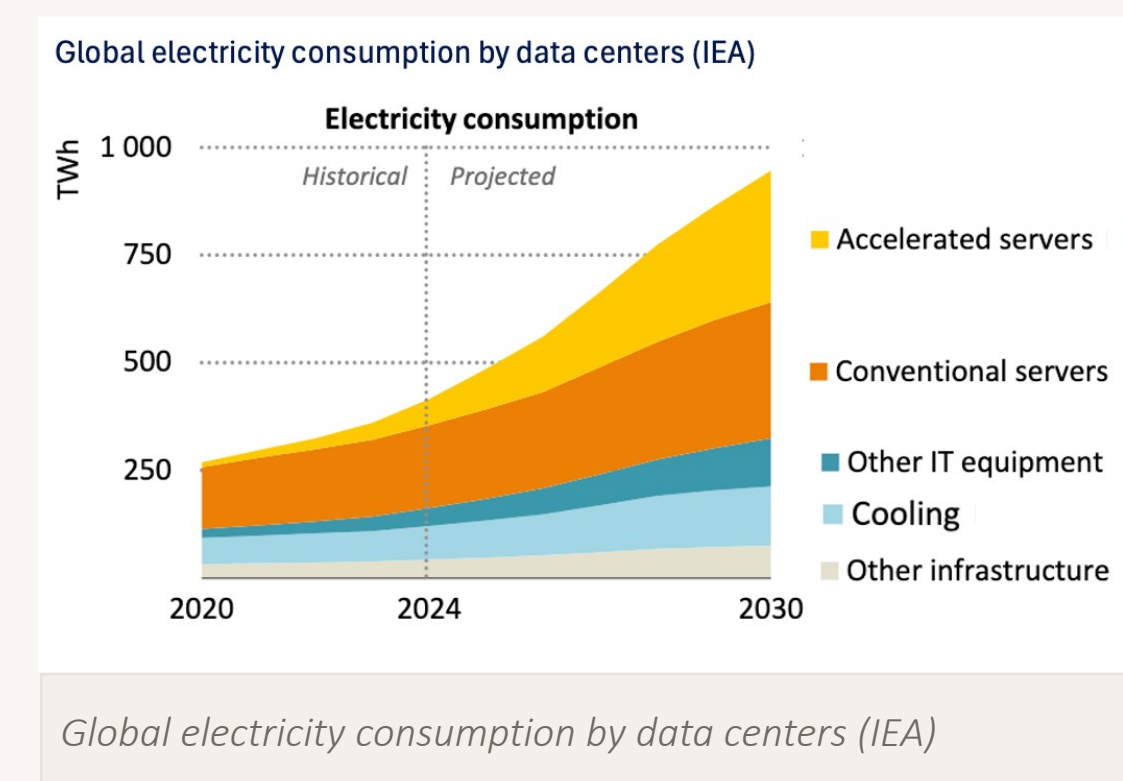
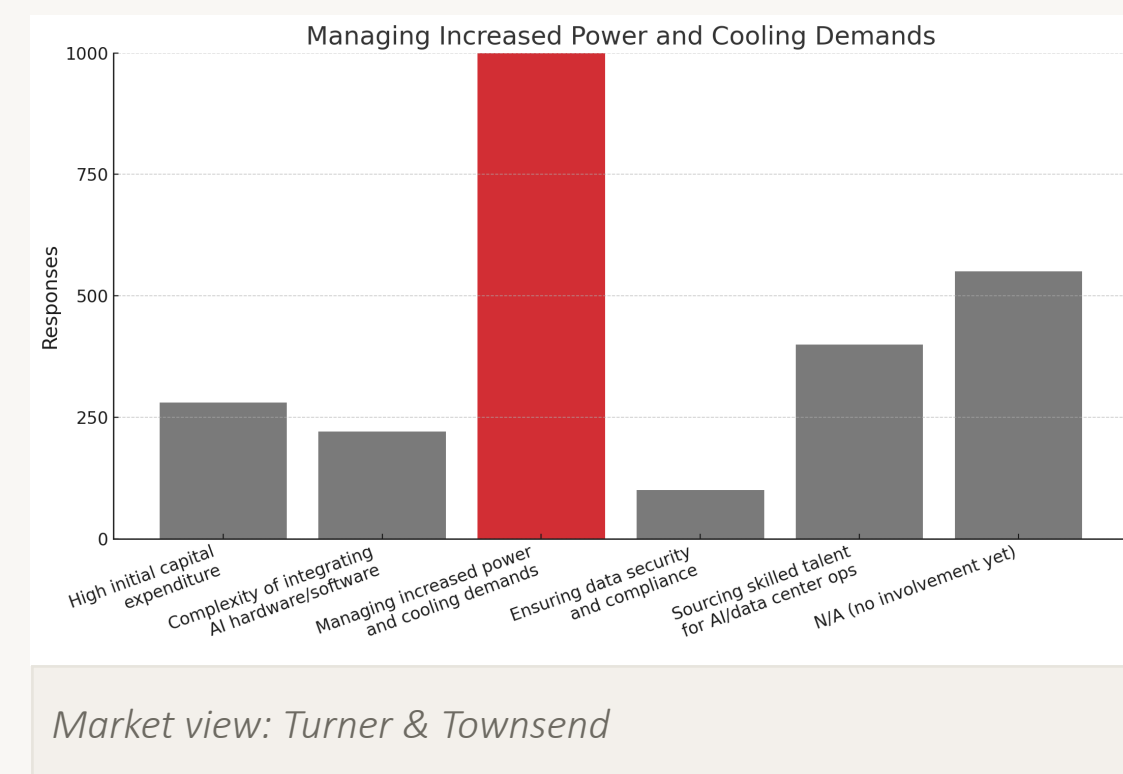


01 — PROBLEM

Cooling & power: the #1 data center concern

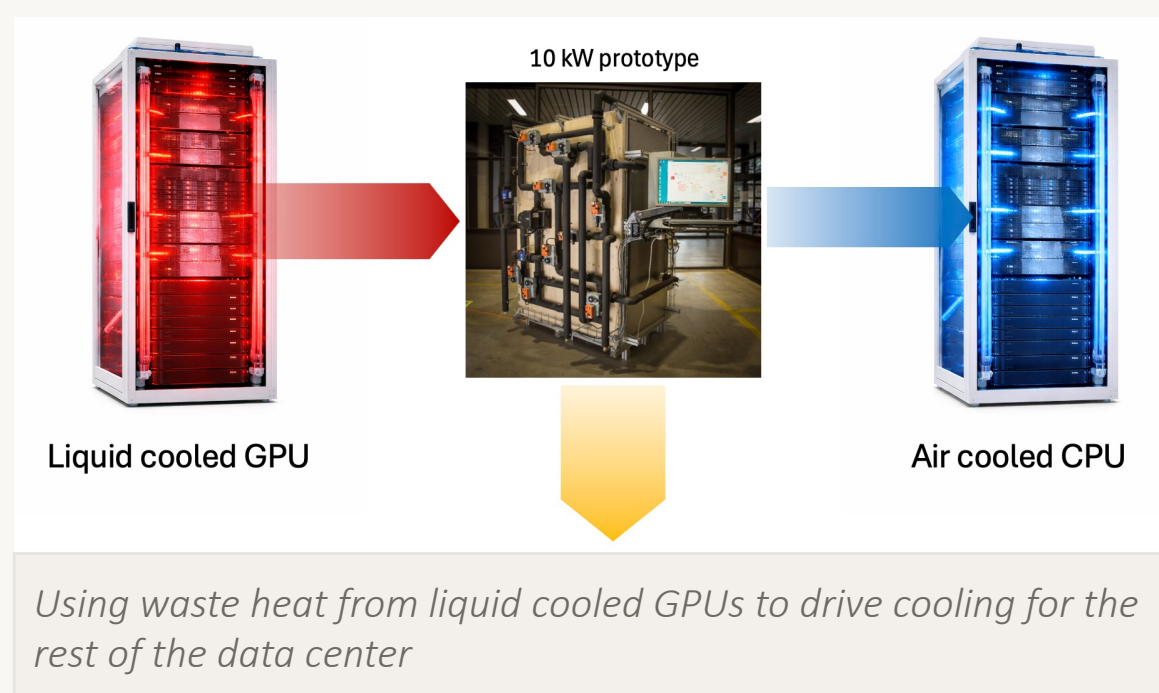
Up to **30% of the electricity consumption in data centers** is used for cooling — making managing power and cooling the **#1 concern** by data center operators in the 2024 Turner & Townsend survey.



02 — SOLUTION

Adsorption chillers: transforming waste heat to cooling

De-electrifying all the cooling in a data center — replacing the electric chiller



Key gap: Existing heat-driven chillers require 65–120°C driving temperatures. NVIDIA Blackwell & Vera Rubin GPUs reject heat at only **45–65°C** — too low for any current solution.

03 — CORE INNOVATION

RTSA — Rapid Thermal Swing Adsorption

Thick Adsorber Coatings

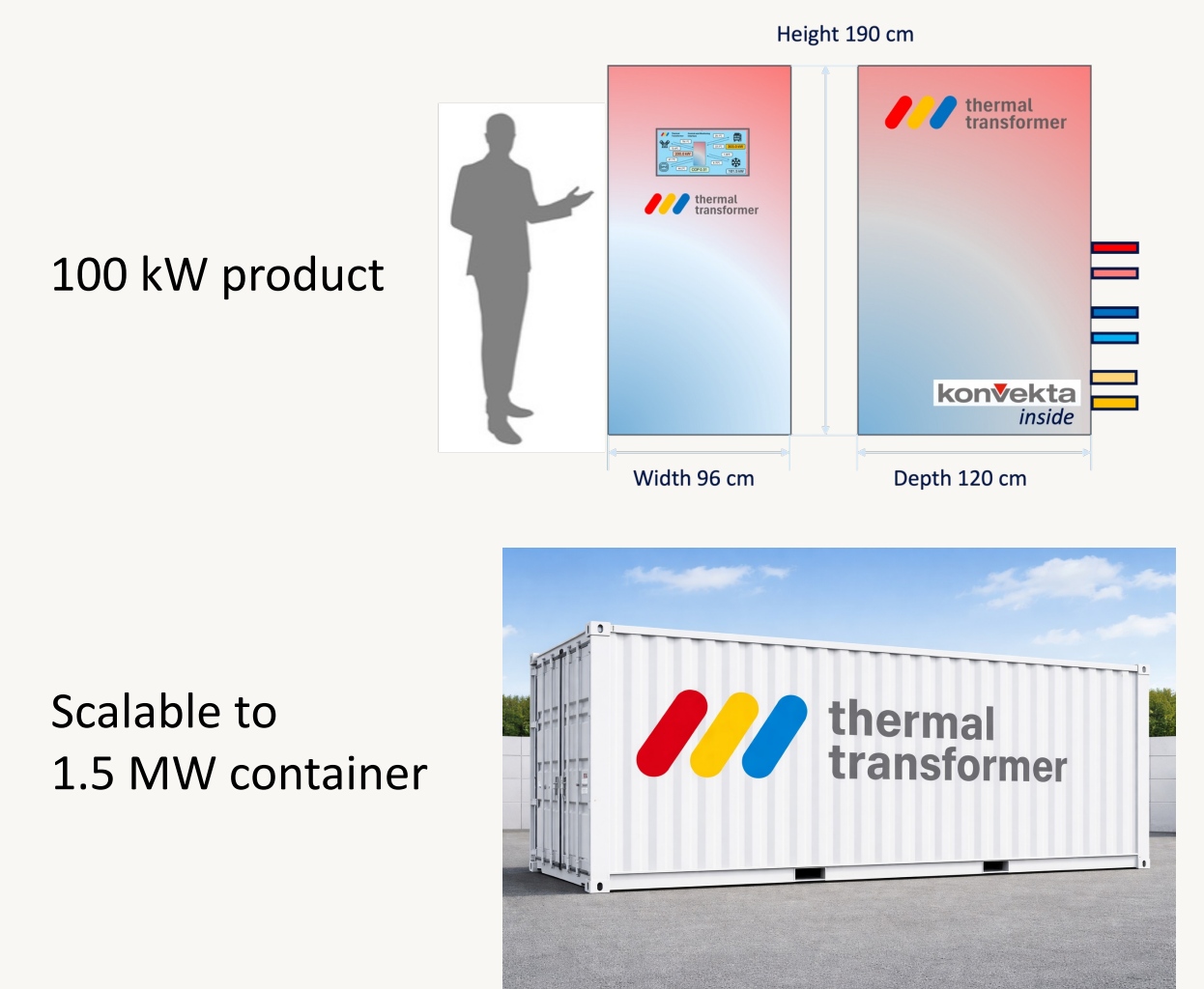
Drastically reduced cycle time through hierarchically structured sorbent coatings that minimize thermal and mass transport resistances.

2–4× Cooling Power

Specific Cooling Power (SCP) and Volumetric Cooling Power (VCP) improved 2–4× versus the state of the art.

Lowest Drive Temp

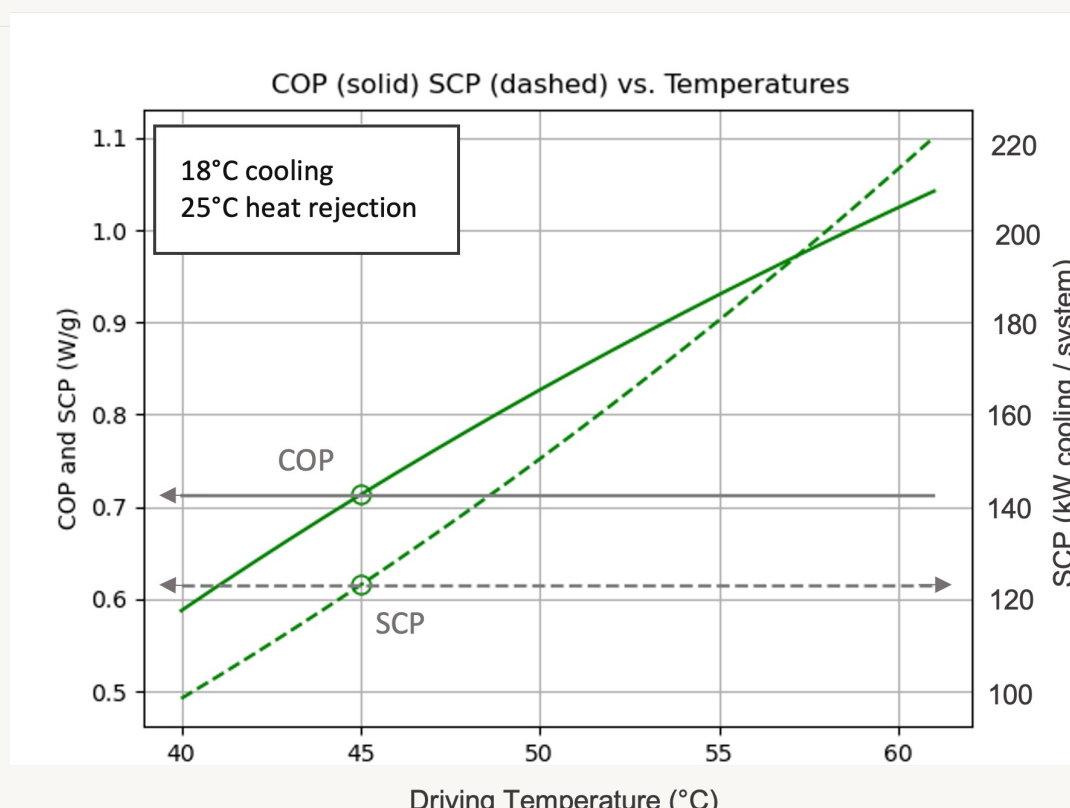
Operates from 45°C — the lowest driving temperature in its class — unlocking GPU waste heat previously unusable.



04 — PRODUCT

Product Specification

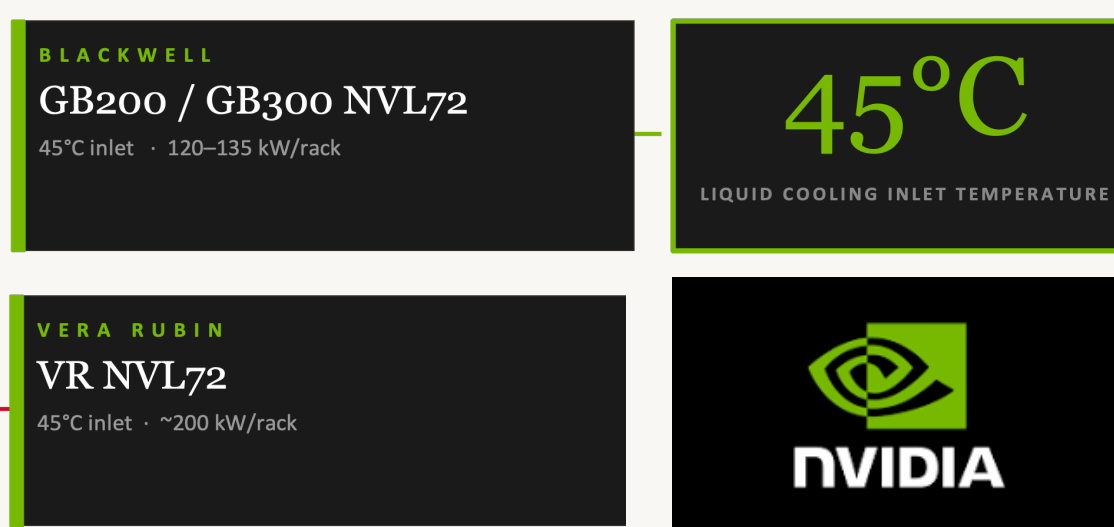
Cooling Capacity	100 kW
Driving Temperature	45°C (lowest in class)
Power Density	20 kW/m ³
Refrigerant	Water — zero GWP, zero ODP, compressor free
COP	0.75
Commercial Pilot	2027



05 — NVIDIA COMPATIBILITY

Built for Blackwell and Vera Rubin

Both NVIDIA Blackwell (GB200/GB300 NVL72) and Vera Rubin (VR NVL72) use **45°C liquid cooling inlet temperature** — the exact temperature Thermal Transformer is engineered for.



Although there have been significant advances in how to transport heat away from chips (e.g. liquid cooling), there has been little progress in how to utilise this heat.

06 — DATA CENTER USE CASE

Up to 30% electricity reduction per data center

In a mixed liquid + air cooled data center, 2 water-cooled GPU racks (200 kW driving heat at 45°C) power one Thermal Transformer unit that delivers 100 kW of cooling for 10 communication and storage racks — with **near-zero additional electricity**.

200 kW

WASTE HEAT IN
From 2 GPU racks at 45°C

100 kW

COOLING OUT
For 10 storage/comm racks

Green Datacenter AG (LOI): Supports on-site waste heat reuse to maximise local energy efficiency and directly address operational bottlenecks.

Each 100 kW unit saves ~42 t CO₂/year. With 1,000 units/year by Year 10: **306,600 t CO₂** cumulative savings.