Bilfinger VAM Anlagentechnik GmbH

Large heat storage tank technologies in hybrid energy systems

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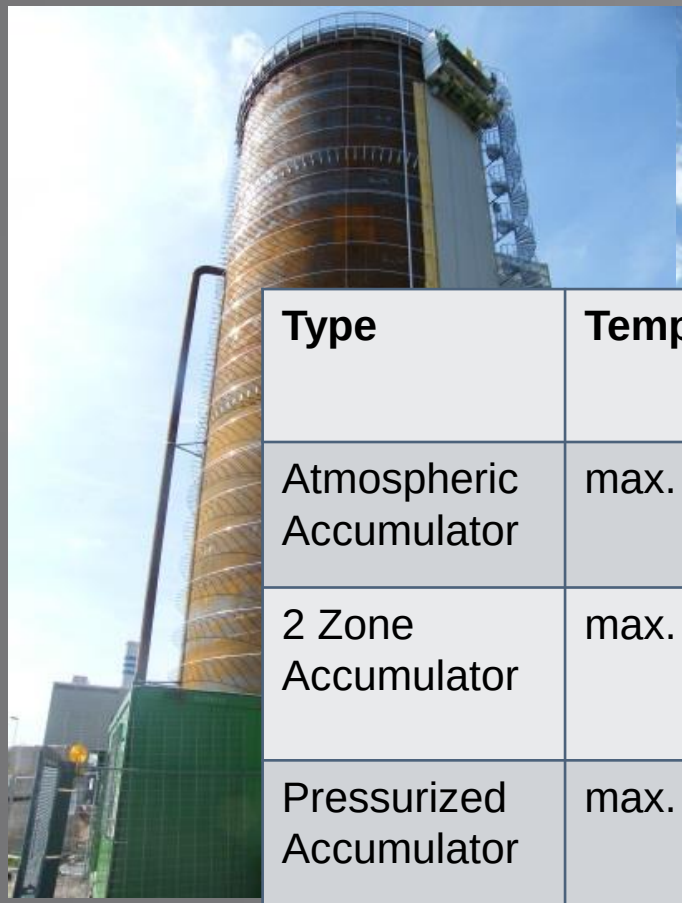
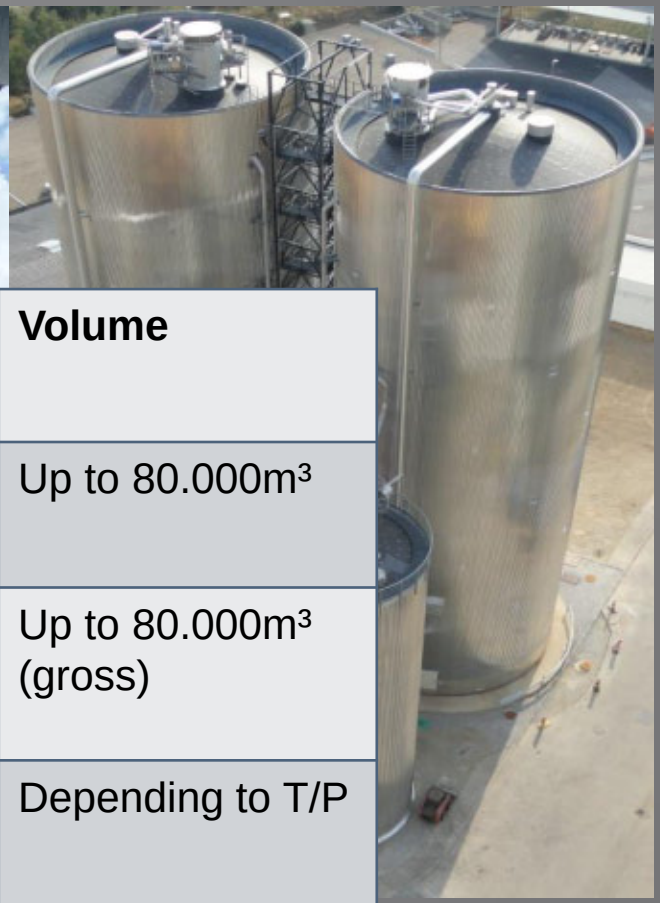
- Use and Types of DH accumulators
- 2-zone-accumulators in a Hybrid Energy System
- Reference of one 2-Zone-Accumulator in a Hybrid System
- Questions / Discussion

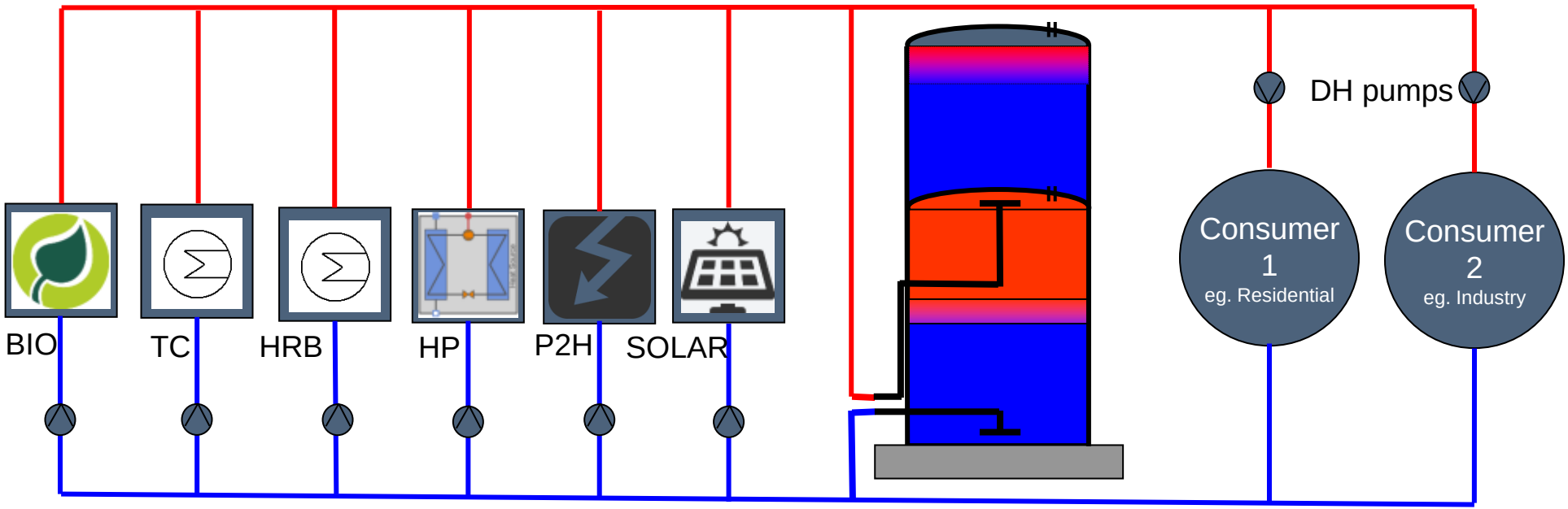
Use and Types of DH accumulators





Type	Temperature	Pressure	Reccuring examination	Volume
Atmospheric Accumulator	max. 98°C	Atmosph.	Not necessary	Up to 80.000m³
2 Zone Accumulator	max. 130°C	Atmosph.	Not necessary	Up to 80.000m³ (gross)
Pressurized Accumulator	max. 160°C	max. 15 bar	acc. PED	Depending to T/P

2-Zone-Accumulators in a Hybrid Energy System



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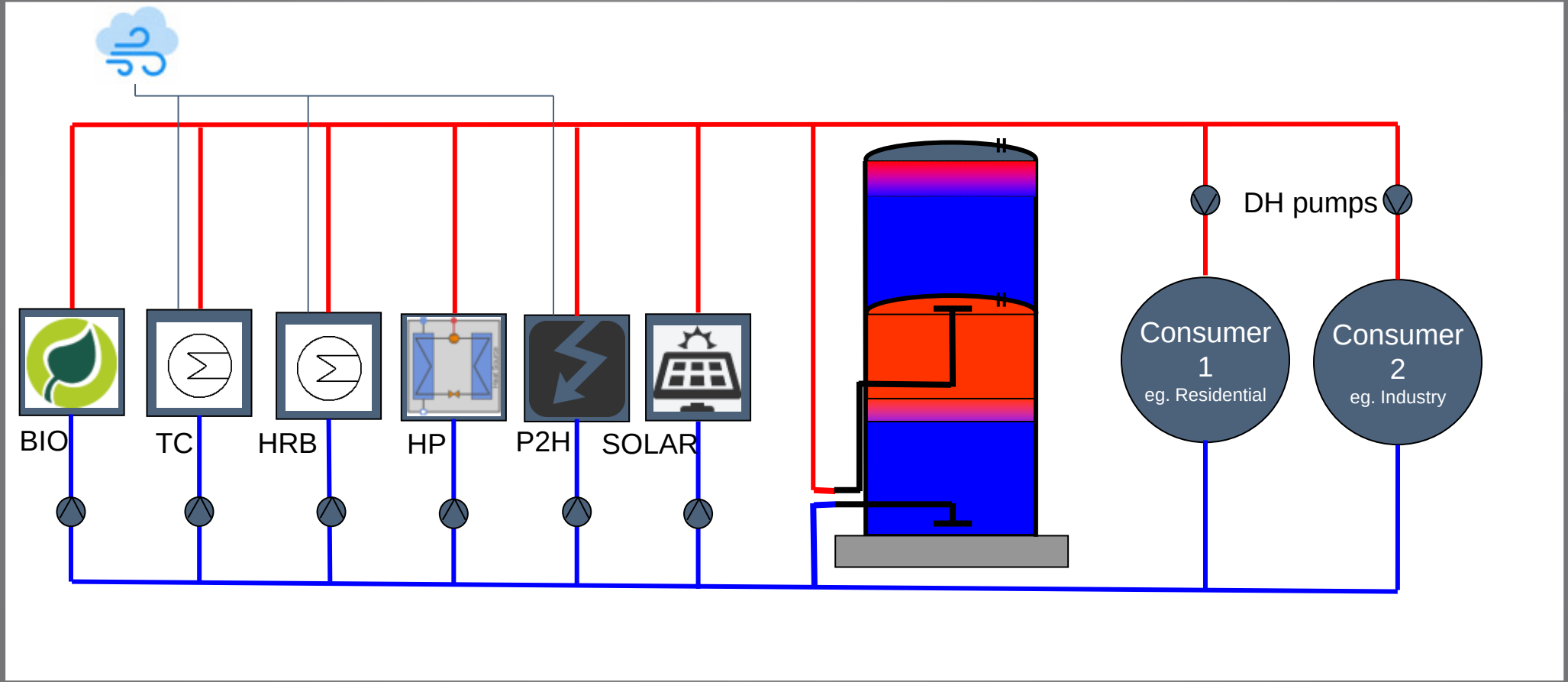
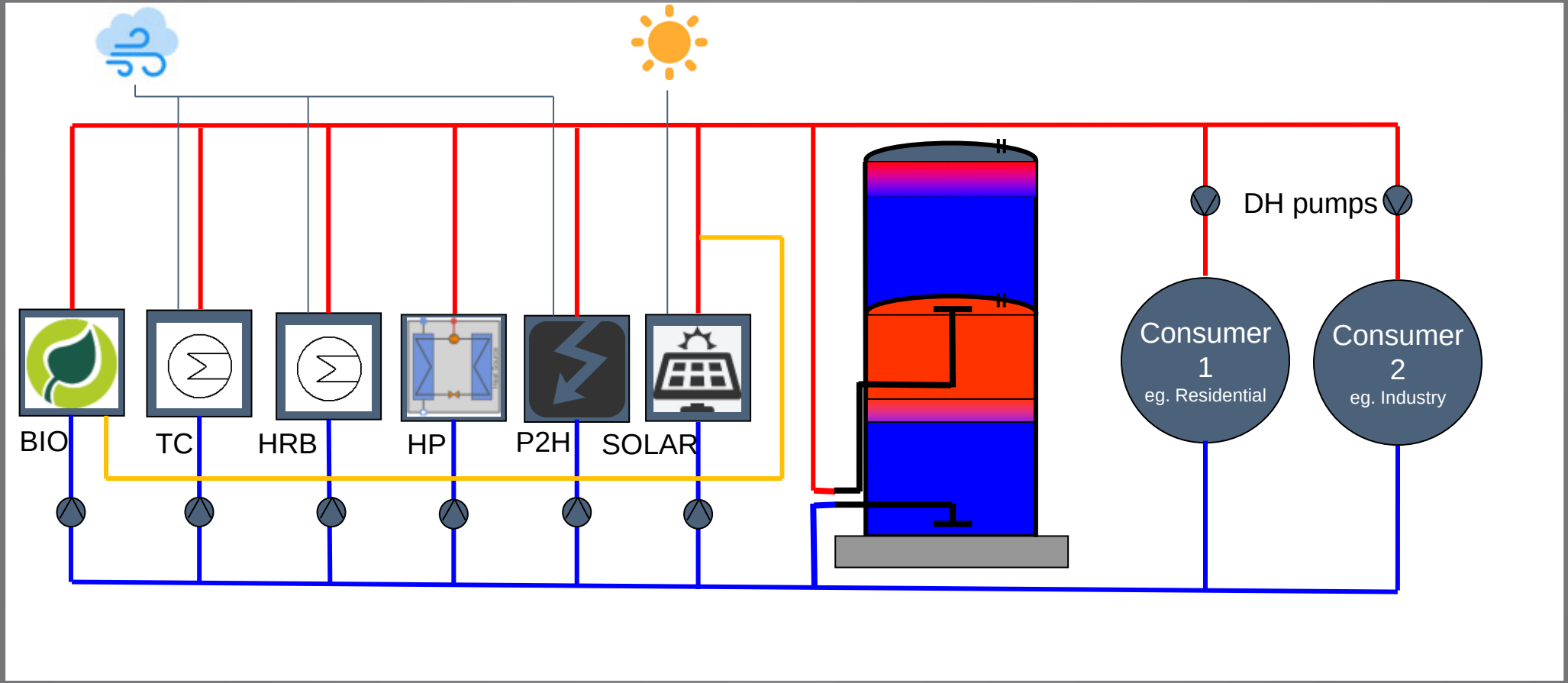


2-Zone-Accumulators in a Hybrid Energy System



Reference of one 2-Zone-Accumulator in a Hybrid System

- 2-Zone-Accumulator Nuremberg

- Year 2013/14
- Volume: 33600m³ (gross)
- Capacity: 1500 MWh
- Temperatures: 113/60°C

- **Dual zone accumulator**, i.e. Storage of water with more than 100°C in a pressureless accumulator

- Integration into a system of higher pressure

- P2H, Biomass, Gas and Steam Turbine

Foto: Annette Kradisch

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Thanks for your attention!