Hall 7A

Chillventa Specialist Forums 2024
Chillventa Fachforen 2024

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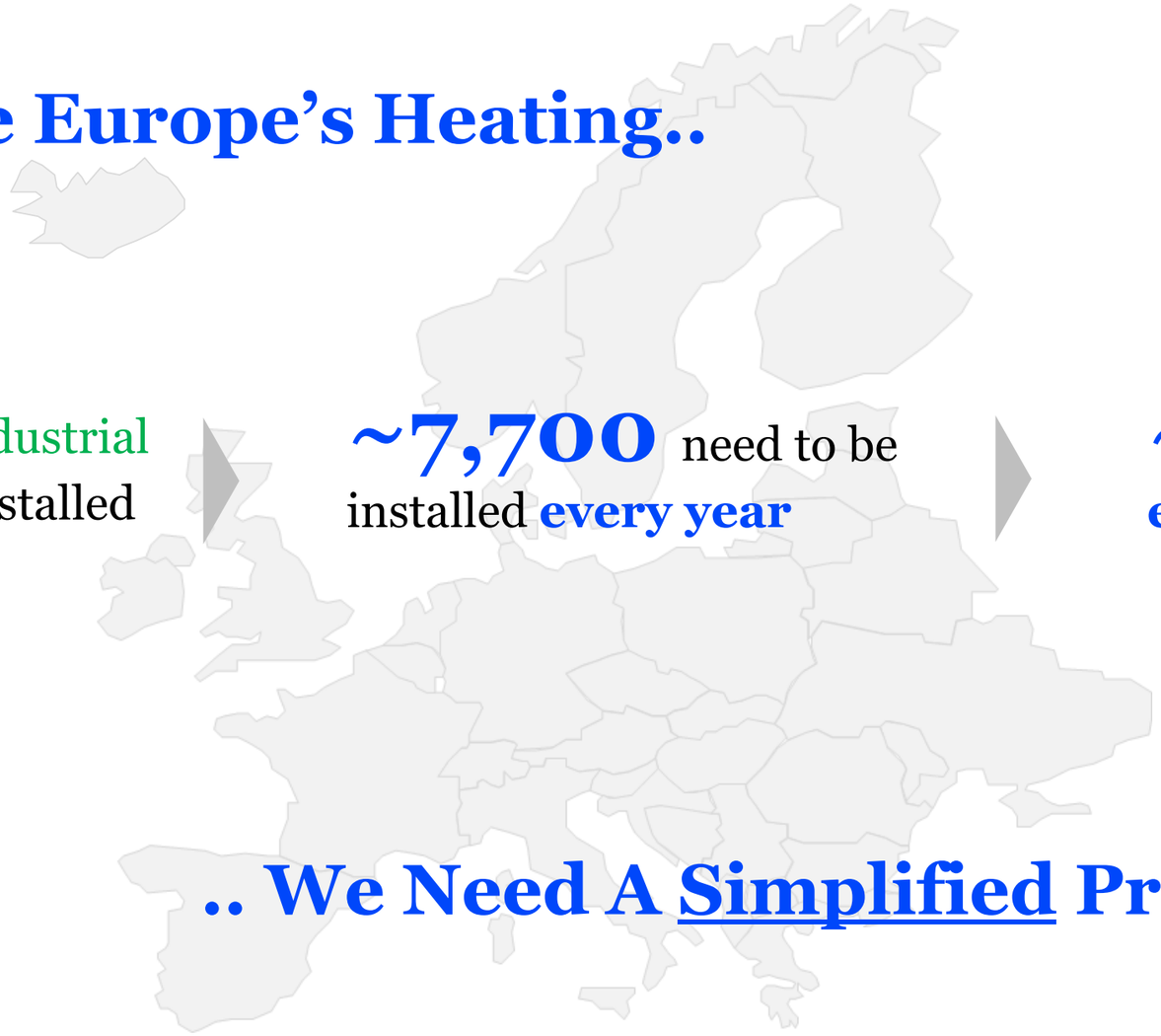
EXPERTS.

COPELAND

A Scalable Approach for High Temperature Heat Pumps in District Heating Applications

Demand for Industrial Heat Pumps Will Outpace Supply

To Decarbonize Europe's Heating..



~200,000 industrial heat pumps need to be installed **by 2050**

~7,700 need to be installed **every year**

~21 need to be installed **every day**

.. We Need A Simplified Product Approach

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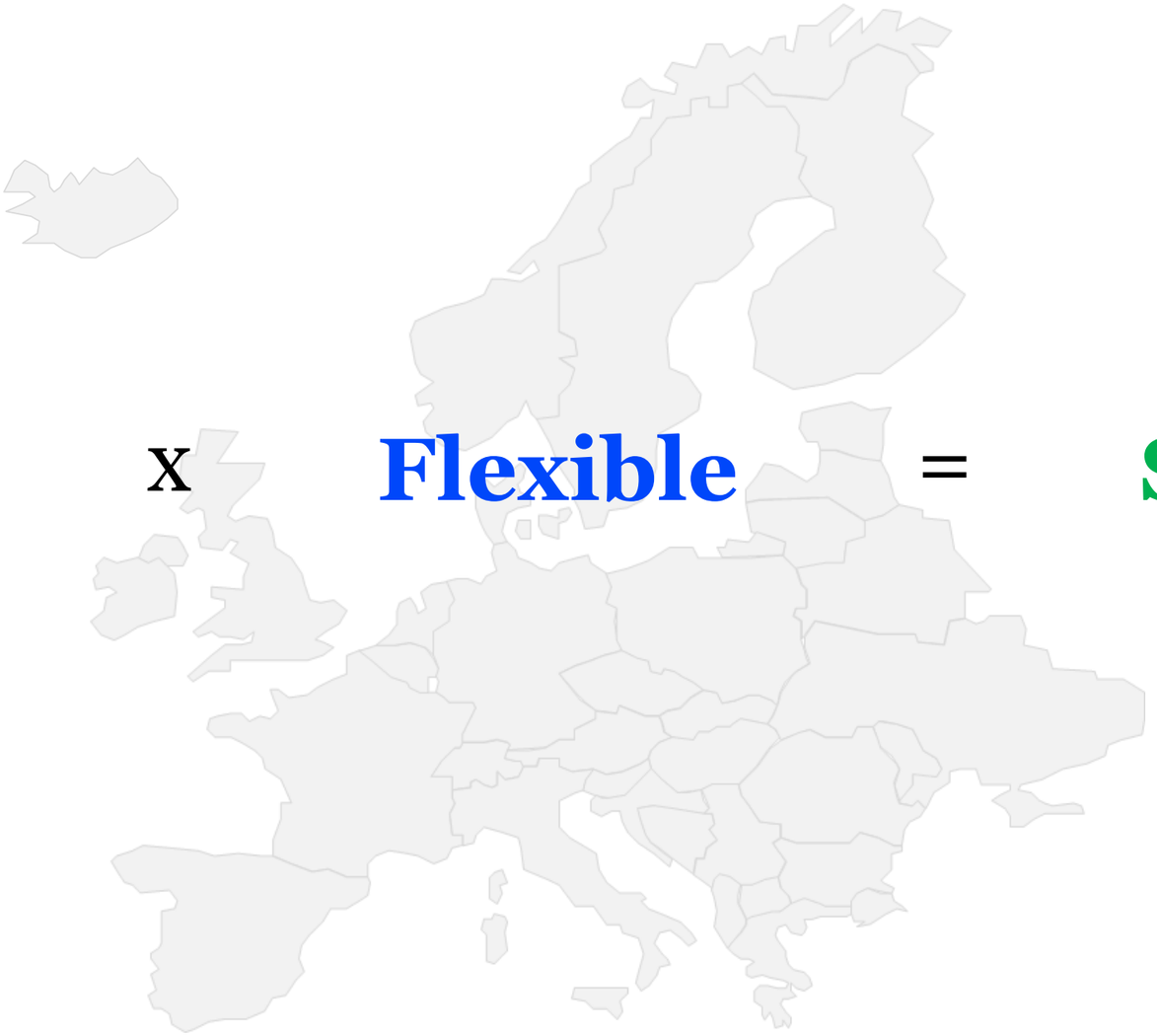
A New Equation to **Accelerate the Global Energy Transition**



Standard x **Flexible** = **Scalable**

VILTER by COPELAND

Announcing Vilter's Formal Launch:

VQ95 Single-Stage Heat Pump **Expertly-Crafted** to Decarbonize Heating

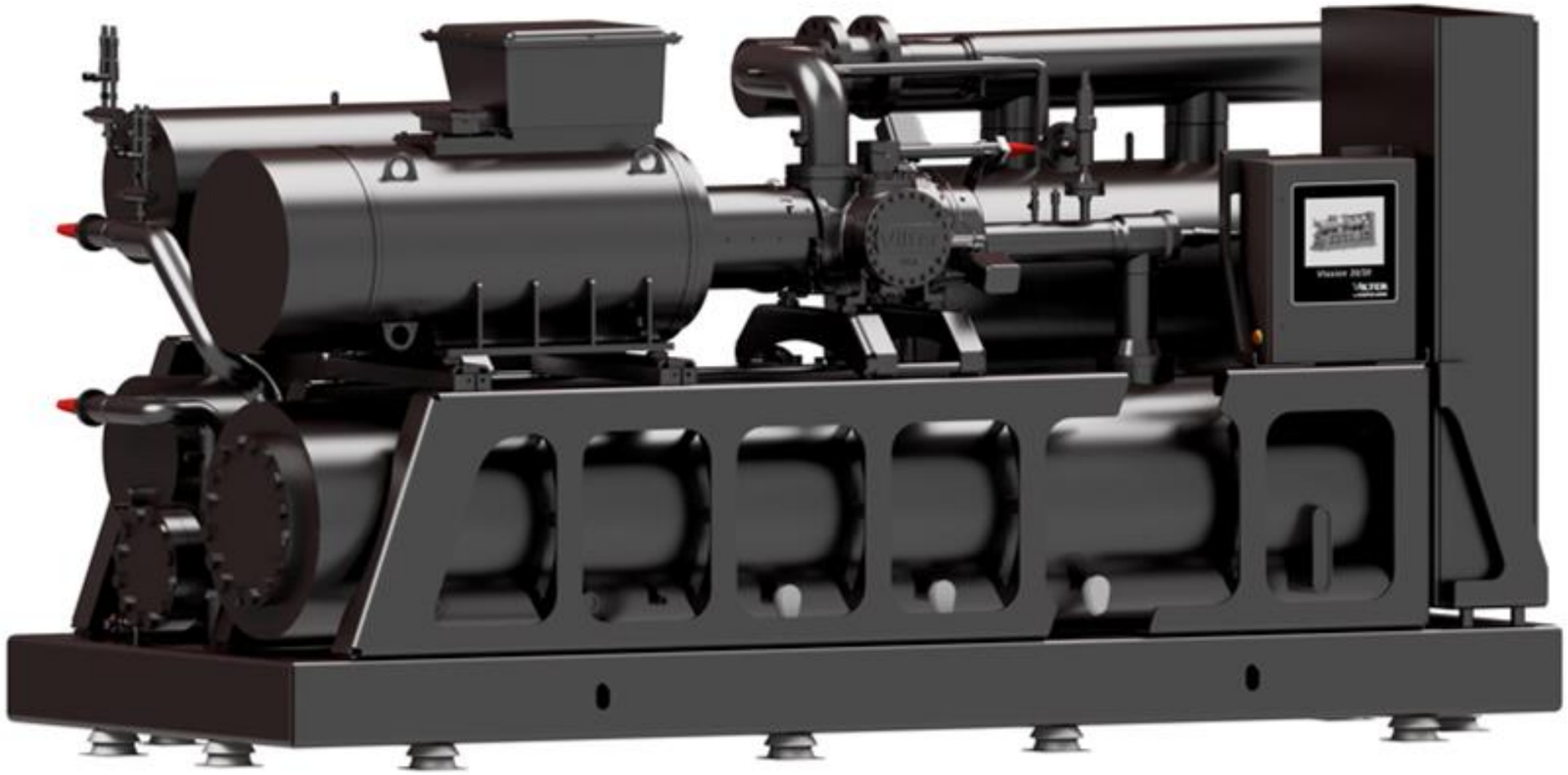
- VQ95 -

NH3 refrigerant

1 – 5 MW heating capacity

95˚C water temp

Plug-and-Play, Modular, Single-skid design



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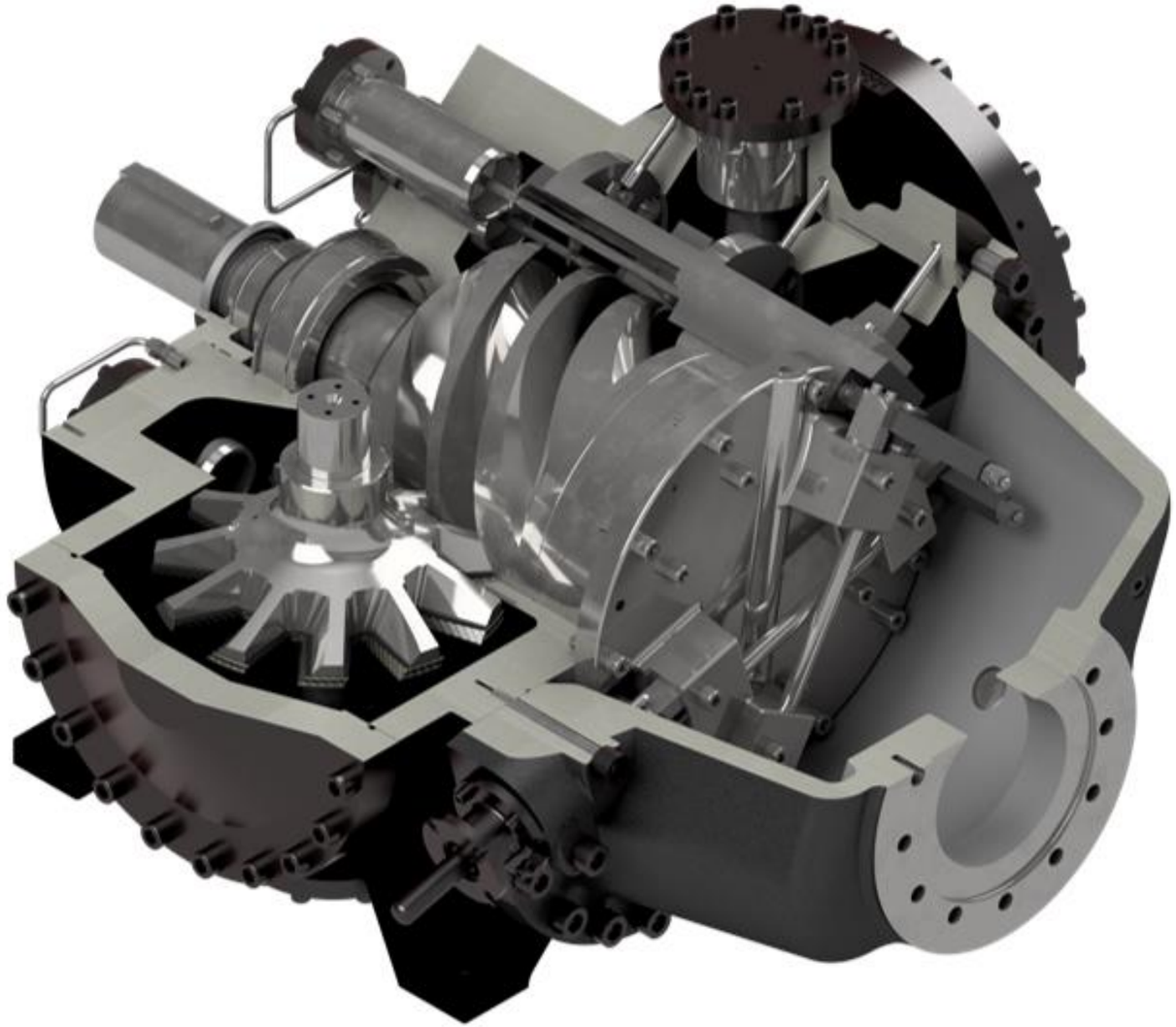
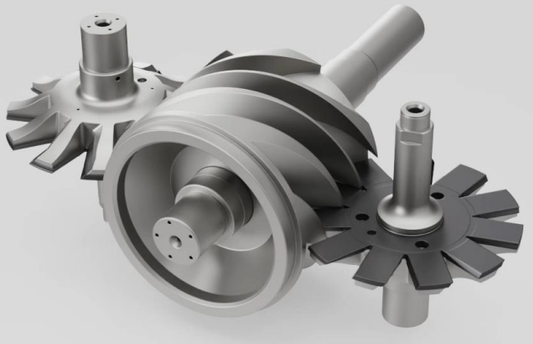
VQ95 Key Enabler: The Vilter Single Screw





Balanced axial and radial loading

Tested in the toughest applications

Tolerant of liquid droplets

15 Years of Heat Pump Duty and Operation at 90˚C

Parallex Slides: V_i and V_c

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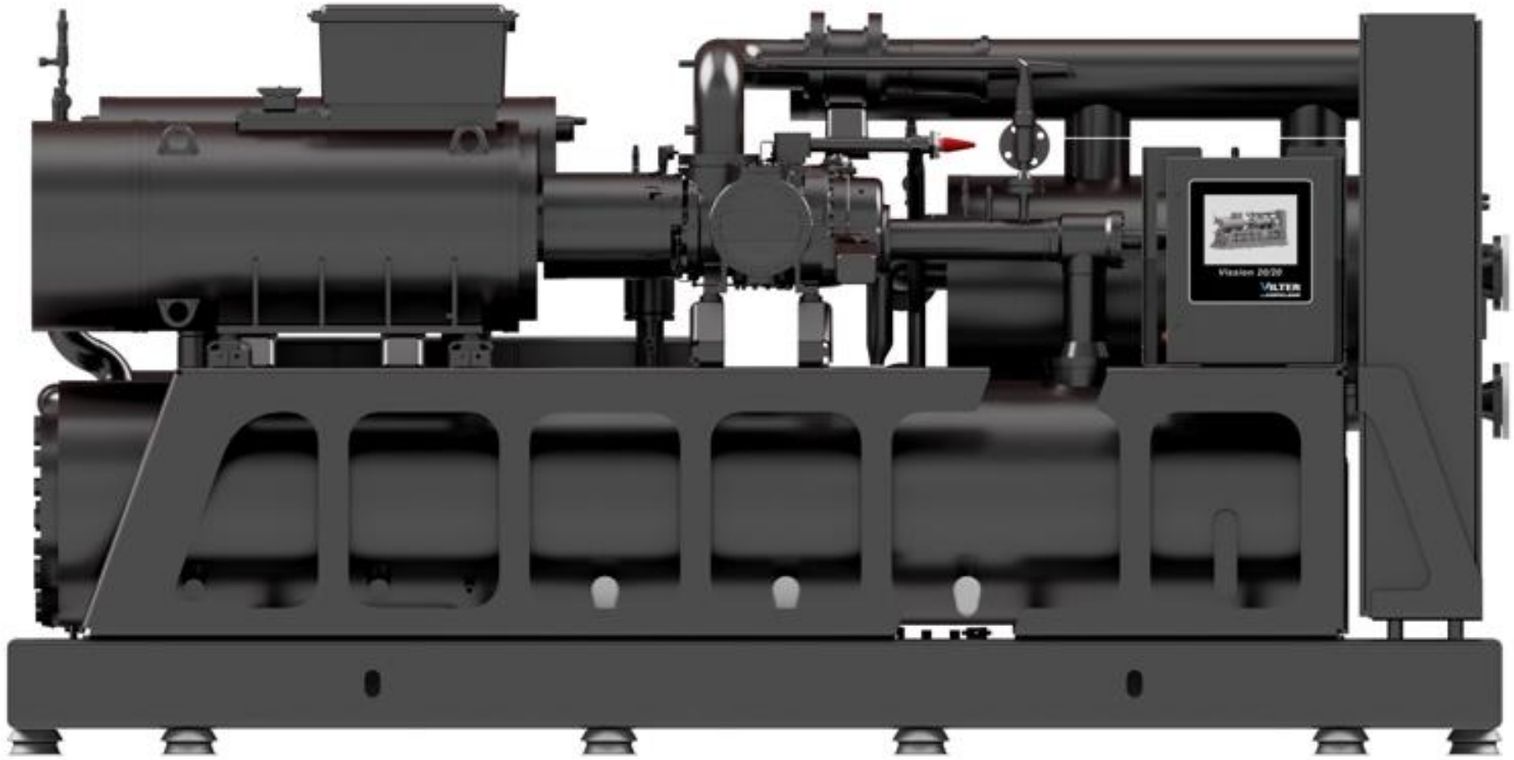
The **New Standard** for Industrial Heat Pumps



Two Compact Footprints:
Frame 240: L 5.6m x W 2m x H 2.5m
Frame 310: L 6.2m x W 2.3m x H 2.8m

Efficient.
- High COP
- No superheat needed
- Maintain performance over time

Simple.
- No oil pump, No VFD required
- Fast commissioning, intuitive controls
- Single-skid, Modular, Plug-and-Play

Reliable.
- Tolerant of liquid droplets
- Non metal-to-metal compression
- Less moving parts

Flexible.
- 1-5MW per skid, scale up to 50MW+
- 2000+ standard configurations
- High and low ΔT designs

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Application Case Study – End User Profile

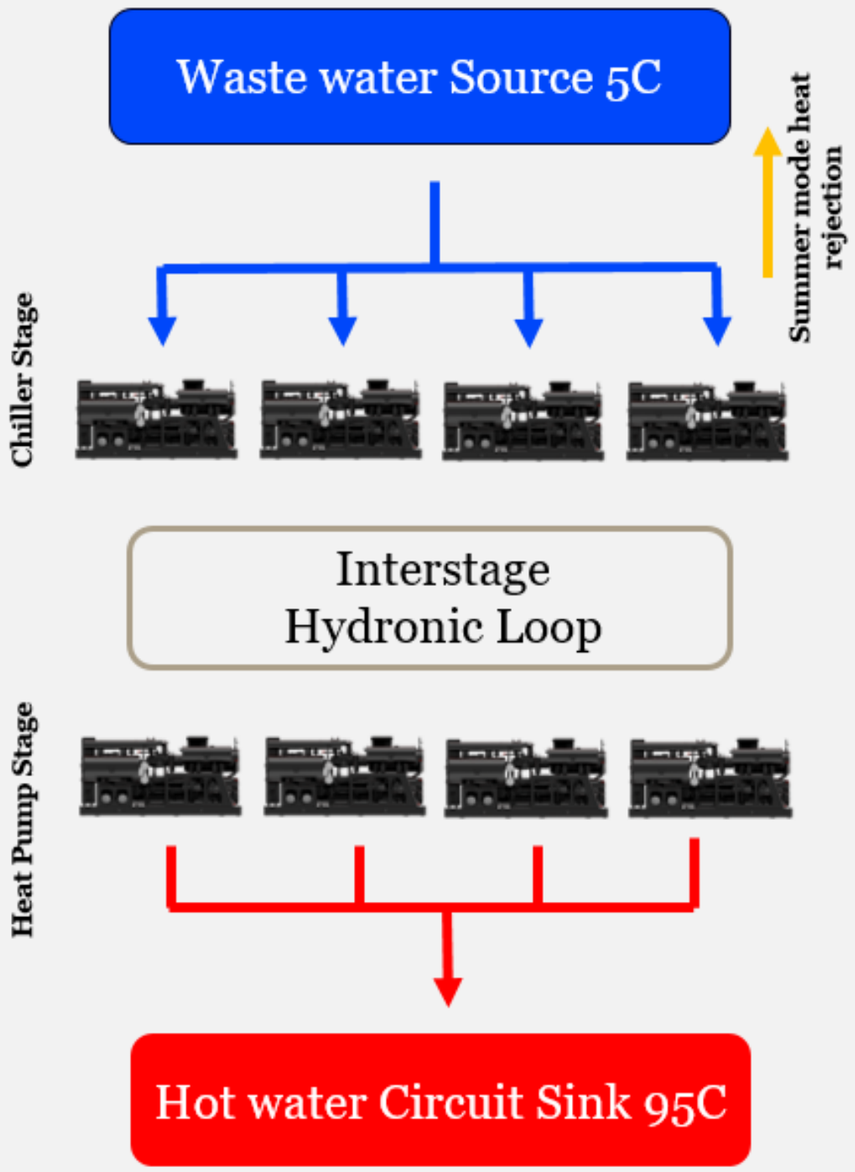
Community District Energy System

A Community Like Yours!

- Community owned district energy system
- Population 350K residents
- District Energy System customer base
  - Single unit Residential
  - Commercial Residential
  - Commercial Business
  - Education facilities
  - Health care and hospital facilities

Current vs. Planned Growth

- Serving 1.3 Million sq.meters of heating and cooling space
- 7 Million cubic meters of natural gas avoided per year
  - 15,000 CO_2 e metric tonne
- Planned growth over the next decade ~100%



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Application Case Study – Technical Summary

Community District Energy System

Heat Source

- Waste Water Energy Transfer System
  - Large community sewage line used as heat source
  - Liquid and solid separation & heat exchange process
  - Consistent source temperature @ ~5C

Heat Sink

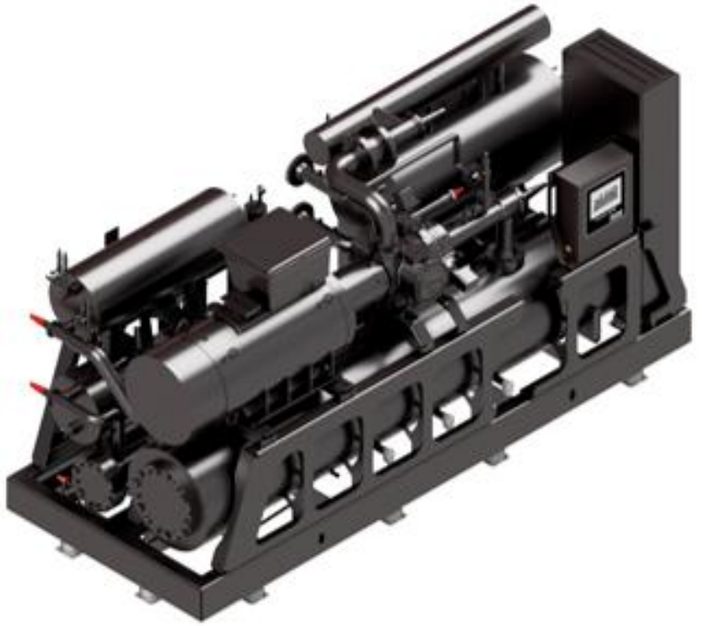
- 95C LWT direct to hot water supply
  - Designed for 60C return water temperature
  - Consistent base load during heating season
  - Part of a large network where variation of load is managed by other systems

Operational Details

- 18.5 MW of heating capacity
  - 95C LWT does not require Boiler “top up”
  - Using capacity control and 4 package configuration system can trim to less than 25% capacity for shoulder season
- Summer cooling mode

Vilter Advantage @ 95C.

- High thermal density for required equipment footprint
- Lowest total cost of ownership
- Extended equipment run hours with high equipment availability



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Let **Vilter by Copeland** be your Energy Transition Partner

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