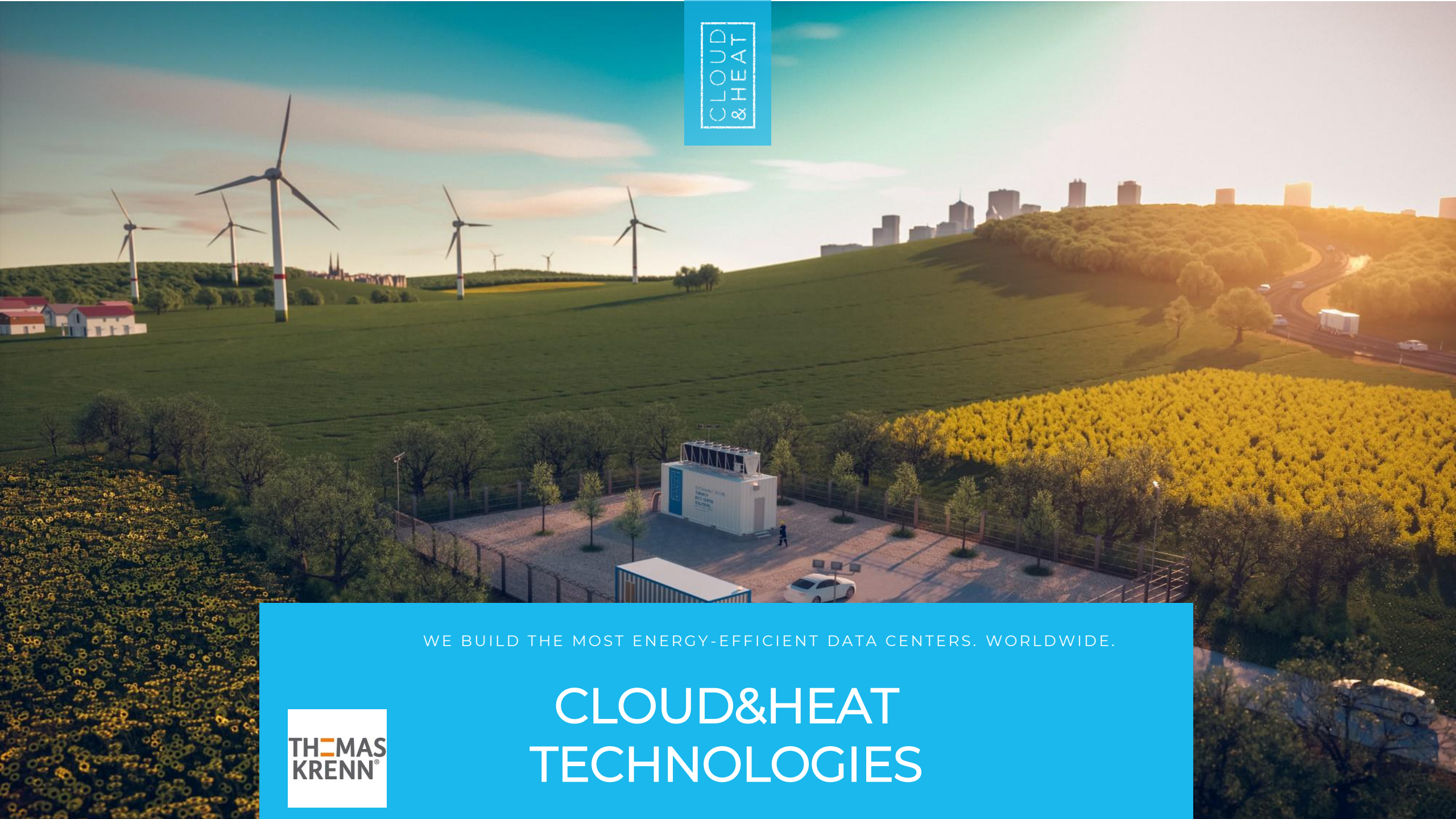


CLOUD&HEAT

WE BUILD THE MOST ENERGY-EFFICIENT DATA CENTERS. WORLDWIDE.

CLOUD&HEAT TECHNOLOGIES

THOMAS KRENN®

THE FUTURE OF COMPUTE

CLOUD&HEAT

Since 2011, Cloud&Heat's vision has always been to make sustainability and security drivers of digital innovation.

We develop, build and operate energy-efficient, scalable and secure IT infrastructures that meet the requirements of the digital future.

CLOUD&HEAT

WHO WE ARE

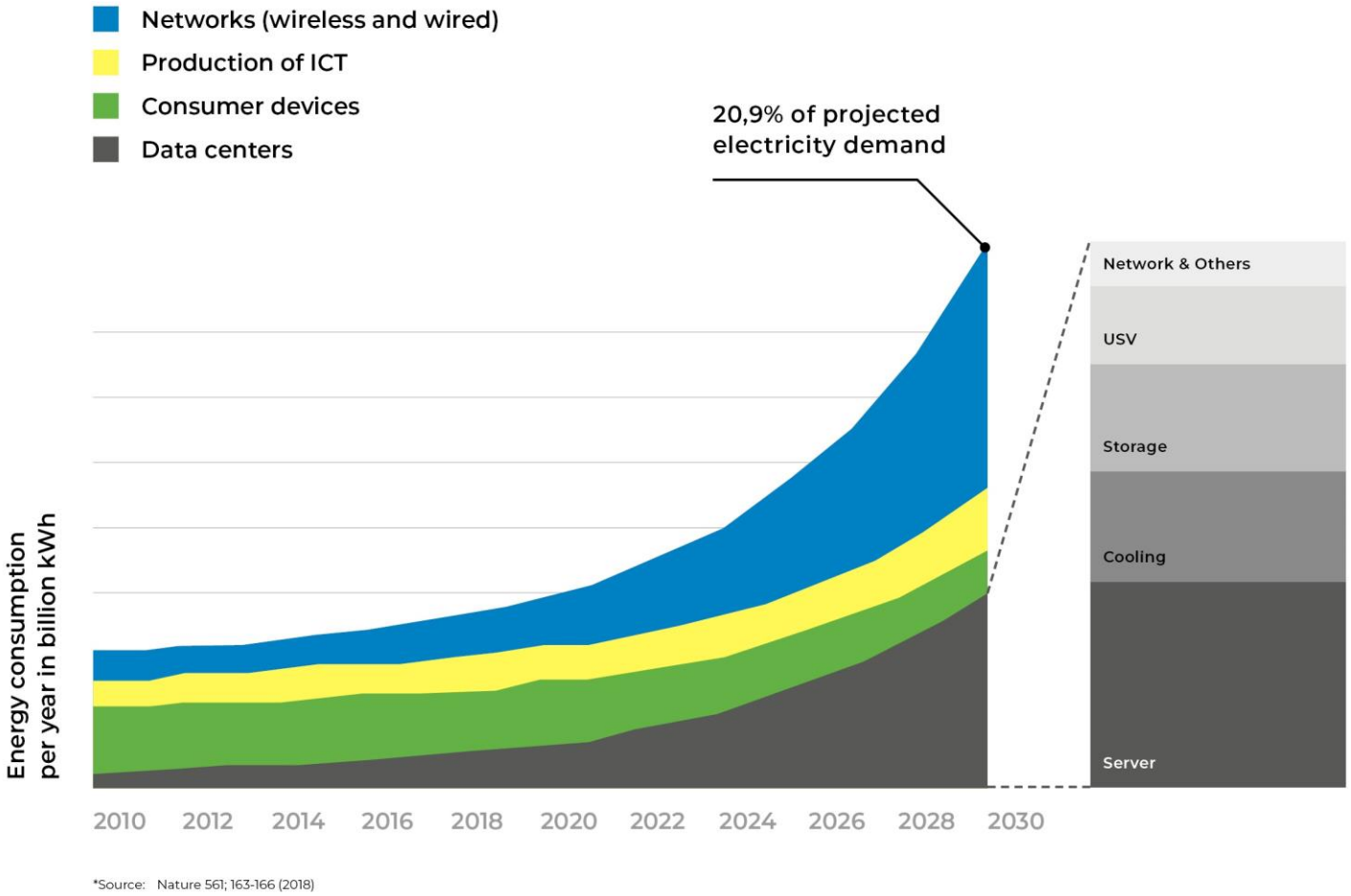
CLOUD&HEAT IN NUMBERS

3	80	>€20M	8
LOCATIONS	EMPLOYEES	FUNDING	MW
Germany, Argentina and Dubai	From 10 different countries	Received from renowned investors (ETF, Inven, VNG, etc.)	Installed IT capacity in Europe and Asia

CLOUD & HEAT

RISING DEMAND

ENERGY FORECAST



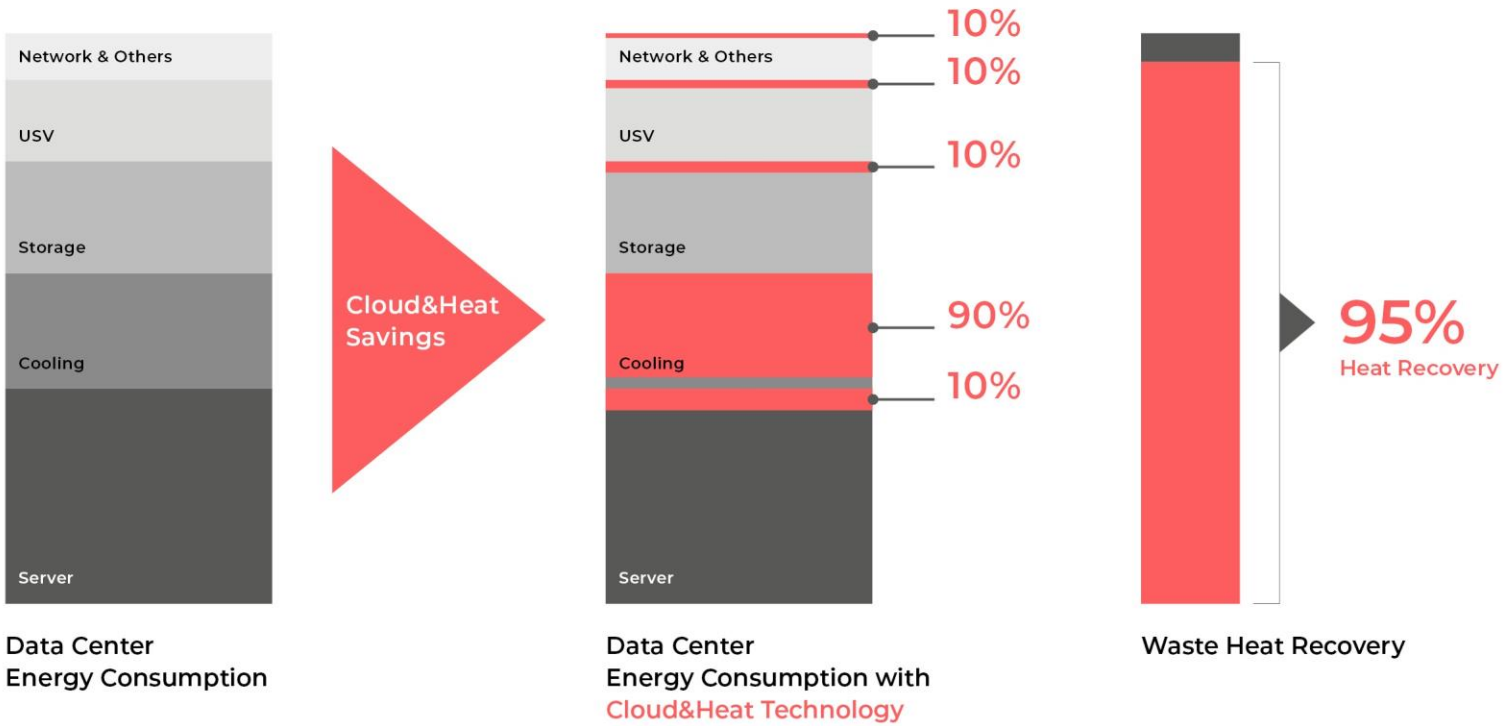
*Source: Nature 561; 163-166 (2018)

The growing demand for digitalization comes with a downside: an increase in energy consumption. This in turn effects our climate.

Data centers especially are a big contributor which must be addressed.

HUGE POTENTIAL

SAVINGS WITH CLOUD&HEAT



Data Center
Energy Consumption

Data Center
Energy Consumption with
Cloud&Heat Technology

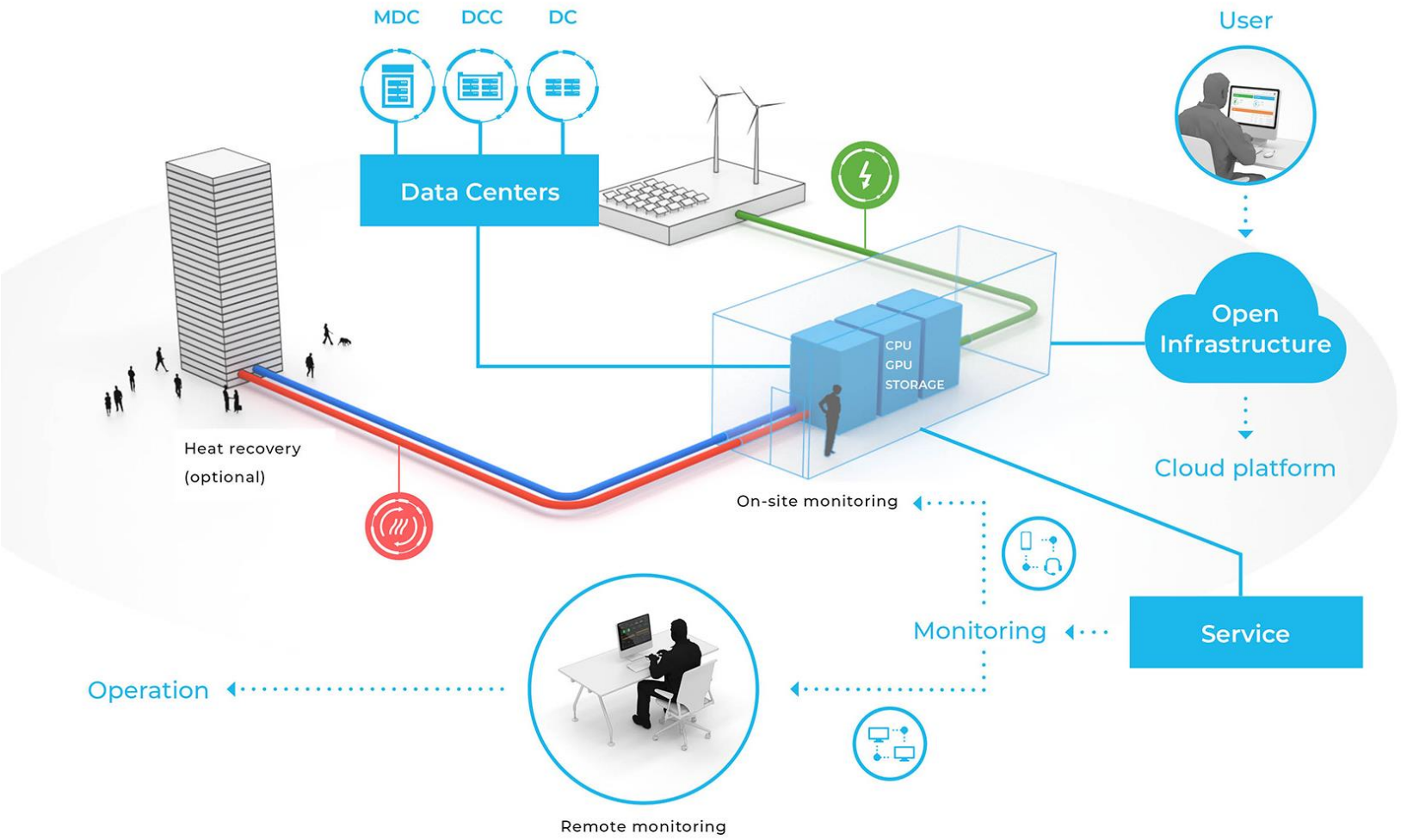
Waste Heat Recovery

*Source: Borderstep (Hintemann; 2018)

Conventionally cooled data centers have peaked in energy-efficiency. In our opinion, that still isn't good enough.

Our water-cooled alternatives are more efficient, increases the life of the components and provide a green heating source.

CLOUD & HEAT



ONE-STOP-SHOP

OUR SERVICES

We value long-term partnerships, and work alongside our clients during the planning, construction and operation of their IT infrastructures.

CLOUD & HEAT

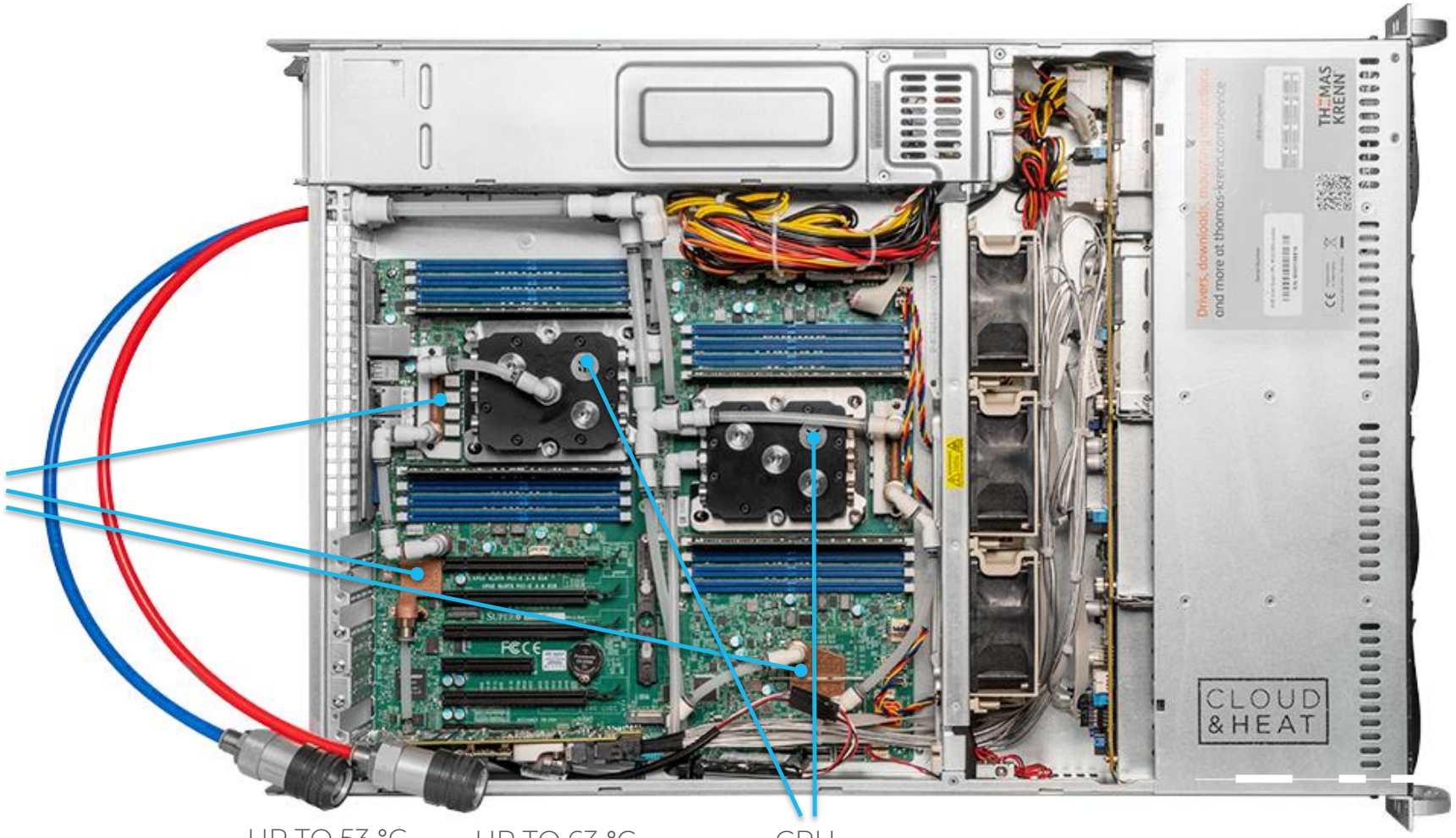
ONE-STOP-SHOP

MICRO TO MACRO OUR SOLUTIONS

By combining sophisticated hardware and intelligent cloud software, our solutions not only save energy and costs, but also significantly reduce the carbon footprint of data centers.

TECHNOLOGY

DIRECT HOT WATER COOLING

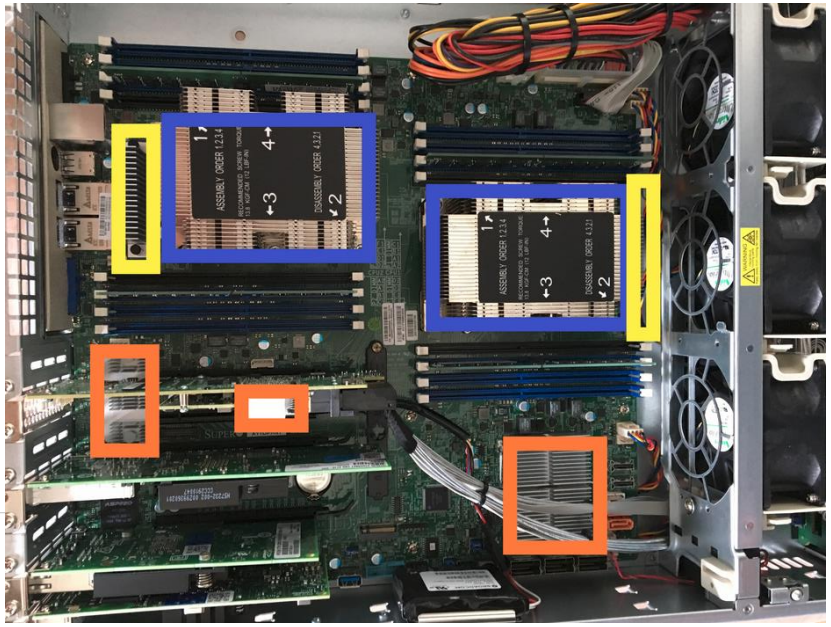


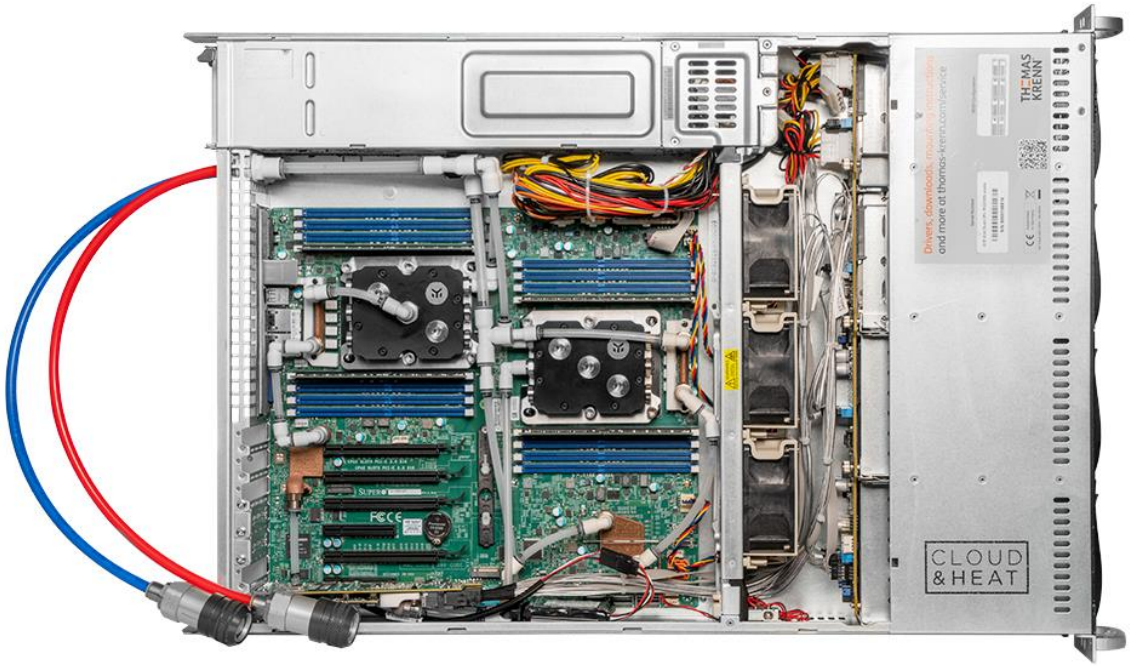
THOMAS KRENN®

RI-2208-LCS

CAPTURING 90% OF THE
EMITTED HEAT
PER WATER COOLED CHIP

CLOUD &HEAT

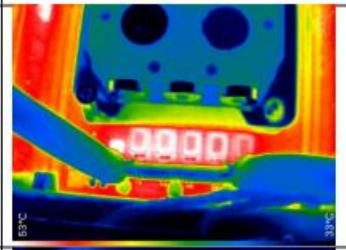
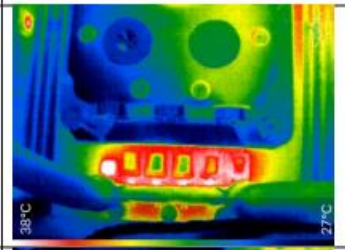
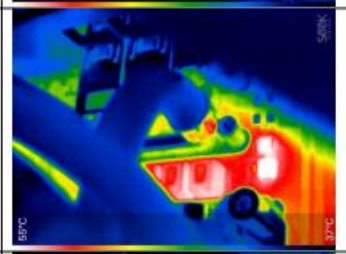
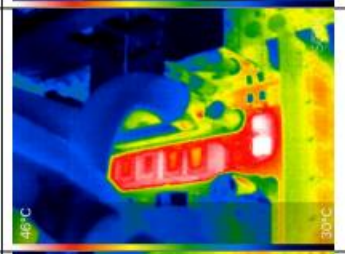
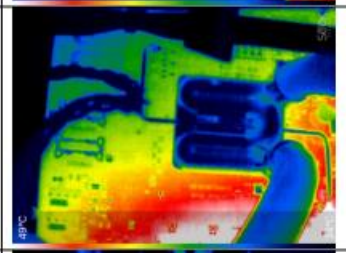
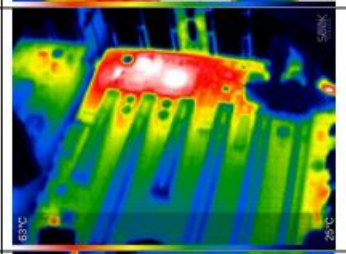
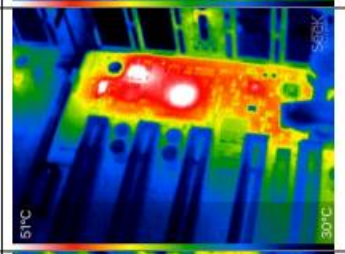
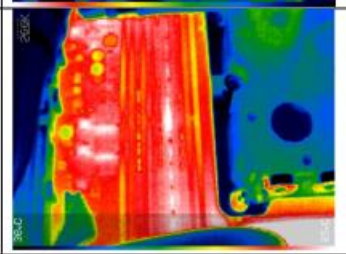
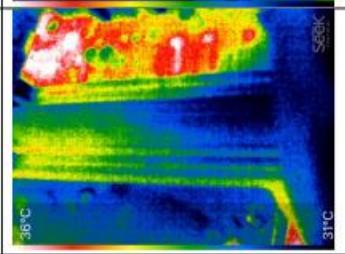




THE FUTURE IS GREEN

RI2208-LCS

THOMAS KRENN®

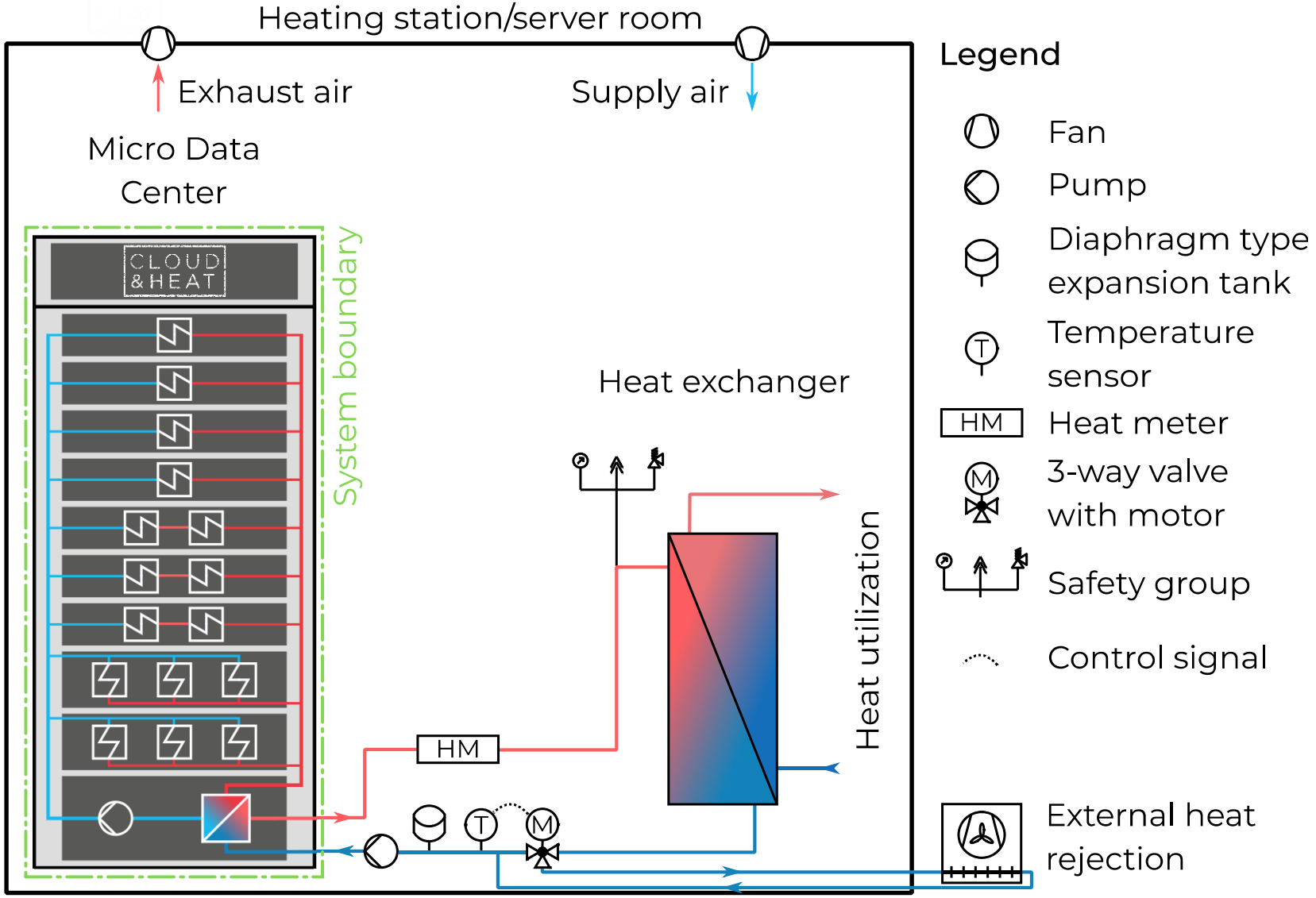
Bauteil	Wasserkühlung ohne Lüfter	Wasserkühlung mit Lüfter
EPU1		
EPU2		
Chipsatz		
PCI		
RAM		
Geräuschpe	60dB(A)	66dB(A)

THE FUTURE IS GREEN

HotFlad

THOMAS KRENN®

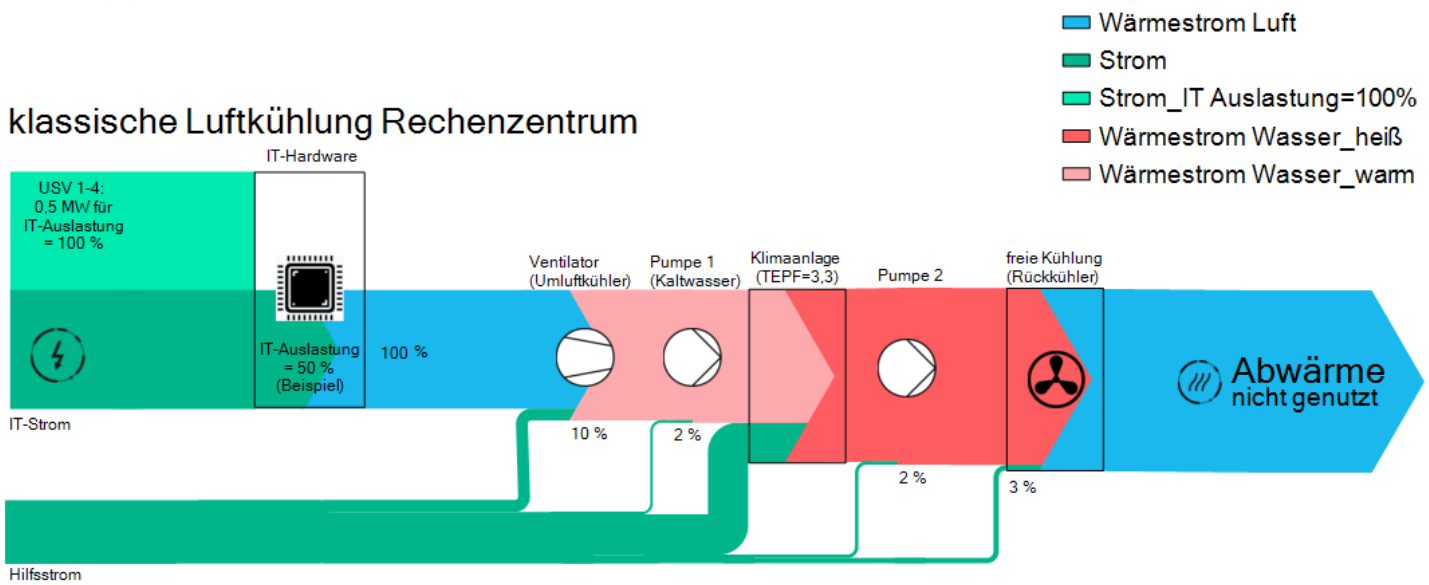
C&H übernimmt im Auftrag von Th. Krenn deren Entwicklungspakete im Forschungprojekt HotFlad. Darin geht es in einem Strang um den Aufbau eines wassergekühlten MDC im Forschungsrechenzentrum des HRI, der TU Berlin und in einem zweiten Strang um die Weiterentwicklung von flüssigkeitsdurchströmten Kühlkörpern.

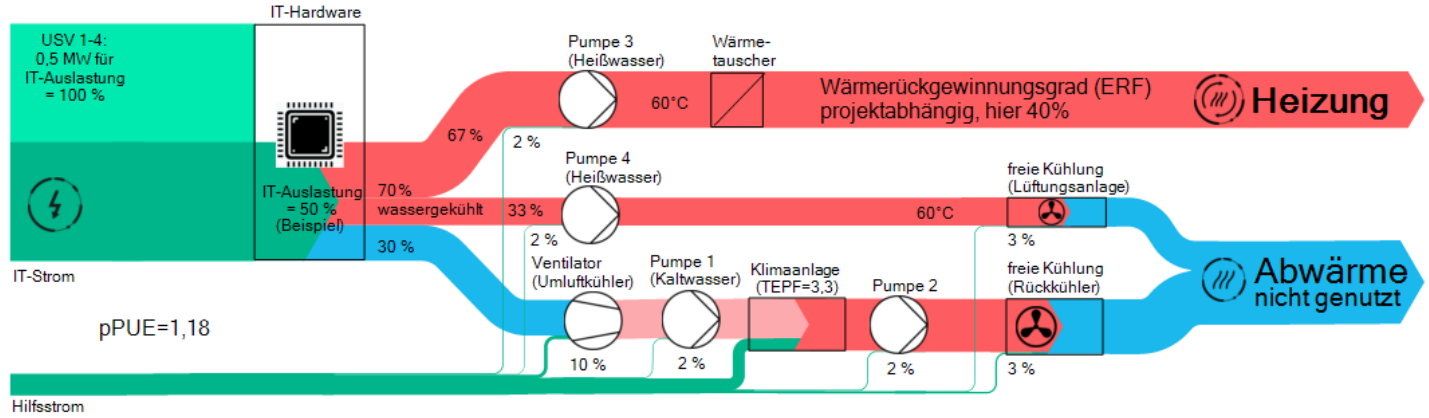


OUR SOLUTIONS

HOT WATER COOLING

Cloud&Heat uses direct water cooling for all kinds of different hardware on a temperature level up to 65 °C. This is the key to an efficient reuse of heat produced in data centers.





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MICRO DATA CENTER

SMALL AND MIGHTY

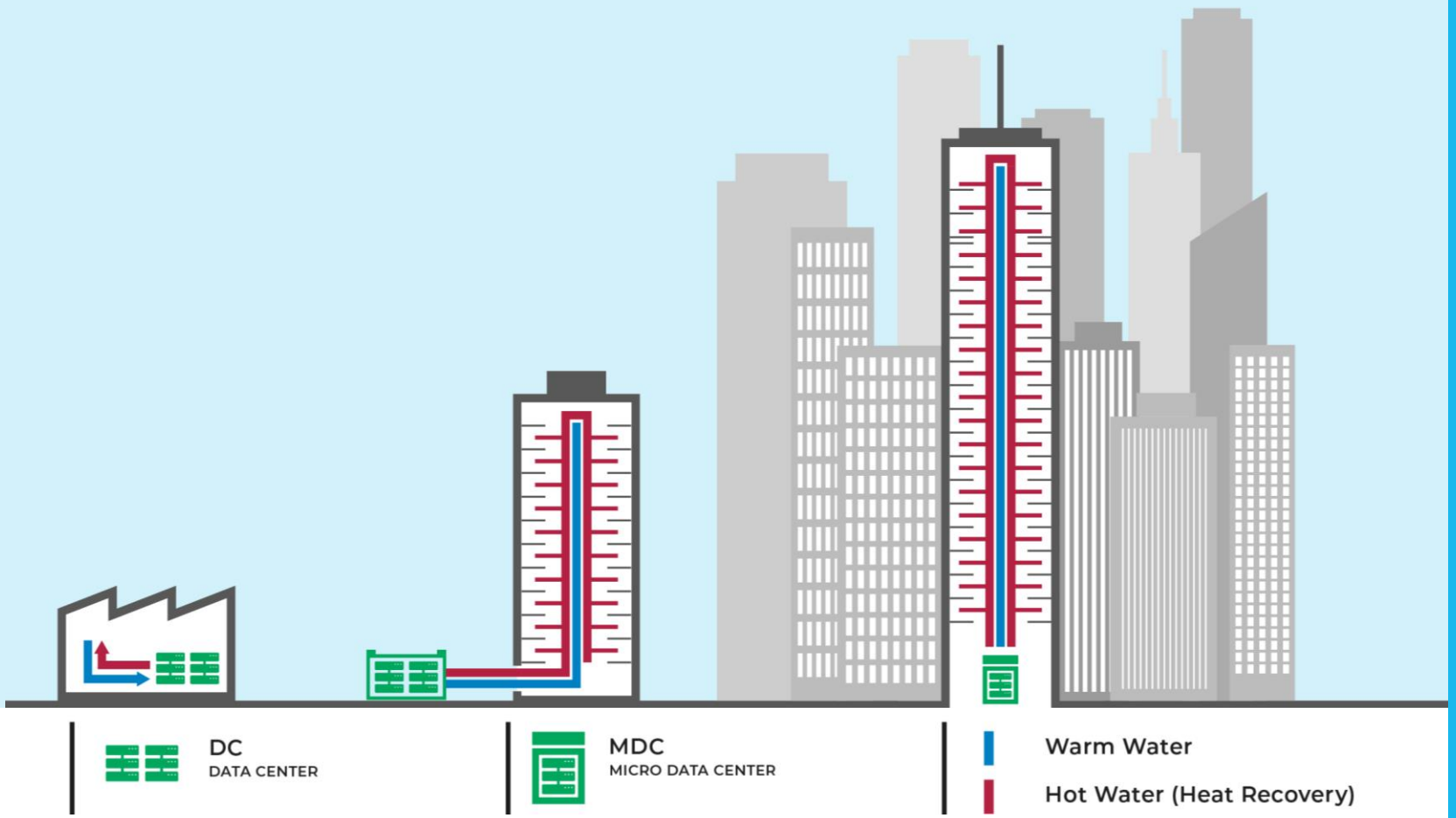
The Micro Data Center (MDC) is a modular data center rack designed for large-scale, on-site projects. The compact and ultra-silent MDC can be installed as a self-sufficient server.

DATA CENTER CONTAINER

VERSATILE DEPLOYABLE POWER

The Data Center Container (DCC) is a versatile solution designed for projects requiring rapid deployment, without compromising on energy-efficiency.

CLOUD & HEAT



HEATING OFFICES AND HOMES

WASTE HEAT RECOVERY

By using hot water to cool IT components, we are able to transform high energy-consuming servers into heat-producing assets that can be used to heat buildings or entire districts.

CLOUD&HEAT

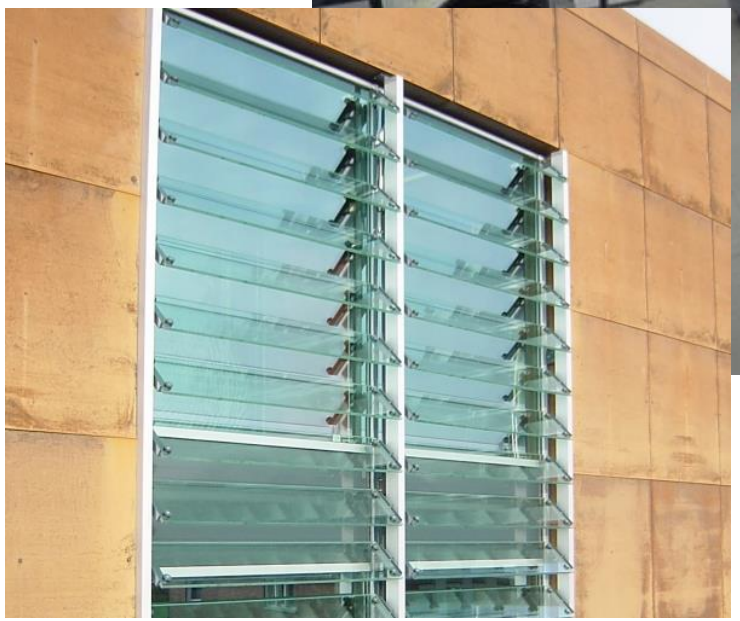
FRANKFURT (2017)

DATA CENTER IN FRANKFURT

- Saved cooling costs: 190,000€/p.a.
- Saved heating costs: 65,000€/p.a.
- Total: 255,000€/p.a.

- CO_2 reduction: 710 tons/p.a.
- Equals 90 football fields of forest

CLOUD & HEAT



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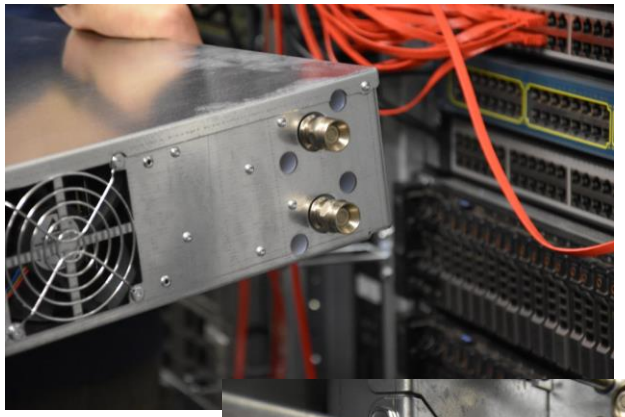

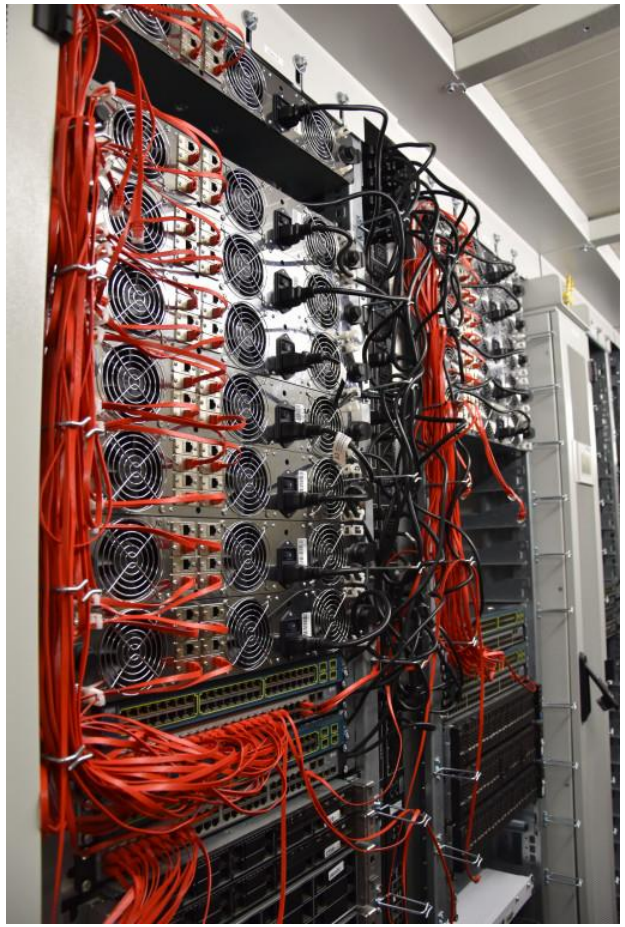

Cologne, GERMANY (2019)

RENDERING CONTAINER 21” DESIGN

- 480 GPU’s in a 20” container (385kW load)
- Server and cold plate design
- Project planning and manufacturing
- Onsite installation and configuration

TOKYO, JAPAN (2018)

GREEN DATA CENTER CONTAINER

- Container data center, housing 240 GPU-nodes, connected to a solar park
- On-site commissioning and local personal training
- Remote access and control system

Customer
Inabata & Co., Ltd.

FUTURE OF COMPUTE

CLOUD&HEAT TECHNOLOGIES