
Colocation.Green
HPC / AI Colocation & Web Services
@
Sustainable Places 2020

What we offer

HPC Colocation

Energy

Customer

Advantages

HPC Data Center

Integrated energy the future of HPC

What I am talking about

- ME
- My past & present Data Center companies
- The Why & How to measure CO2
- How we enable sustainable HPC
- How we recover Heat

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Advantages

My personal DC history

Firmen in Nordfriesland

windcloud

Windcloud Braderup

windcloud

Windcloud 4.0 https://windcloud.org

Colocation.Green https://colocation.green

My personal DC history

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Windcloud Braderup

Windcloud 4.0 https://windcloud.org

Colocation.Green https://colocation.green

Underlying Idea: Use cheap Wind energy to create sustainable & competitive solutions.

Start with WHY

Compute Power

consumption forecast to exceed global energy production by **2040.**

(Semiconductor Ind. Assoc.,2015)

E-waste.

2016 e-waste = 49m tons, growing to 57m tons in **2021**

(United Nations University)

Mineral mining

"The future of electronics may depend on deep sea mining for minerals"

(All about Circuits)

Data Centers

powering AI/ML could account for **10%** of global electricity demands by **2025**

(MIT)

CO2 emissions

of digital increased by **450m** tons since **2013** in OECD countries, while globally CO2 emissions decreased by **250m** tons over the same period.

(Shift Project)

Greenhouse Gas.

GHG of digital on track to go from **4%** to **8%**

(UMass)

We face a crisis in climate & in the economy

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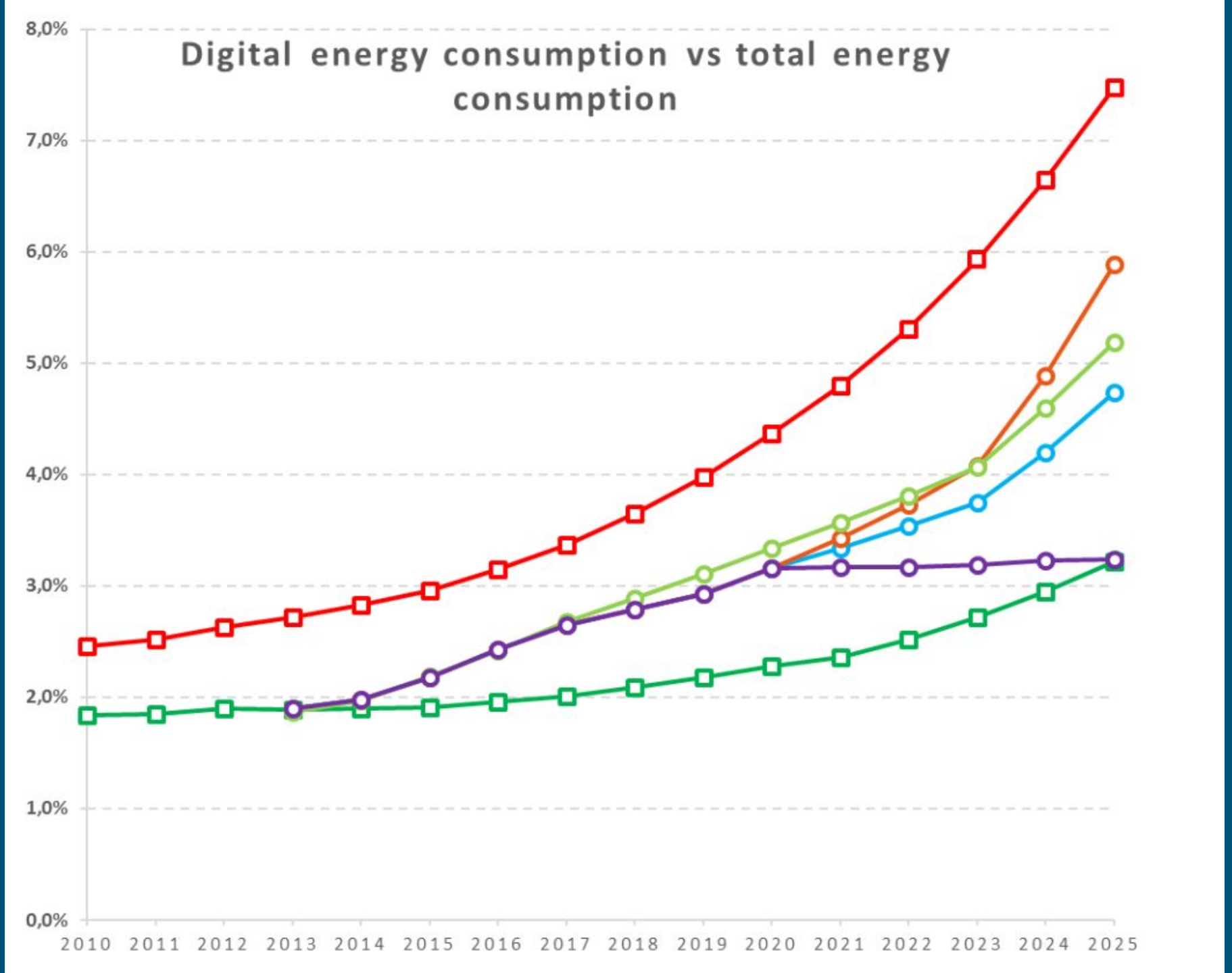

How to measure carbon emissions, communicated through the medium of hot beverages

Scope 1

Emissions from burning fossil fuels to make hot coffee

Scope 2

Emissions from electricity generated on your behalf, to make coffee

Scope 3

Emissions from activity in your supply chain, so you can have coffee

Measuring carbon emissions - Green Web Foundation

How to measure carbon emissions, in the data center

Scope 1

Emissions from burning fossil fuels, running the backup generators

Scope 2

Emissions from electricity.
Solved!

Scope 3

Emissions from supply chain, Sourcing of servers, construction of DC, Travel

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Our Solution to climate health

Modular Data Centers with high efficient component, customised for your IT Application. Direct renewable energy feed from windfarm grid.

Reuse of IT heat into community heat grid & other process use cases.

Some Math:

Scope 1: 1g/ kWh

Scope 2: 21.9g/kWh = 28g/kwH

Scope 3: 5 g/kWh

Compare to German Average

409 g/kWh

Savings compared to german national energy mix: 381 g/kWh

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Some Math:

Scope 1: 1g/ kWh

Scope 2: 21.9g/kWh = 28g/kwH

Scope 3: 5 g/kWh

Savings by reuse of heat

We can reuse 70% of our electrical energy

Potential saving through not burning gas

46,5 g/kWh x 0,7

28g/kWh – 32,55g/kWh = **–4,55 g/kWh**

This makes us carbon positive!

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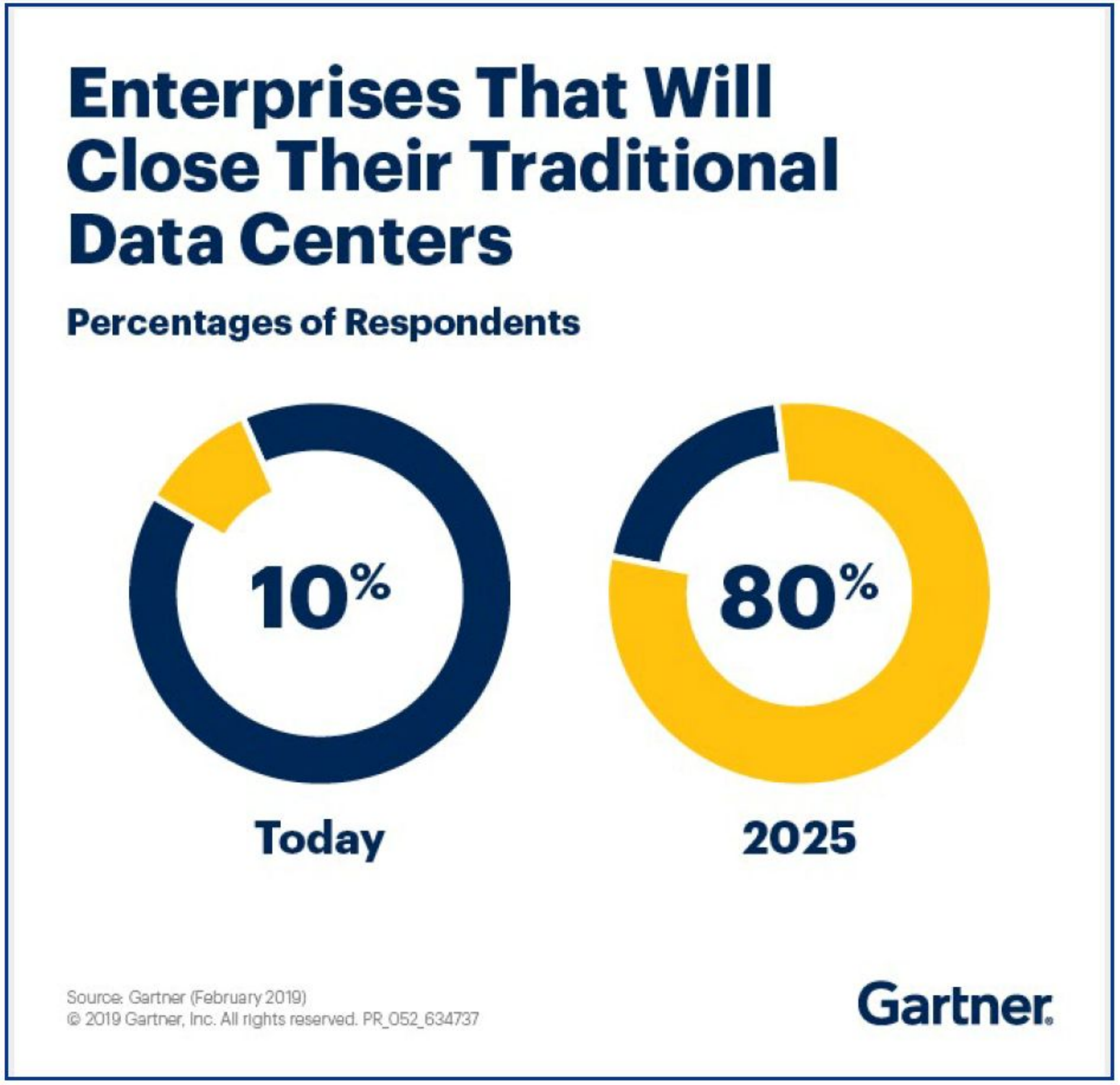
Why a Colocation Provider



Customers

Market focus

Germany:

High energy cost

Many HPC Projects

High data security level

Migration of HPC projects to scandinavia

Big-Data projects have to stay in Germany


3.45 MW WEA
Modul fundations
300 MW Switchyard


3.45 MW WEA
My home
Pig farm,
Biogas,
cereal dryer
Modul Fundamente
300 MW Switch yard

Energy setup

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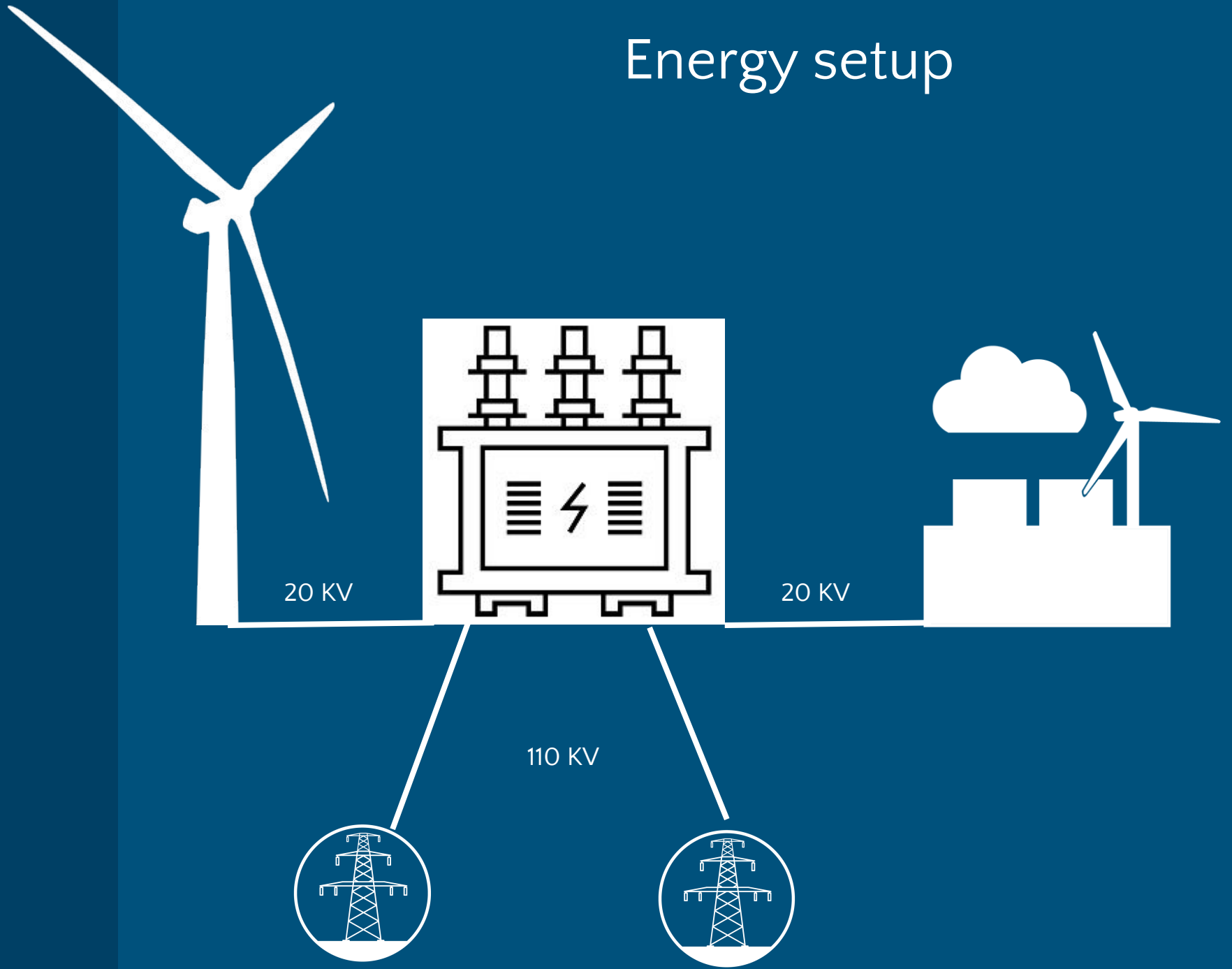
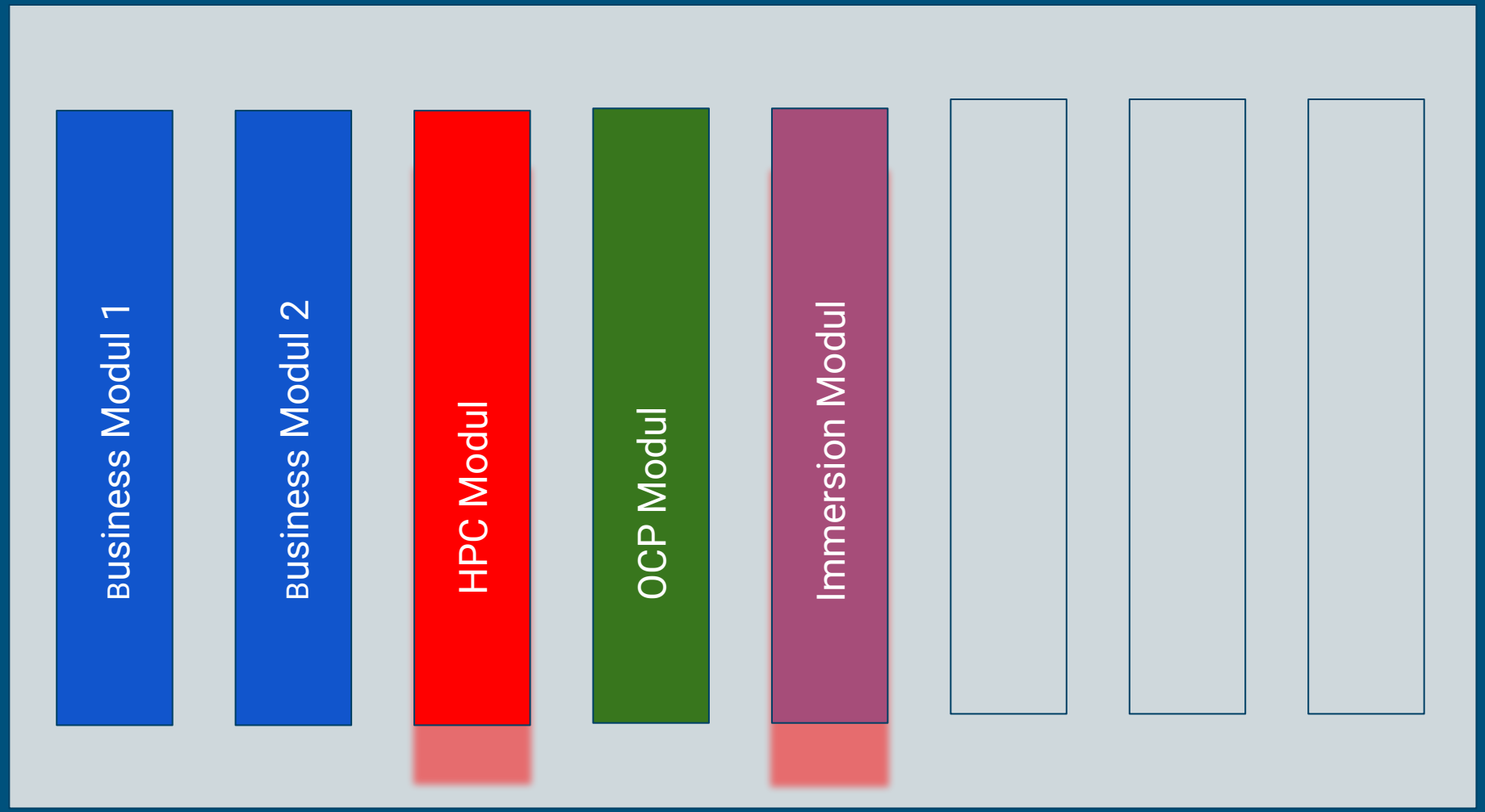


HPC Modules



2,5 MW Leistung, PUE Standort >1,05

Data Center Site Reußenköge

What we offer

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Advantages

40 Racks, 200 kW, Air-cooled

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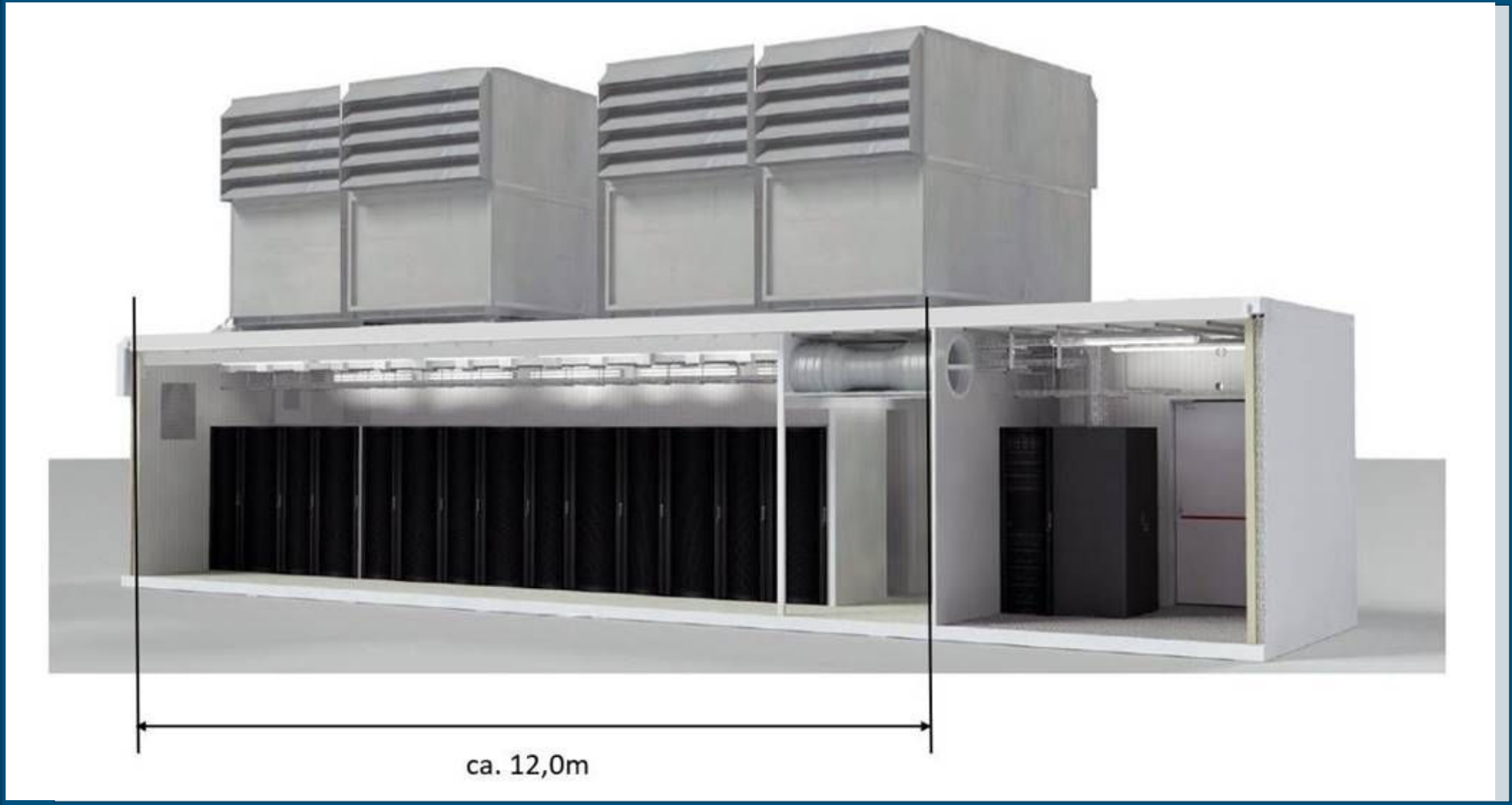

15 Racks, 250+ kW, OCP Luftgekühlt

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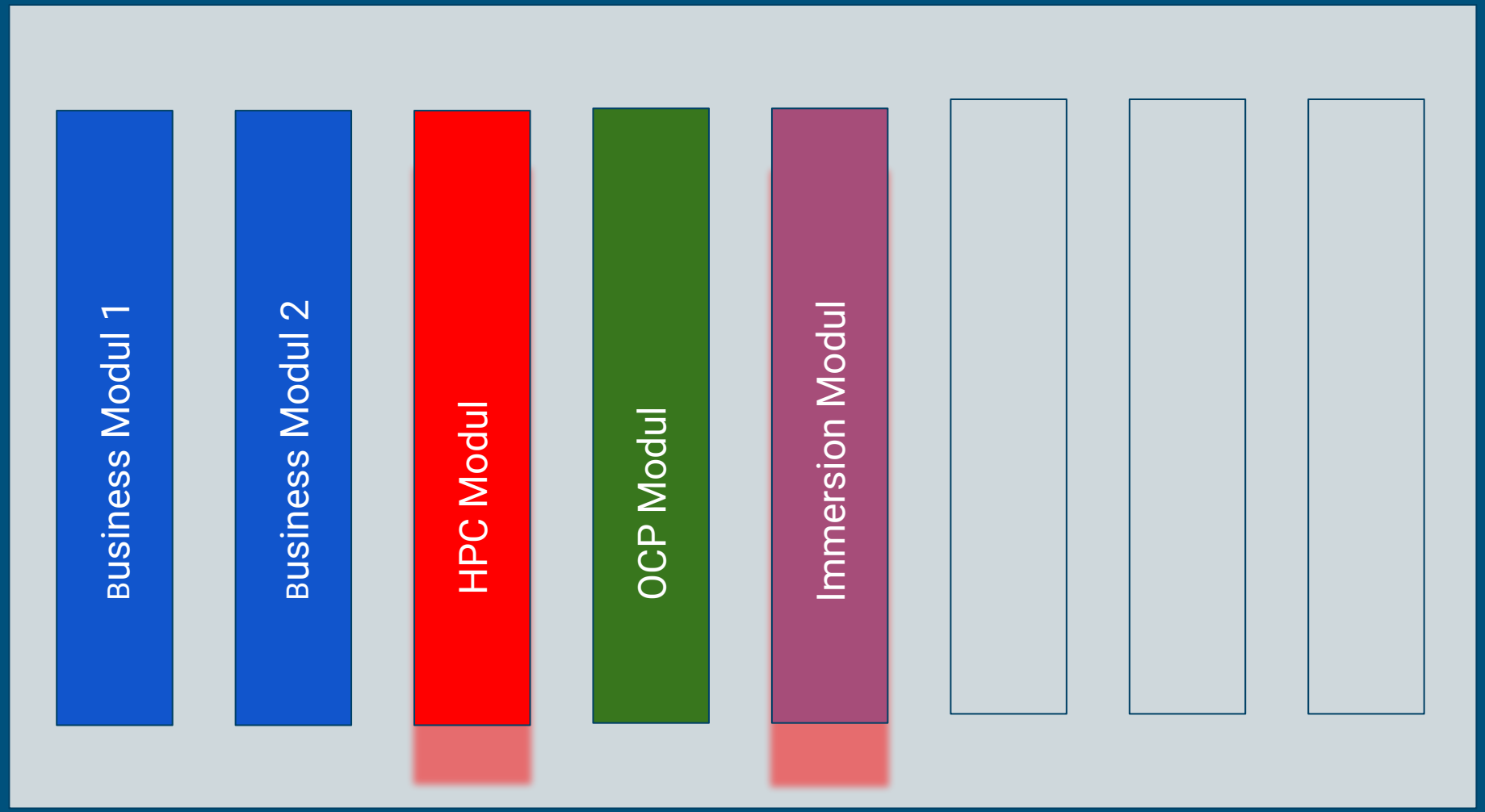
HPC Modules



2,5 MW Leistung, site PUE >1,05

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Advantages

Data Center Site Reußenköge

20 Racks, 950 kW, Direct-to-Chip, 60° Out

Data Center Site Reußenköge

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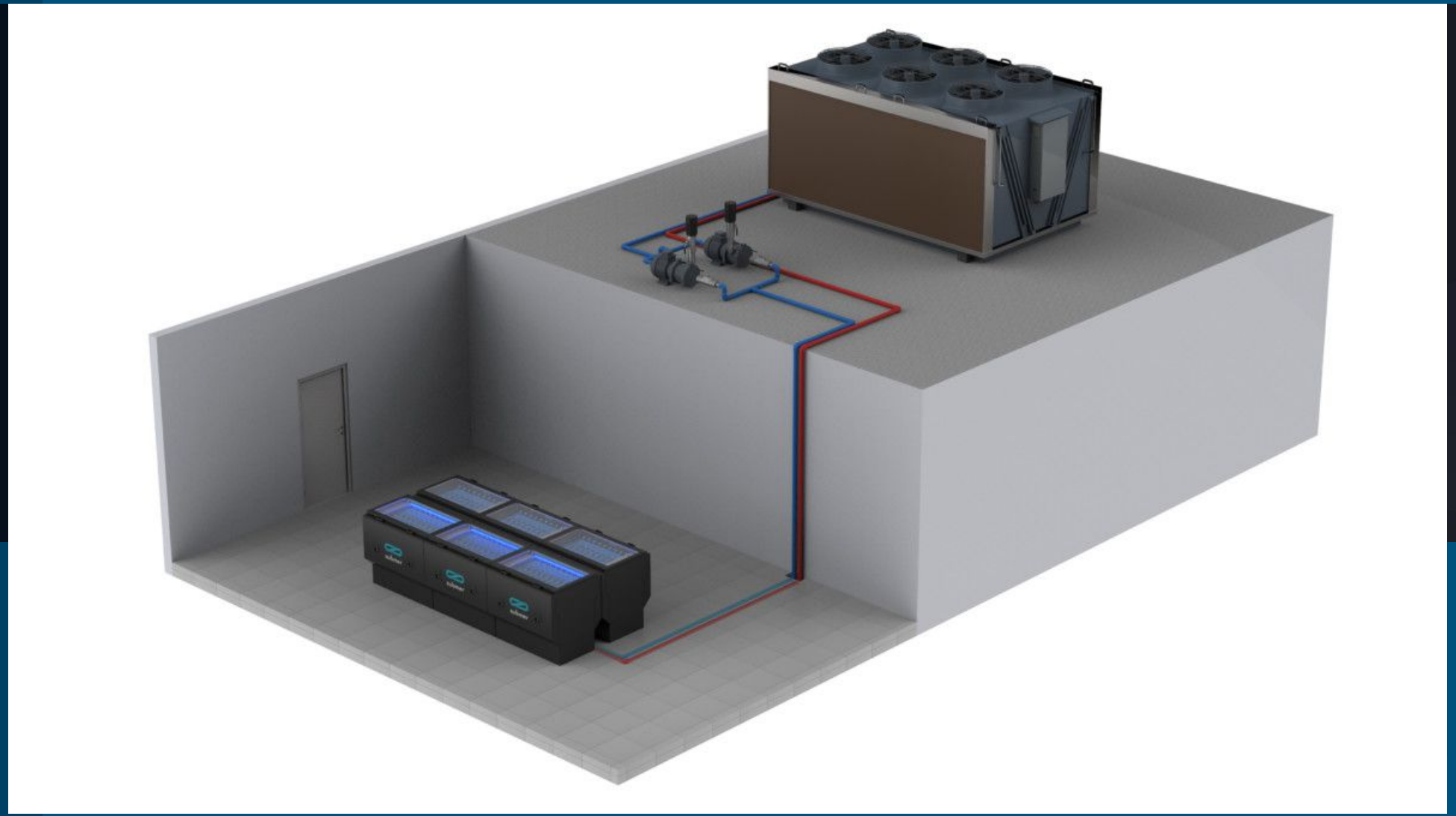
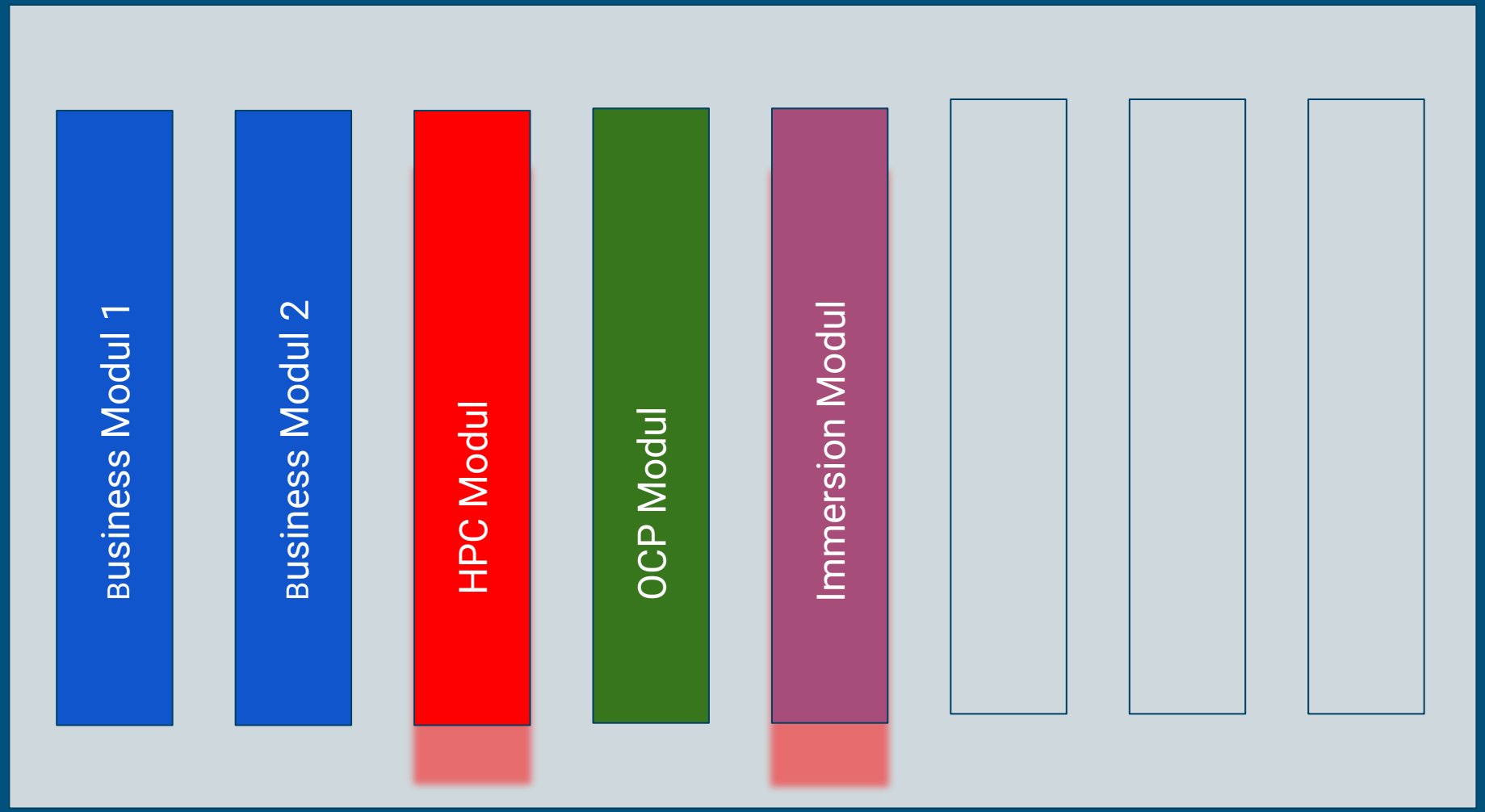
Advantages



18 Tanks, 900+ kW, Warm water upto 70°

HPC Modules



2,5 MW Capacity, Site PUE >1,05

Data Center Site Reußenköge

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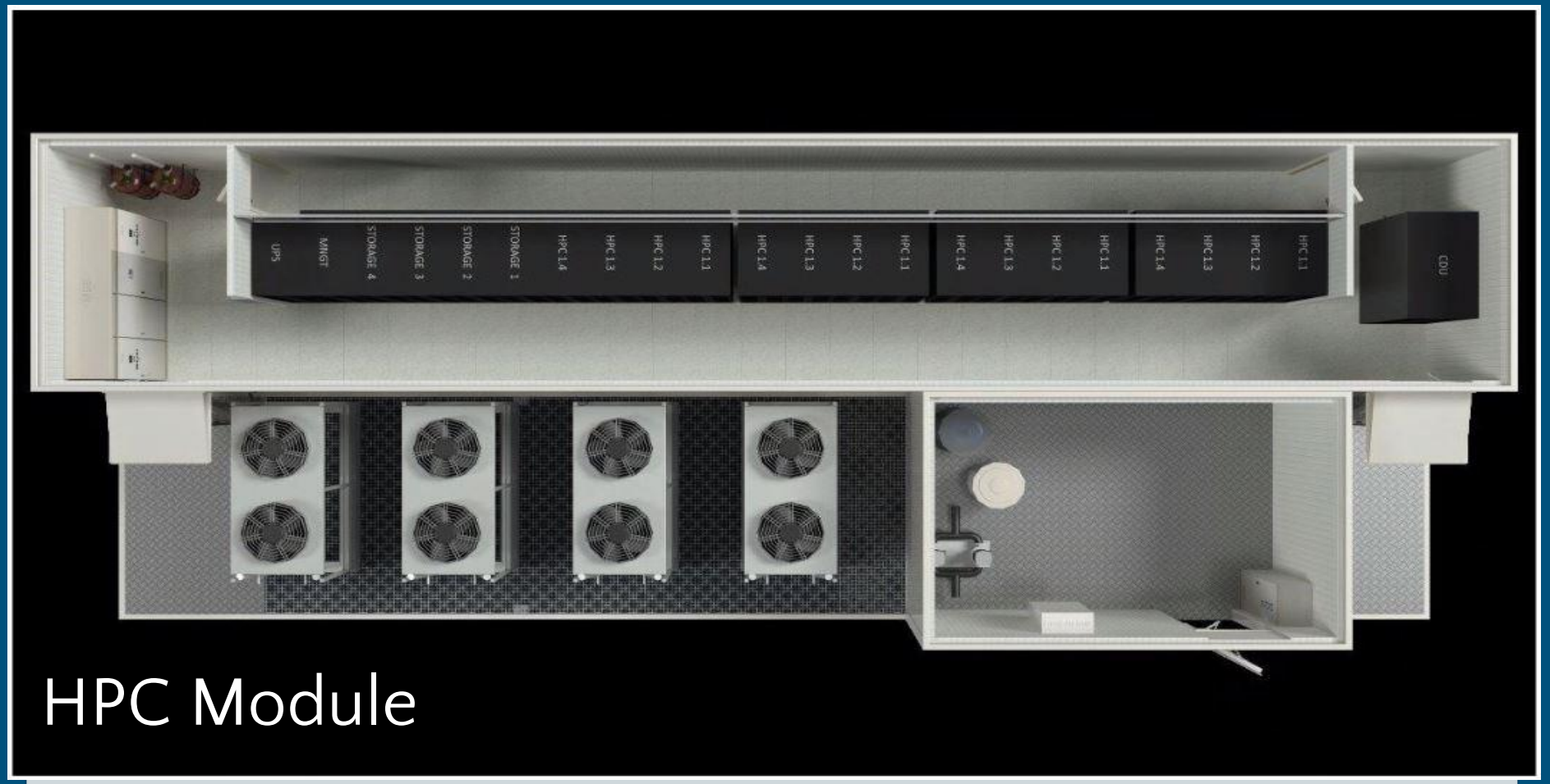
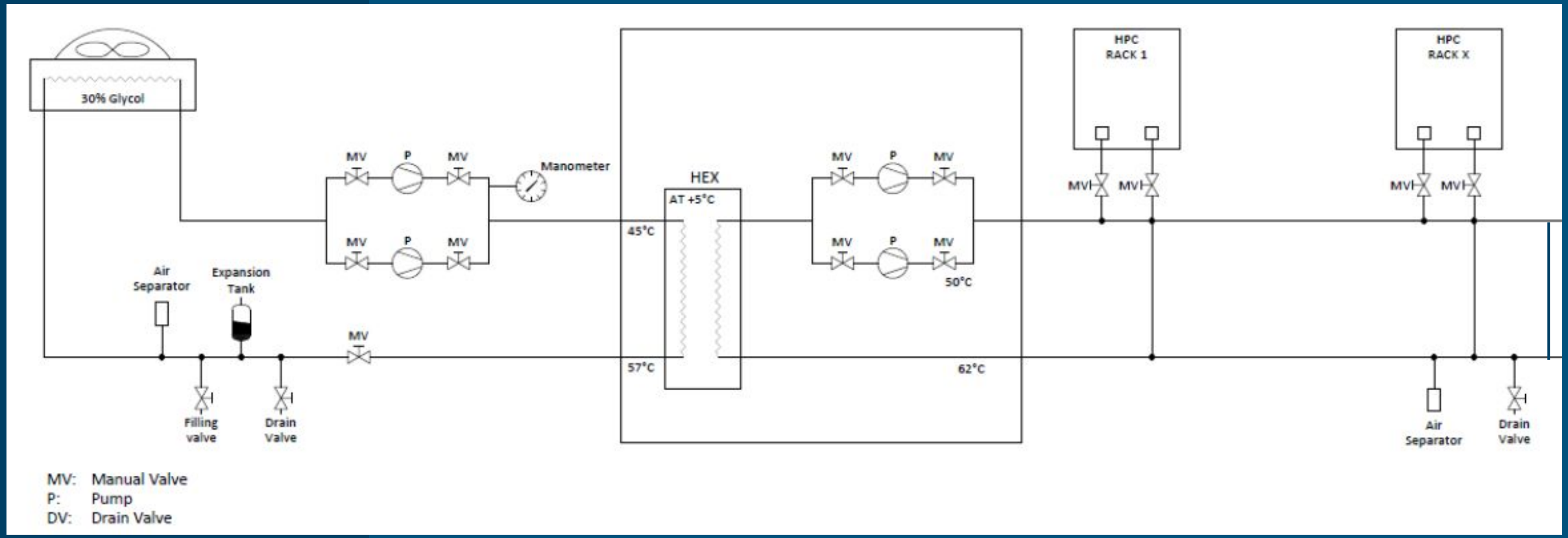


HPC Module

20 Racks, 950 kW, Direct-to-Chip, 60° Out

What we offer

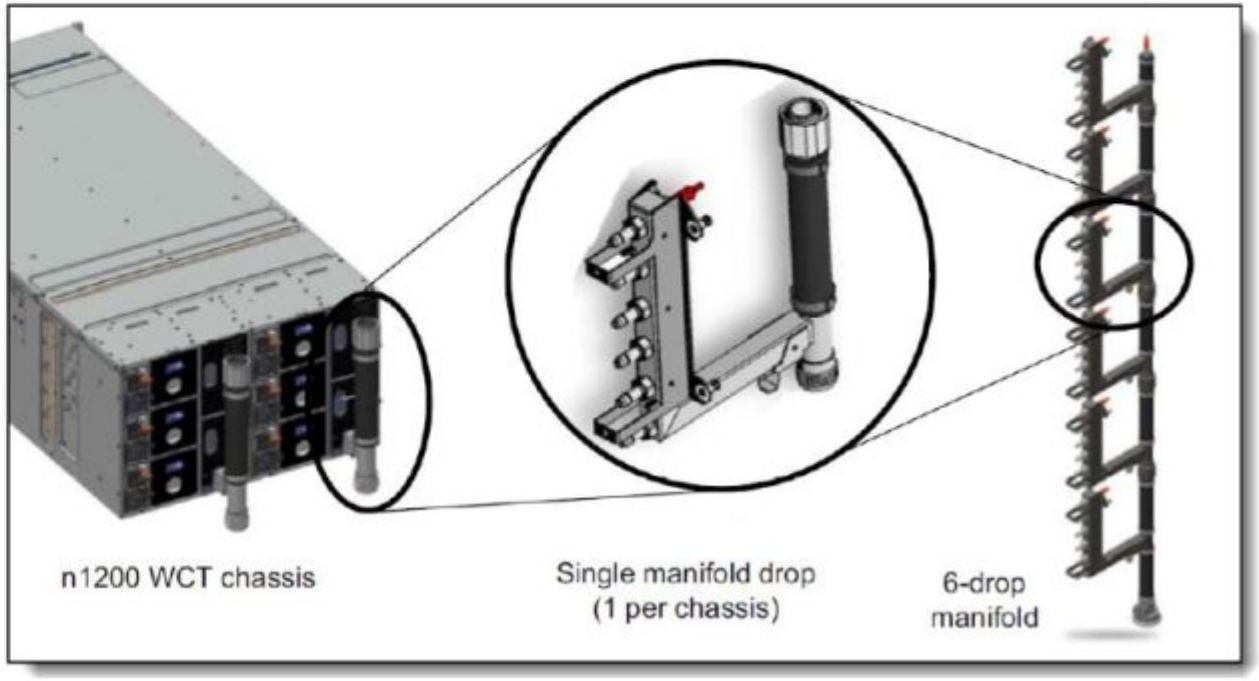
Water cooling setup



Re-use of Heat e.g. community heat grid, commercial area, process heat for green houses

What we offer

Water cooling setup



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Advantages

Modular HPC Colocation

Features

- up to 850 KW HPC Container Module
- direct or indirect free cooling 24/365 and 100 % renewable wind power
- up to 150 kW per Rack with direct CPU Water cooling
- 19" Racks, OCP Racks, Immersion Modules enabled
- rear door cooling possible
- High capacity floors
- built to order
- N+1 Water cooling upto 50° C inlet temperature
- Physical security zones, monitored 24/7

Benefits

- up to 70 % reduction in power costs
- Enterprise-level resiliency at an ultra low price point
- Highly optimised. ultra-high density colocation environments
- slab flooring allowing for industrial scale high performance computing
- Flexible Rack System up to 52U height
- Onsite energy substation provides increased power reliability
- High-intensity HPC and AI workload-ready
- Options for UPS and battery supported backup available

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Advantages

Modulare Business Colocation

Features

- Holt/cold aisle containment
- indirect free cooling 24/365 an 100 % renewable wind power
- 5 kW per rack indirect free cooling
- fully redundant (N+1) for critical systems incl. utility feeds & feeds to rack
- N+1 cooling system
- direct liquid cooling enabled
- Modular data center customised and build to the given AI / HPC / IT Workloads.
- Highly secured and always monitored (24/7 onsite Security center).

Benefits

- power and cooling scalable from single-rack to multi-megawatt
- 100% renewable power resulting in highly stable prices
- Up to 10 year visibility on electricity pricing
- Large number of national and international carriers connected to Colocation.Green
- Location: No space limitations for up to 200+ MW workload
- Smart hands and numerous IT services offered 24/365
- ISO 27001: 2013 certified, EN50600 in preparation
- Ultra low PUE und CUE valuation
- 100 % Uptime, optionally guarantee
- Lowest TCO in Germany

Summary

The path to carbon free IT

Run DC'S on renewable wind energy.

Design and operate the most effective and efficient modular Data Centers.

Enable re-use heat by liquid cooling.

Create a sustainable eco system around our Data Center.

Profitability

lowest OpEx

significantly lower CapEx

Best TCO for HPC customers

Sustainability

100 % green energy

No certificates greenwashing.

Reporting of CO2 savings.

Circular energy systems

Efficiency

Best PUE value for HPC through water cooling.

minimal loss through UPS

Lean Built-to-Order as per your application

Thank you!

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Colocation.Green

HPC / AI Colocation
Business Colocation
Web Services
Cloud Storage
Private Cluster

contact us