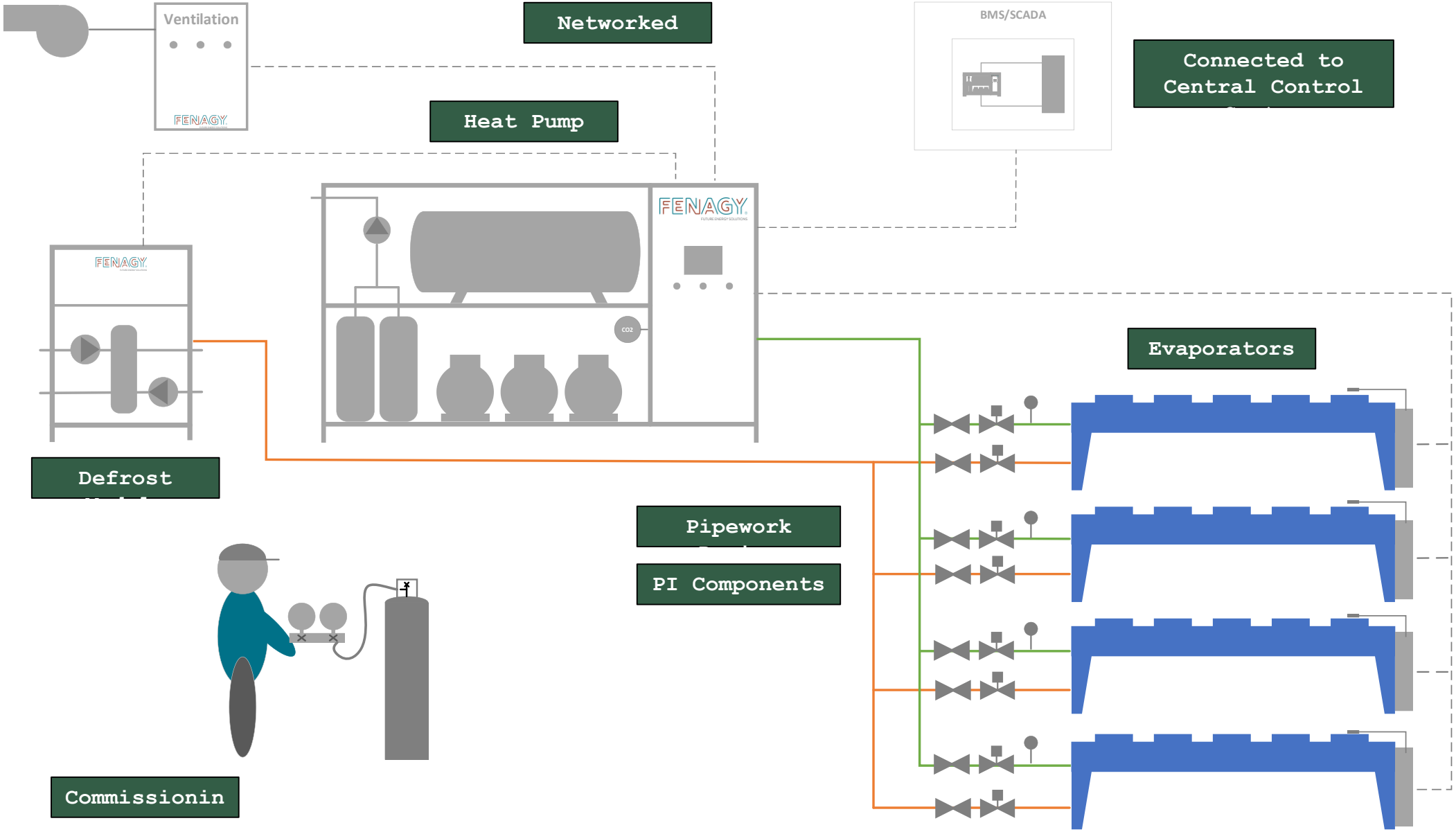
Evaporators

Defrost

Pipework

PI Components

Commissionin



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Case Studies

Combined heating and cooling

- 1.2 MW heating capacity
- Cooling IKEA Aalborg (heat source)
- Using air as heat source during winter
- Reject all heat into local district heating
- Water-to-water and air-to-water operation
- Enclosure for heat pump and pump station
- Installation year: 2022
- Refrigerant: CO2

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13 MW Air-to-Water heat pump

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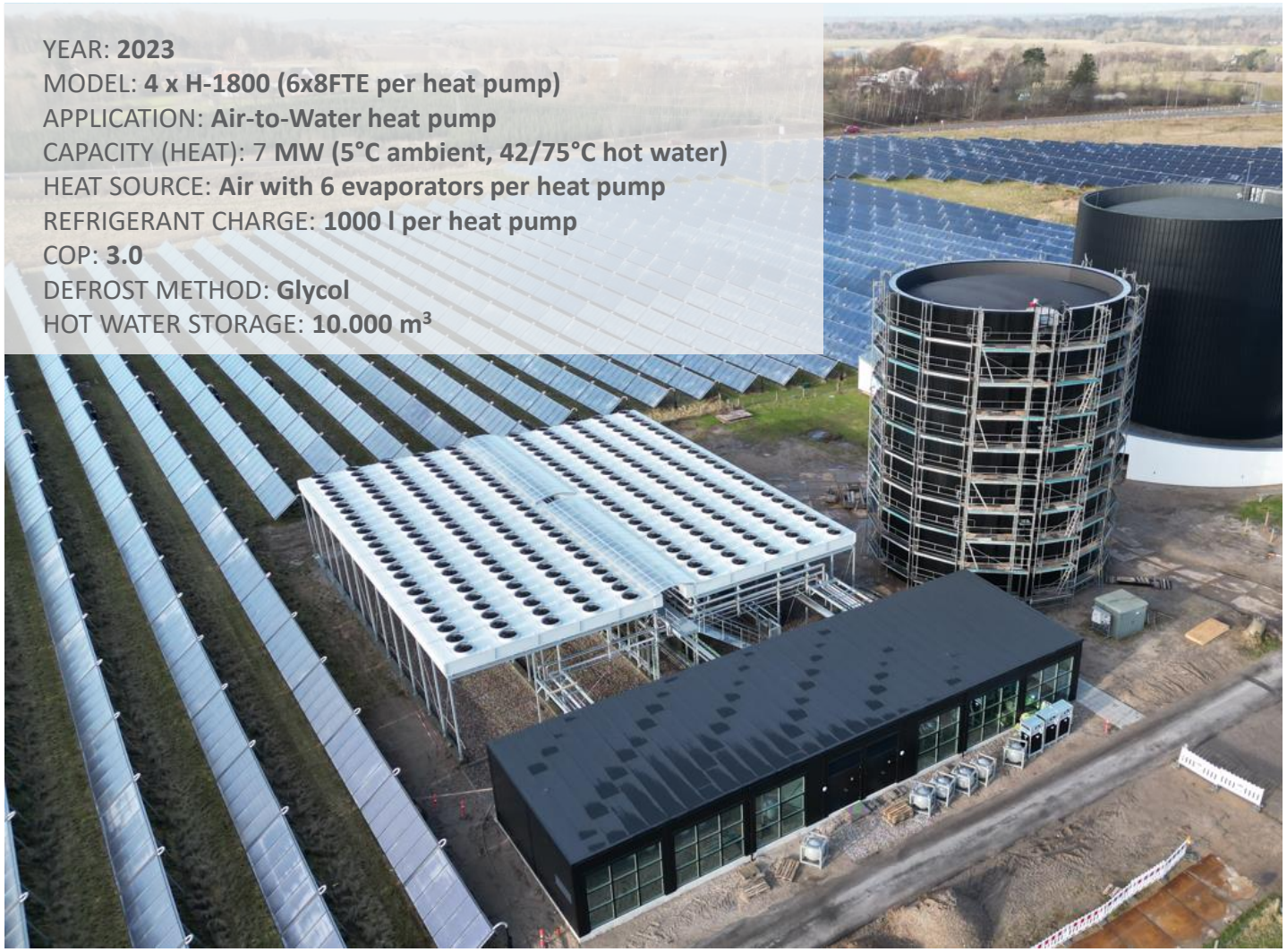
District heating

- 5 x heat pumps (2.6 MW/unit)
- 40 x evaporators (400 fans)
- 40 x compressors
- Redundancy
- Installation year: 2024
- Refrigerant: CO2

Nykøbing Sjælland: 7 MW air-to-water heat pump

YEAR: **2023**
MODEL: **4 x H-1800 (6x8FTE per heat pump)**
APPLICATION: **Air-to-Water heat pump**
CAPACITY (HEAT): 7 **MW (5°C ambient, 42/75°C hot water)**
HEAT SOURCE: **Air with 6 evaporators per heat pump**
REFRIGERANT CHARGE: **1000 l per heat pump**
COP: **3.0**
DEFROST METHOD: **Glycol**
HOT WATER STORAGE: **10.000 m³**



District heating - Sdr Felding

- 3.5 MW Air-to-Water heat pump
- Large energy storage tank
- Installation year: 2022
- Refrigerant: CO2
- Approved by TSO for aFRR marked

"Fjernvarmens pris" 2023

750 households 4.5 m3/house

12 days storage in summer

40 hours storage in winter

30% more capacity 70 to 80°C

- Runs on renewable electricity when prices are low
- Large tank and large heat pump decouple the heat demand from fluctuating electrical prices
- Fast start and stop (less than 5 minutes)
- Helps balancing the electrical grid

Thank you

Thank you for listening!

Feel free to contact us if you have any questions:

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