



chillii® Cooling Kit
thermal cooling



SOLARNEXT

clean energy for you

Status: September 2025



thermal cooling - with chillii® technology



Company outline

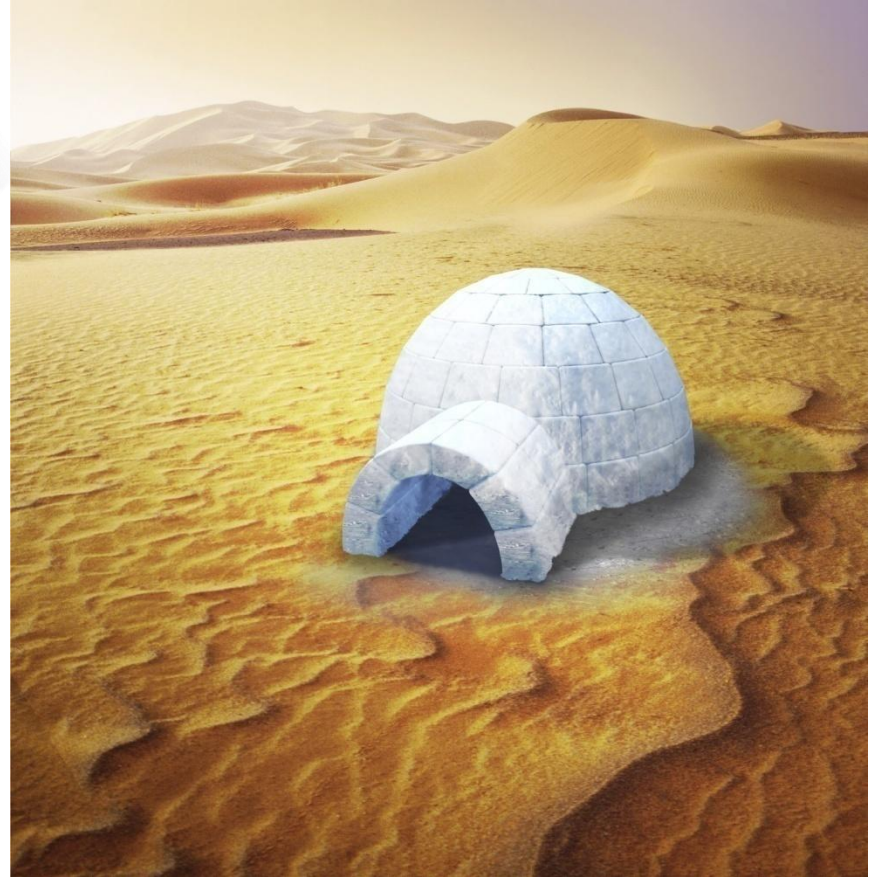
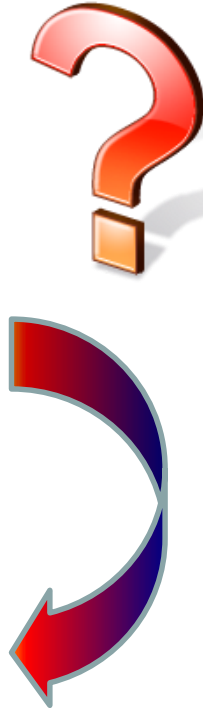
- 🌶️ Founded in 2000, Pioneer of the ‚Cooling Kit‘ solution
- 🌶️ Specialist for system solutions & systems integrator in the field of thermal cooling
- 🌶️ Design, engineering and sales as well as maintenance of thermal cooling solutions from 3 RT to 3.000 RT (10 kW to 10 MW) cooling capacity
- 🌶️ more than 100 systems realised worldwide
- 🌶️ ISO 9001 certified
- 🌶️ Received the Bavarian Energy Award in 2020 for a district cooling solution



Headquarter at Bernau am Chiemsee



From **Heat** ➡ **Cooling**



Compression chiller vs. Absorption chiller

	Compression chiller	Absorption chiller
Refrigerant	Mainly HFCs (Hydrofluorcarbons) now also CO ₂ (only medium capacity)	Water with LiBr as absorbents
Cooling capacity	1 kW – 20 MW (per module) 0.3 RT – 5,700 RT (per module)	18 kW – 10,000 kW (per module) 5 RT – 2,850 RT (per module)
Chilled water temperatures	-40°C to +20°C (flow temperature)	+4°C to +20°C (LiBr-chiller)
COP (th)		0.65 – 1.50 (LiBr-chiller)
COP (el)	2 - 5	15 - 20



Compression chiller – Energy flow diagram

Electricity generation



Source: Wikipedia

Compression refrigeration



Office
air-conditioning



Electrical energy

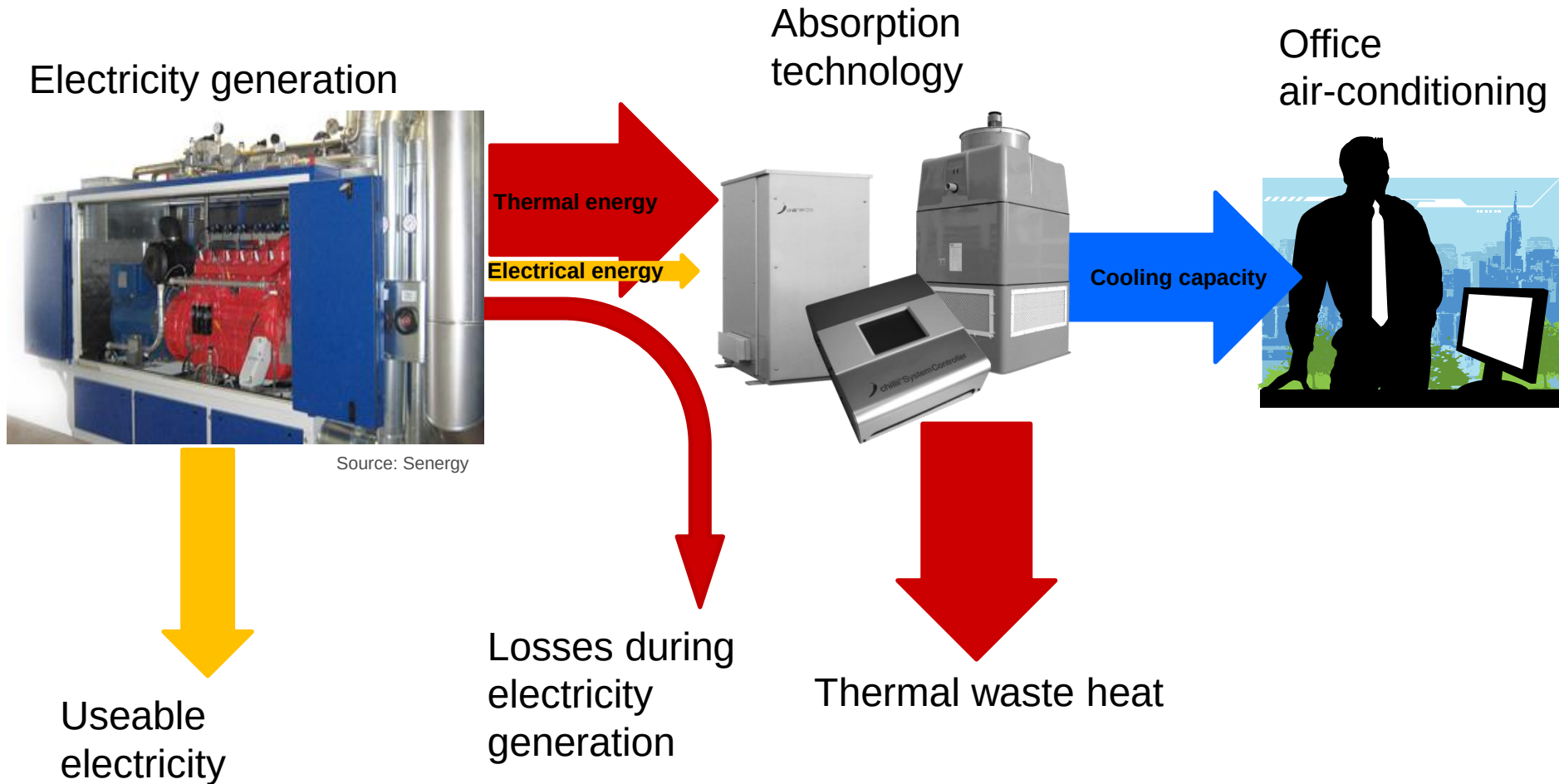
Cooling capacity

Losses during
electricity
generation

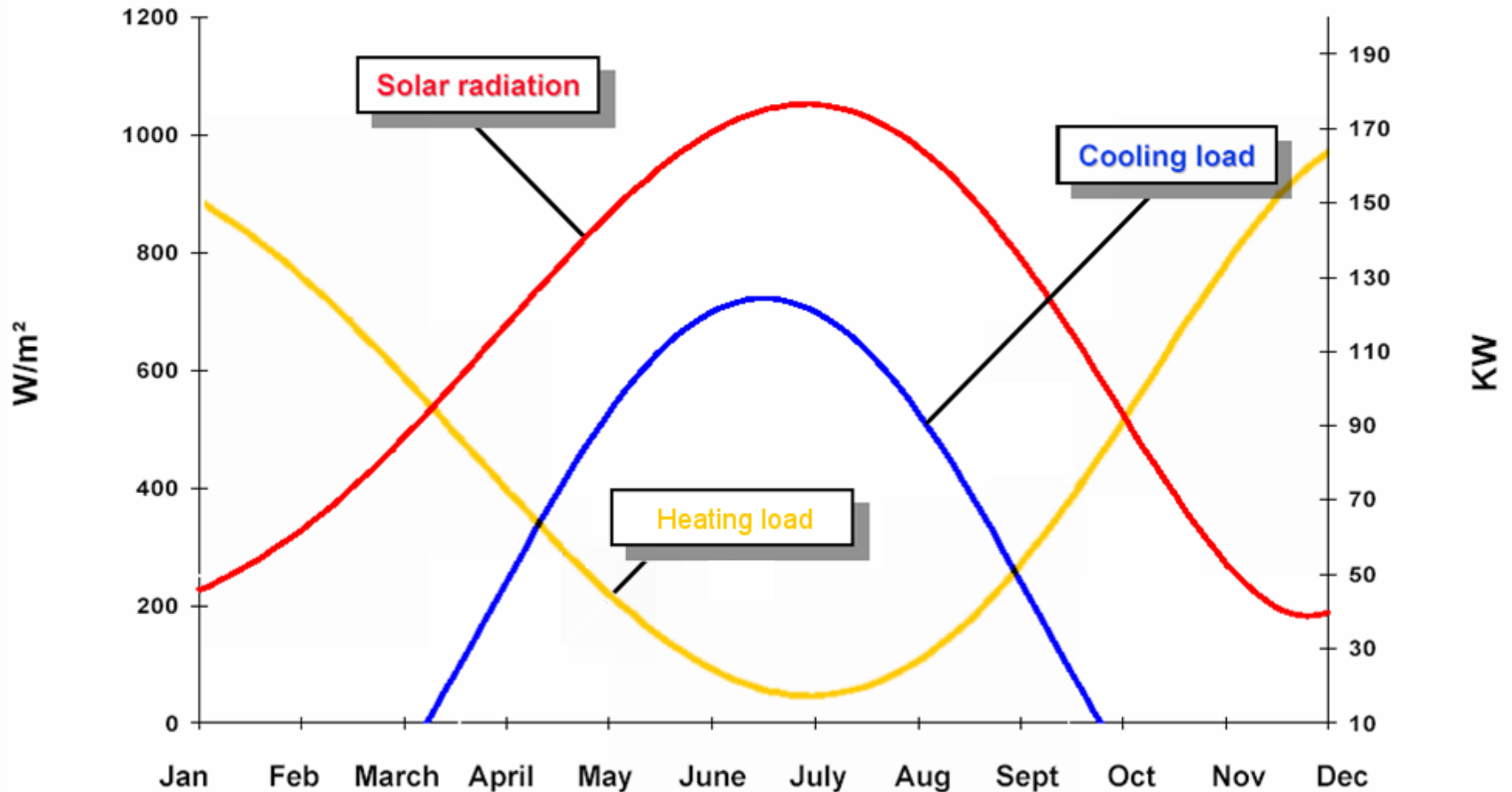
Thermal waste heat



Trigeneration – CHP + Absorption chiller – Energy flow diagram



(Solar)Thermal cooling – Covering cooling requirements

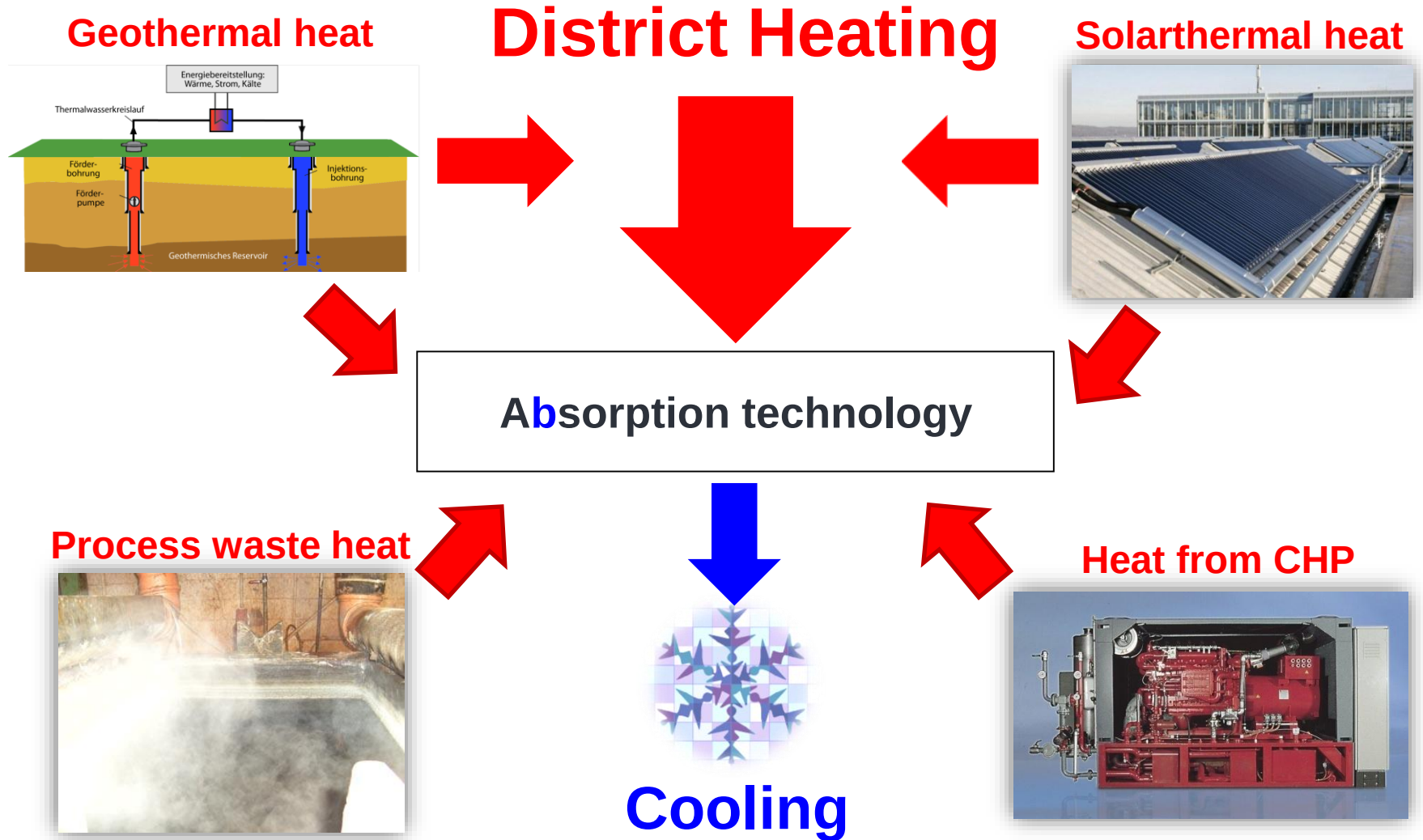


Advantages of absorption chillers compared to compressor-based cooling systems

- 🌶 less electricity consumption (> 75% of savings regarding electricity costs)
- 🌶 lower operating costs (because of very few mechanical components)
- 🌶 non-usage of refrigerants as CFCs and HCFCs for cooling that are typically associated with ozone layer damaging greenhouse gas emissions
- 🌶 lack of issues related to mechanical vibrations
- 🌶 stable coefficient of performance (COP)
- 🌶 easy maintenance and longer life time
- 🌶 environmental-friendly solution



Heat sources for sorption cooling





Components of a chillii® Cooling Kit



Absorption chiller



Re-cooling system



Pumps and mixer



Optional: Cold and
hot water storage





chillii® Cooling Kits – Type of chillers offered (1)

Type of chiller	Hot water absorption chiller	Hot water absorption chiller	Low temperature hot water absorption chiller	Steam absorption chiller	Steam absorption chiller
Mode of work	Single effect	Single effect double lift	Double lift	Single effect - low pressure	Double effect - medium pressure
Driving temperature	80 – 120 °C	85 – 95 °C	70 – 80 °C	0 – 2 barG	4 – 8 barG
Delta T	10 – 40 K down to 70°C	30 – 40 K down to 55°C	10 – 40 K down to 60°C	down to 90°C	down below 90°C
Cooling capacity	30 – 2000 RT 105 – 7000 KW	30 – 2000 RT 105 – 7000 KW	30 – 2000 RT 105 – 7000 KW	50 – 2000 RT 175 – 7000 KW	100 – 2000 RT 350 – 7000 KW
COP thermal (up to)	0.82	0.7	0.4	0.8	1.45





chillii® Cooling Kits – Type of chillers offered (2)

Type of chiller	Direct fired absorption chiller & heater	Direct fired absorption chiller & heater	Steam fired maritime absorption chiller	Exhaust Gas fired absorption chiller	Hybrid chiller Exhaust gas & hot water
Mode of work	Double effect – gas fired	Double effect – fuel fired	Double effect	Double effect	Double effect (exhaust gas) Single effect (hot water)
Driving temperature	up to 450 °C (Exhaust gas) up to 165 °C (steam)	up to 450 °C (Exhaust gas) up to 165 °C (steam)	up to 165 °C (6 barG)	up to 450 °C	up to 450 °C (Exhaust gas) up to 95 °C (hot water)
Delta T	down to 120 °C (exhaust gas) down below 90°C (hot water)	down to 120 °C (exhaust gas) down below 90°C (hot water)	down to 120 °C (exhaust gas)	down to 120 °C	down to 120 °C (exhaust gas) 10 – 20 K (hot water)
Cooling capacity	50 – 1500 RT 175 – 5250 kW	50 – 1500 RT 175 – 5250 kW	50 – 1100 RT 175 – 3850 kW	50 – 1500 RT 175 – 5250 kW	350 – 1250 RT 1225 – 4375 kW
COP thermal (up to)	1.48	1.48	1.2	1.45	1.1 – 1.2





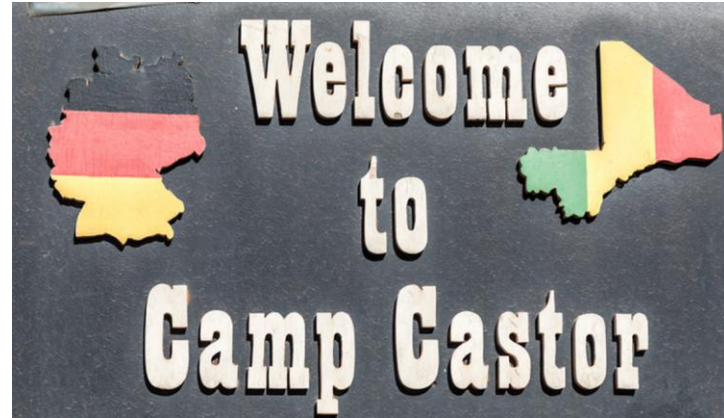
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Excerpt of References



chillii® Cooling Kit HLC350adb

Air-conditioning for a new cafeteria & kitchen (3,500 sqm), Mali, 2022



Quellen: Bundeswehr, UN

-  **chillii® Cooling Kit HLC350adb**
-  Heat source: **450 kW solar thermal heat**
-  Chiller: **chillii® HLC350** (water / lithium bromide), 348 kW cooling capacity
-  Adiabatic recooling unit with performance control

-  **CO₂ emissions reduced by 100%**
-  **Power consumption reduced by 100%** because usage of PV and solar thermal collectors



chillii® Cooling Kit HLC350adb

Air-conditioning for a new cafeteria & kitchen (3,500 sqm), Mali, 2022



chillii® Cooling Kit HLC220adb

Air conditioning of a new-built urban quarter, Bavaria, 2020



Stadt Rosenheim



stadtwerke
rosenheim

Sources: City of Rosenheim, City works of Rosenheim

-  **chillii® Cooling Kit HLC220adb**
-  Heat Source: district heating
-  Chiller: **chillii® HLC220** (water / lithium bromide), 220 kW cooling capacity
-  Adiabatic recooling unit with performance control

-  **CO₂ emissions reduced by 85%**
-  **Power consumption reduced by 87%** because usage of district heating



chillii® Cooling Kit HLC220adb

Bavarian Energy Award 2020 – Category ‚Regional Energy Concepts‘



https://youtu.be/TTNJkm4e_S4



chillii® Cooling Kit HLC220adb

Air conditioning of a new-built urban quarter, Bavaria, 2020



chillii® Cooling Kit WFC175

Process Cooling of a factory, Baden Wuerttemberg, 2019

TIBERINA-Group


WAGON
AUTOMOTIVE



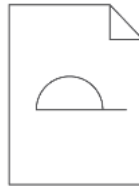
Quality

ISO 9001 / ISO TS 16949



Environment

ISO 14001



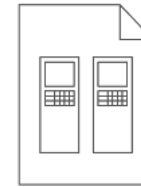
**Health and
Safety**

BS OHSAS 18001



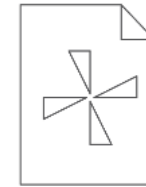
**Ethic and Social
Responsibility**

SA 8000



**Information
Security**

ISO IEC 27001



**Energy /
Management**

ISO 50001

Source: TIBERINA Group

chillii® Cooling Kit WFC175

-  Heat source: combined heat and power unit (CHP) + heat from air compressors
-  Chiller: **chillii® WFC175** (water / lithium bromide), 175 kW cooling capacity
-  Adiabatic recooling unit with performance control

 **CO₂ emissions reduced by 92%**

 **Power consumption reduced by 85% because usage of CHP and waste heat from air compressors**



chillii® Cooling Kit WFC175

Process Cooling of a factory, Baden Wuerttemberg, 2019



chillii® Cooling Kit WFC175

Process Cooling of a factory, Baden Wuerttemberg, 2017



Source: CERATIZIT



Source: CERATIZIT

2 chillii® Cooling Kit WFC175

-  Heat source: combined heat and power unit (CHP)
-  Chiller: **2 chillii® WFC175** (water / lithium bromide), 350 kW cooling capacity
-  Adiabatic recooling units with performance control

CO₂ emissions reduced by 85%

-  **Power consumption reduced by 85%** because usage of cogeneration unit (CHP)



chillii® Cooling Kit WFC175

Process Cooling of a factory, Baden Wuerttemberg, 2017



chillii® Cooling Kit WFC175

Process cooling and air-conditioning of a factory, Thuringia, 2012



Source: VELUX



Source: VELUX

2 chillii® Cooling Kit WFC175

-  Heat source: process heat (by usage of industrial waste)
-  Chiller: **2 chillii® WFC175** (water / lithium bromide), 350 kW cooling capacity
-  Wet cooling tower with performance control and automatic draining in danger of frost
-  **CO₂ emissions reduced by 90%**
-  **Power consumption reduced by 94%** because usage of waste heat from production



chillii® Cooling Kit WFC175

Process cooling and air-conditioning of a factory, Thuringia, 2012





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Thank you for your attention

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