VON WIENERGIEBÜNDELN
FÜR WIENERGIEBÜNDEL:
DISTRIBUT COOLING
IN VIENNA
DISTRICT COOLING / COOLING

Motivation of Wien Energie

- Cooling is an energy product which fits perfectly to the portfolio of Wien Energie
- Cooling in the context of District Cooling offers unique selling propositions
- Extension of the value chain and expansion of our services
- Enters the opportunity to sell other products (Cross selling)
- Missing fragment to an full-service energy supplier
- Optimal use of existing infrastructure (fault-clearing service, measurement, accounting, etc.)

Additional benefit for Wien Energie in case of a district heating connection at the project site:
- Use of existing waste heat during the summer with absorption chillers
- Subsidies for the use of absorption chillers
The absorptions chillers are economically operating if they are powered by the use of pure rejected heat.

There is no „must“ für absorption chillers for cooling.
**TWO MAIN PRINCIPLES**

**Strategy**

- Wien Energie takes investments – depending on agreements and manages the operation of the cooling plant.
- Customers are charged for the load supply and for the delivered energy.

- Individual conception
- maximum efficiency
- Optimized controlling concept (with remote control)
- High security of supply

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Die Kältemaschinen werden durch Fernwärme (Absorber) oder Strom (Kompressor) betrieben, die das kalte Wasser zur Gebäudekühlung zur Verfügung stellen. Danach läuft das erwärmte Wasser in die Kältezentrale zurück, wo es wieder abgekühlt wird.

Die Rückkühlung der Maschinen erfolgt je nach Verfügbarkeit über Flusswasser oder Kühltürme.
SPITTELAU COOLING

Cooling Plant

- Cooling plant at the Waste Incineration Spittelau
- First expansion 17MW cooling capacity
- After overall completion ~40 MW

- Our customers: General Hospital Vienna (AKH), Skyline (Office blocks), Science Park of the Univ. of Natural Resources and Life Sciences (BOKU), …
SPITTELBAU COOLING

Cooling Temperatures

140°C
70°C
3.3kV
3,5°C
~14°C

Customer Heat Exchanger

4,5°C 6°C
12-16°C

DC Network

Absorption Chiller 5MW

Absorption Chiller 5MW

Compression Chiller 7MW

Flow

Return

18-24°C
30°C
SPITTELAU COOLING

Cooling Network

Muthgasse
- Plastic Jacket Pipe DN 400
- Total Cooling Capacity: 15 MW

Skyline
- Plastic Jacket Pipe DN 150
- Cooling Demand: 1,3 MW

AKH
- DN400 adapted existing pipeline (switched between summer and winter)
- Total Cooling Capacity: 12 MW
SPITTELAU COOLING

District cooling Substation at the customers site
DC PROJECTS
DISTRICT COOLING PROJECT SCHOTTENRING

- New underground garage including a cooling plant
- 15 MW cooling capacity with absorption- and compression chiller;
- Recooling with river-water out of „Donau Kanal“
- In operation since April 2013.

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CENTRAL RAILWAY STATION

- Cooling Capacity: 20 MW
- Open cooling towers in the Schweizer-garten
- 9/2014
PROJECT HOSPITAL „RUDOLFSTIFTUNG“

- Complex with an hospital built in 1970es and a new server farm (2014)
- Project for renewing the existing and combining with the new cooling plant
- Total 7,8 MW installed cooling capacity with absorption and electrical chillers
- Heat pumps use the rejected heat from the server room
- First stage of construction under operation since december 2012
PROJECT FASHION WOHLESALE STORE

- Installed cooling capacity: 2.67 MW, absorption chiller 1.700 kW, centrifugal chiller 1.000 kW
- Energy storage with groundwater: groundwater is used for recooling in the summer time (chiller) and as an energy source in wintertime (heatpump)
- Low- and High-Temperature cooling, Low- and High-Temperature Heating (Heat-pumps and district heating)
- In operation since July 2013
KRANKENHAUS NORD (HOSPITAL)

- Cooling Capacity: 3,4 MW, Absorption chillers; 6,4 MW electrical chillers
- Freecooling-Capacity: 4,0 MW
- Open cooling towers
- Ready to operate since December 2014
CONCLUSION

• District Cooling/Cooling from cooling plants is an economic business model
• Absorptions chillers powered by rejected heat is a perfect add-on
• Customers are very interested in DC
• In the complex circumstances of the cooling business (cooling demand, technical possibilities, DC network costs, etc.) a high rate of project realizations is attained.

• High planning effort
• Headlining time > 1 year
• Cooling projects require high investments

• Specialization within the organisation is necessary to match the challenges of the cooling project business
THANK YOU!