



INTEGRATED COUNTERFLOW HEAT EXCHANGER FOR EFFICIENT DOMESTIC HOT WATER IN LOW-TEMPERATURE DISTRICT HEATING

ISEC 2026 - CONFERENCE FOR RENEWABLE HEATING AND COOLING IN INTEGRATED URBAN AND INDUSTRIAL ENERGY SYSTEMS
Messecongress Graz, April 16, 2026

ISEC

4th INTERNATIONAL
SUSTAINABLE ENERGY
CONFERENCE 2026

14 – 16 April 2026
Messecongress Graz
Austria

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CTO | Head of R&D

we connect energy

Content

 Stratification efficiency

 Facts in the Range of m^3/MWh – Specific Volume Flow

 District heating data: Alpendorf St. Johann

 Hygiene

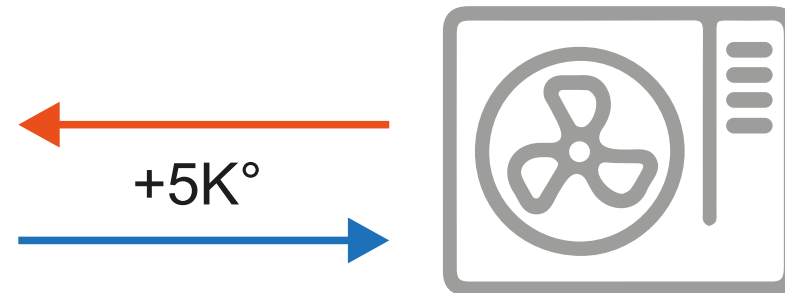
 Maintenance

 Certification and 10-year warranty

Is it possible to add energy to a storage system while simultaneously reducing exergy?



Conclusion:
Low stratification efficiency
destroys exergy!



Paradigm shift

Stratification ability

Protection against temperature mixing



Mixing

Temperature mixing = Exergy destruction



Mixing temperatures destroys heat potential and must be **unnecessarily replenished** to the same extent by the heat generator.

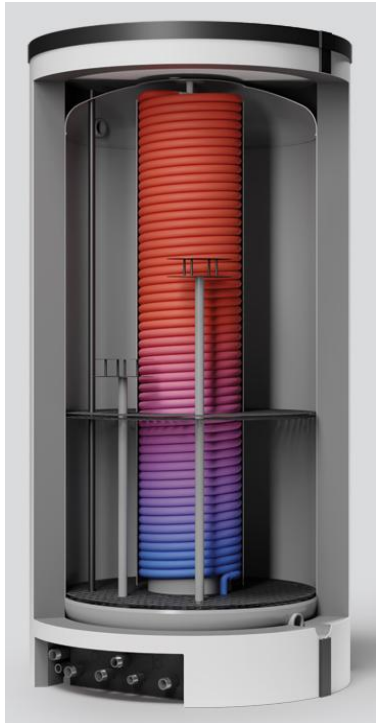
Stratification efficiency test

The stratification efficiency number (in %) for heat pumps ratio of

Heat used

:

Energy source used



SPF



Electricity saving

30 %

Through 20 % stratification eff.

HSD ZIES



29 %

https://spftesting.info/uploads/files/schichtung_ohne_zf/SE019fsde.pdf

Field test tank replacement

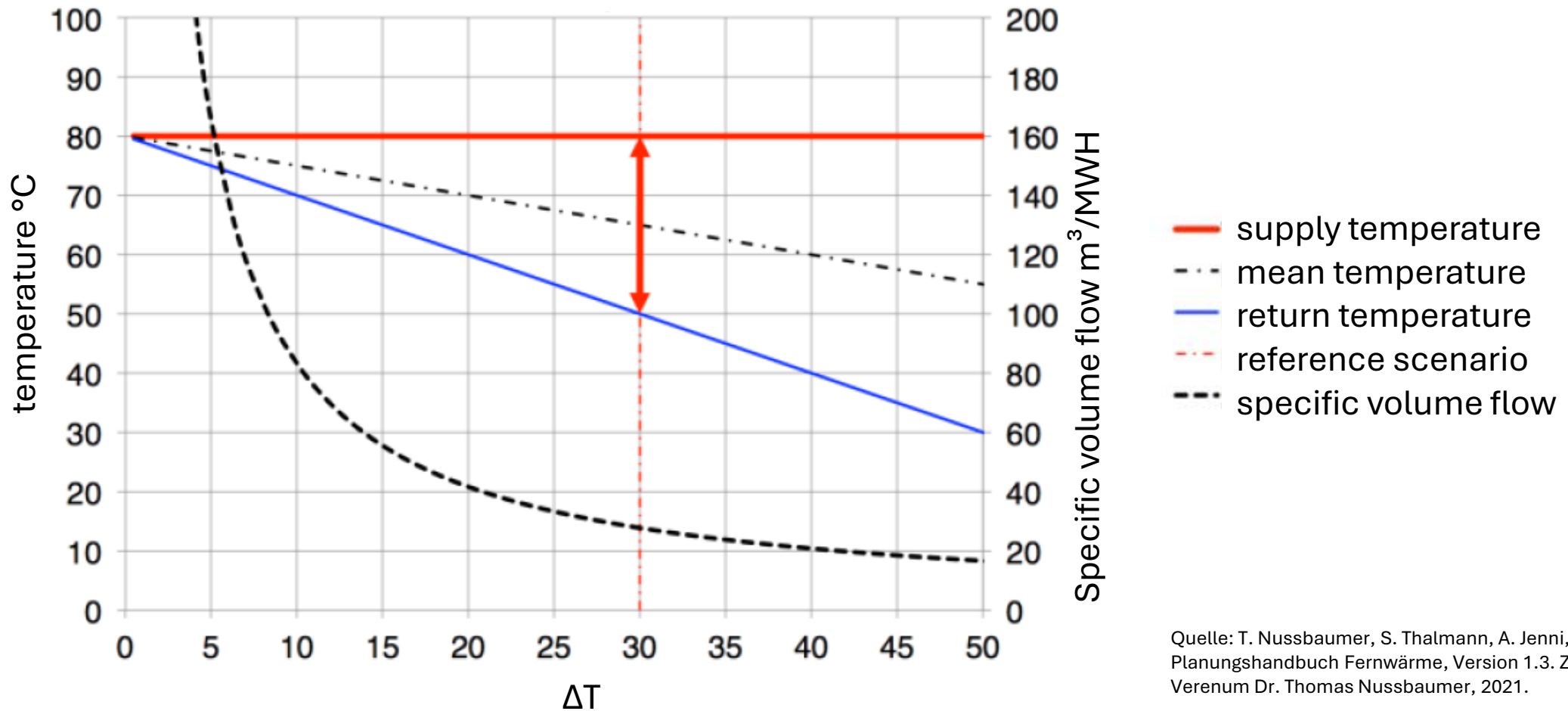
WPZ



30 %

DUOLINK vs. Buffer-boiler

Specific Volume Flow



Quelle: T. Nussbaumer, S. Thalmann, A. Jenni, und J. Ködel, Planungshandbuch Fernwärme, Version 1.3. Zürich: Verenum Dr. Thomas Nussbaumer, 2021.

District Heating Network Alpendorf

heating plant

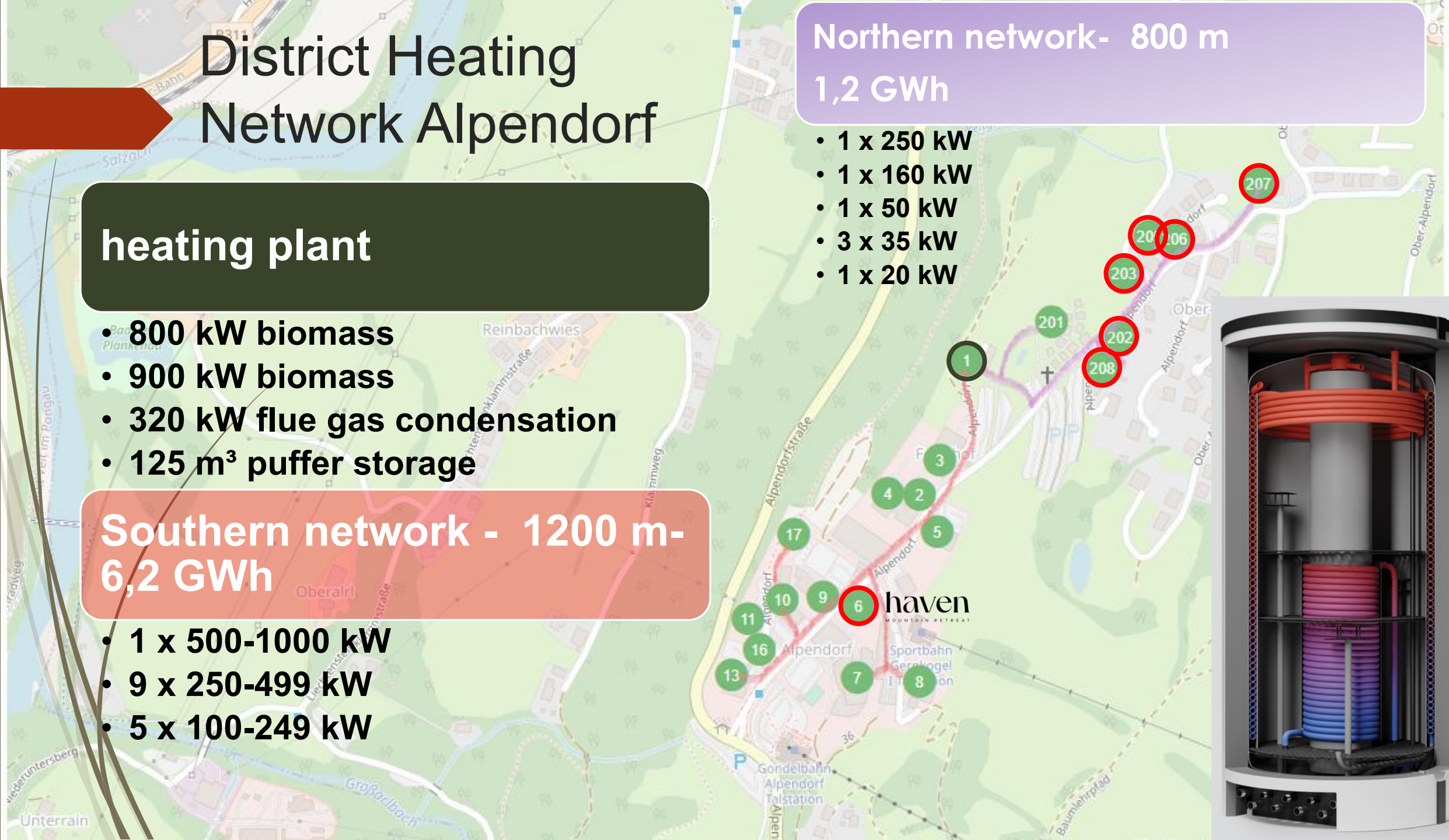
- 800 kW biomass
- 900 kW biomass
- 320 kW flue gas condensation
- 125 m³ puffer storage

Southern network - 1200 m- 6,2 GWh

- 1 x 500-1000 kW
- 9 x 250-499 kW
- 5 x 100-249 kW

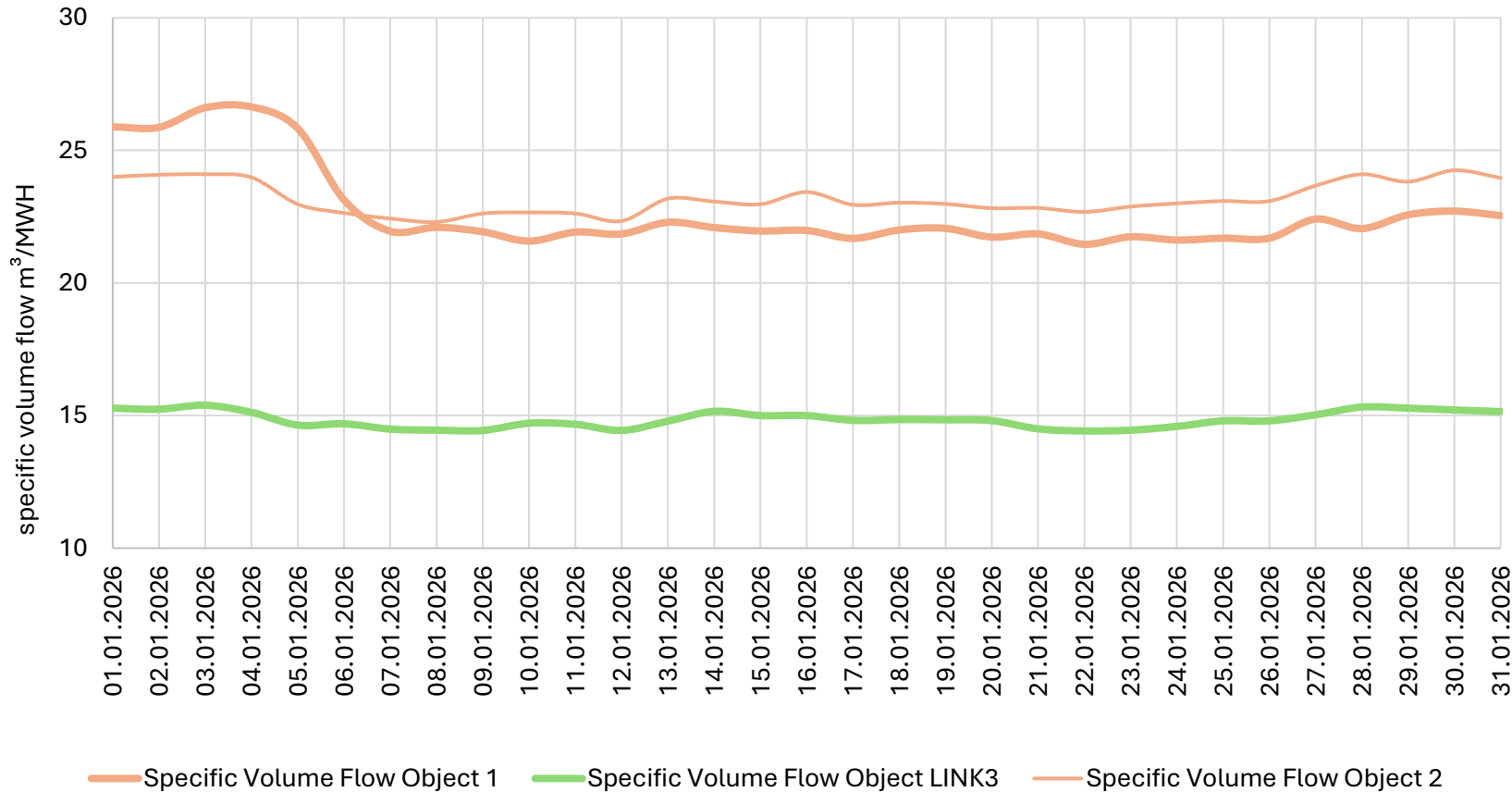
Northern network- 800 m 1,2 GWh

- 1 x 250 kW
- 1 x 160 kW
- 1 x 50 kW
- 3 x 35 kW
- 1 x 20 kW

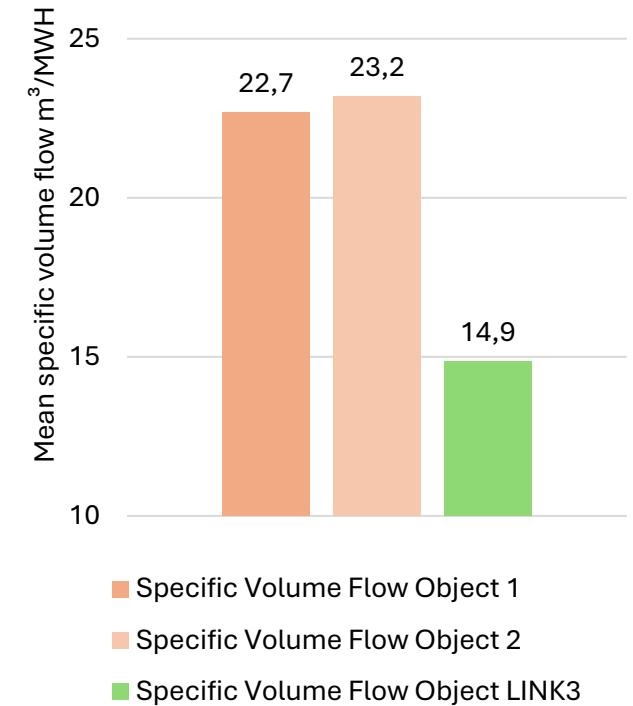


Data Analysis – District Heating Network Alpendorf

comparison specific volume flow

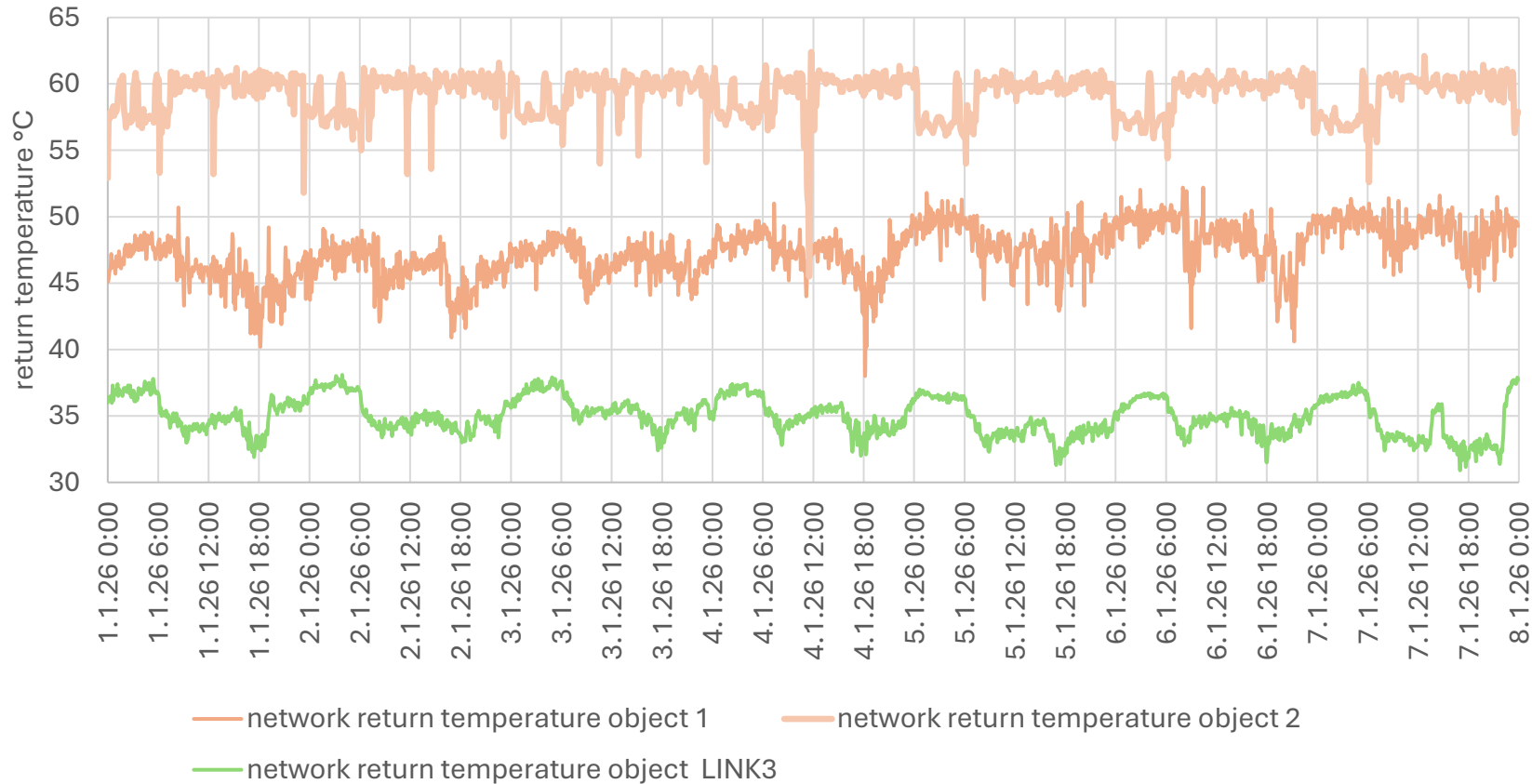


In some parts of the network, values of up to **50 m³/MWh** were observed

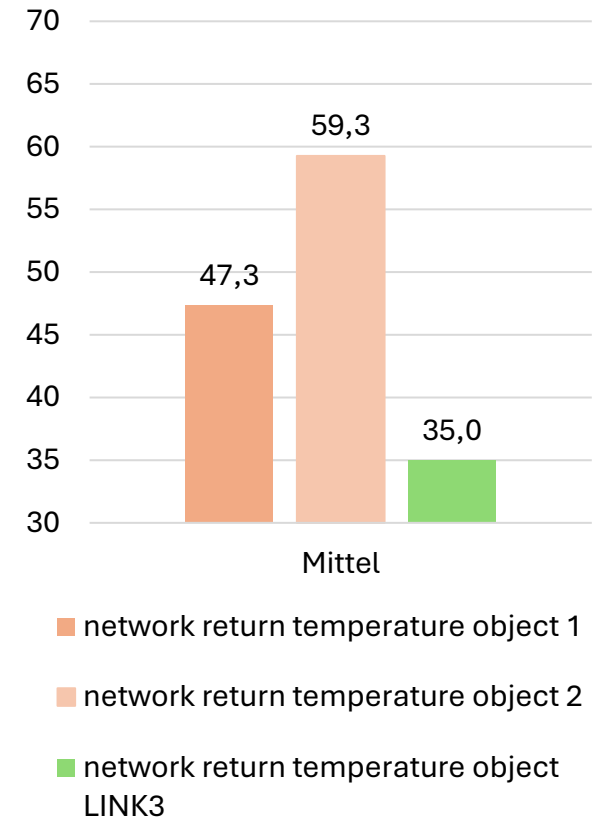


Data Analysis – District Heating Network Alpendorf

comparison return temperature



comparison mean value



highest drinking water hygiene

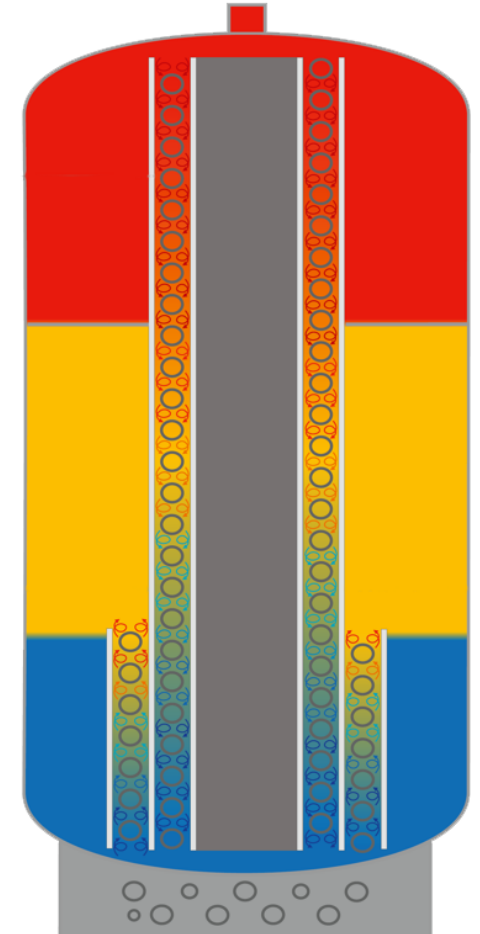
Confirmation by Laboratory:
Laboratory for Water Testing and
Hygiene
Dr. Arno Sorger



Water Safety Plan:

- LINK3 stratified storage technology significantly reduces biofilm formation
- Considerably lower scaling (lime deposition)
- Growth of relevant microorganisms cannot occur (if outlet temperature ≥ 60 °C)
- Stagnation is almost completely avoided

LINK3
counterflow heat
exchanger technology



Operation and maintenance





- LINK3** Lower pumping energy costs due to reduced specific volume flow (up to 66%) → also enables higher network capacities
- LINK3** Reduced maintenance intervals – no flushing required
- LINK3** No scaling due to design
- LINK3** Constant performance over time
- LINK3** No complex control system and fewer pumps required



scaled plate heat exchanger

TÜV-certified according to EN 13445



-  POWERLINK/-Basic/-Sun/-Plus
-  COMFORTLINK-Sun/-Plus
-  DUOLINK-Cool
-  ECOLINK-New

 EU type examination certificate confirms:
Proper and safe design of storage systems

 **10 year warranty**

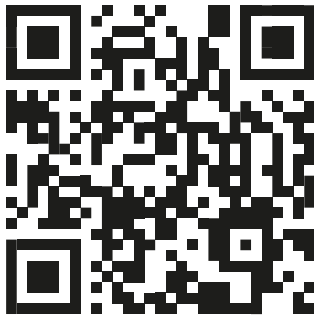


Stay tuned & Save the Date

Stay tuned!

<https://linktr.ee/link3gmbh>

scan me



Thank you!

Questions?
Contact us:



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