



# Digital Infrastructure Europe: The opportunities & challenges

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## Digital habits

**2.8x** Data Generated  
since **2020**  
**3.4x** by **2026** (221ZB)

European Mobile Data  
**500%** Consumption  
increase by **2030**

European Fixed Data  
**400%** Consumption  
increase by **2030**

Source: Hinrich Foundation, Arthur D. Little

## Energy & compute capacity

Additional **900MW+**  
of new European capacity  
in **2025**

European Datacenter  
energy consumption  
**28%** Increase by  
**2030** to **98.5TWh**

Source: CBRE, European Commission

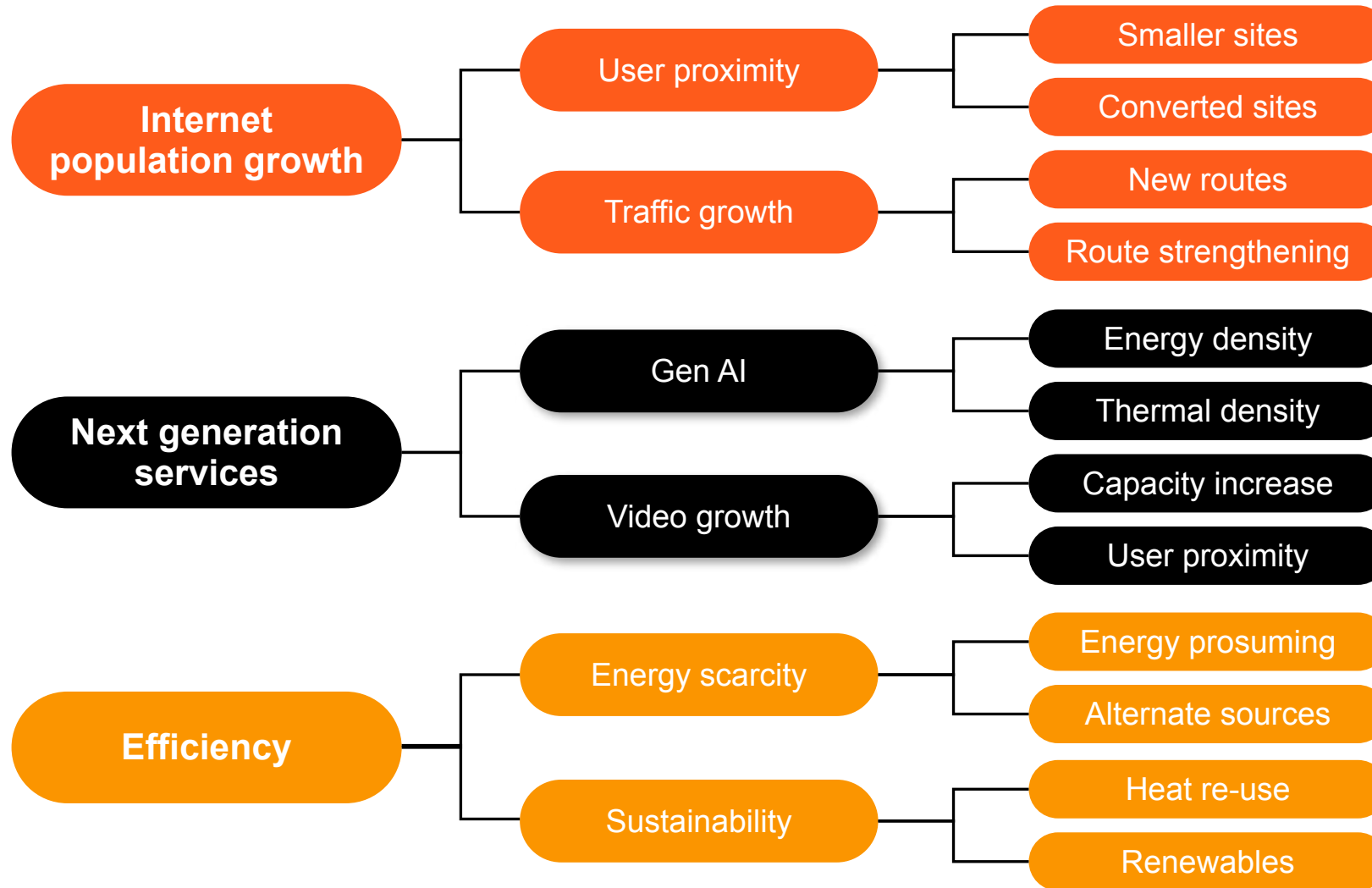
## Generative AI

A single ChatGPT query  
requires **2.9 watt-hours** of electricity,  
compared with  
**0.3 watt-hours**  
for a Google search

**3-6x** Average Deployed  
Rack density by **2030**

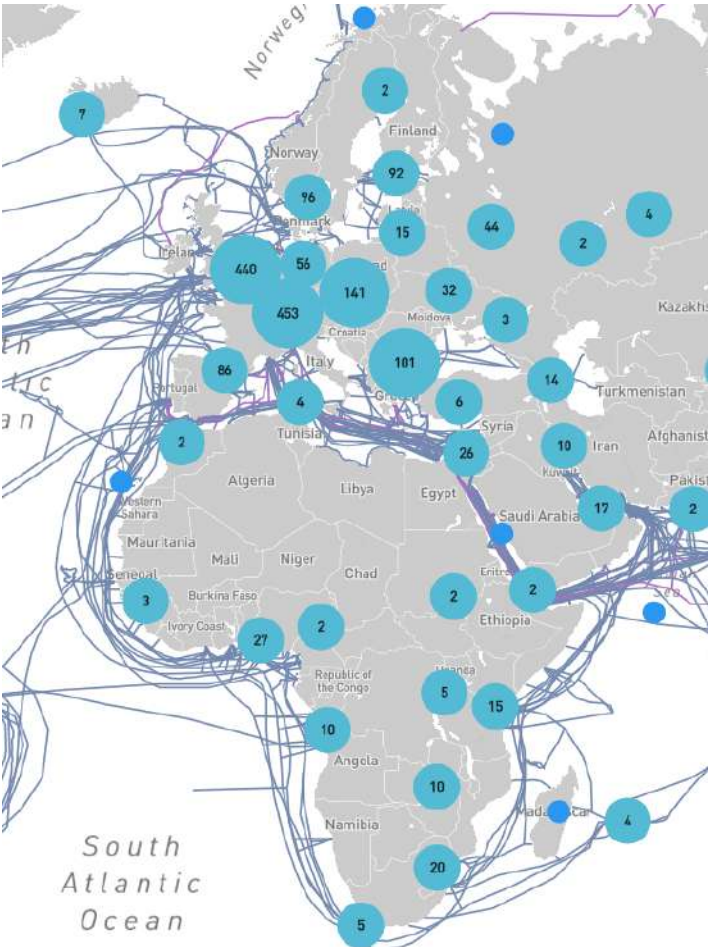
Source: Omdia, Goldman Sachs

# Macro industry trends



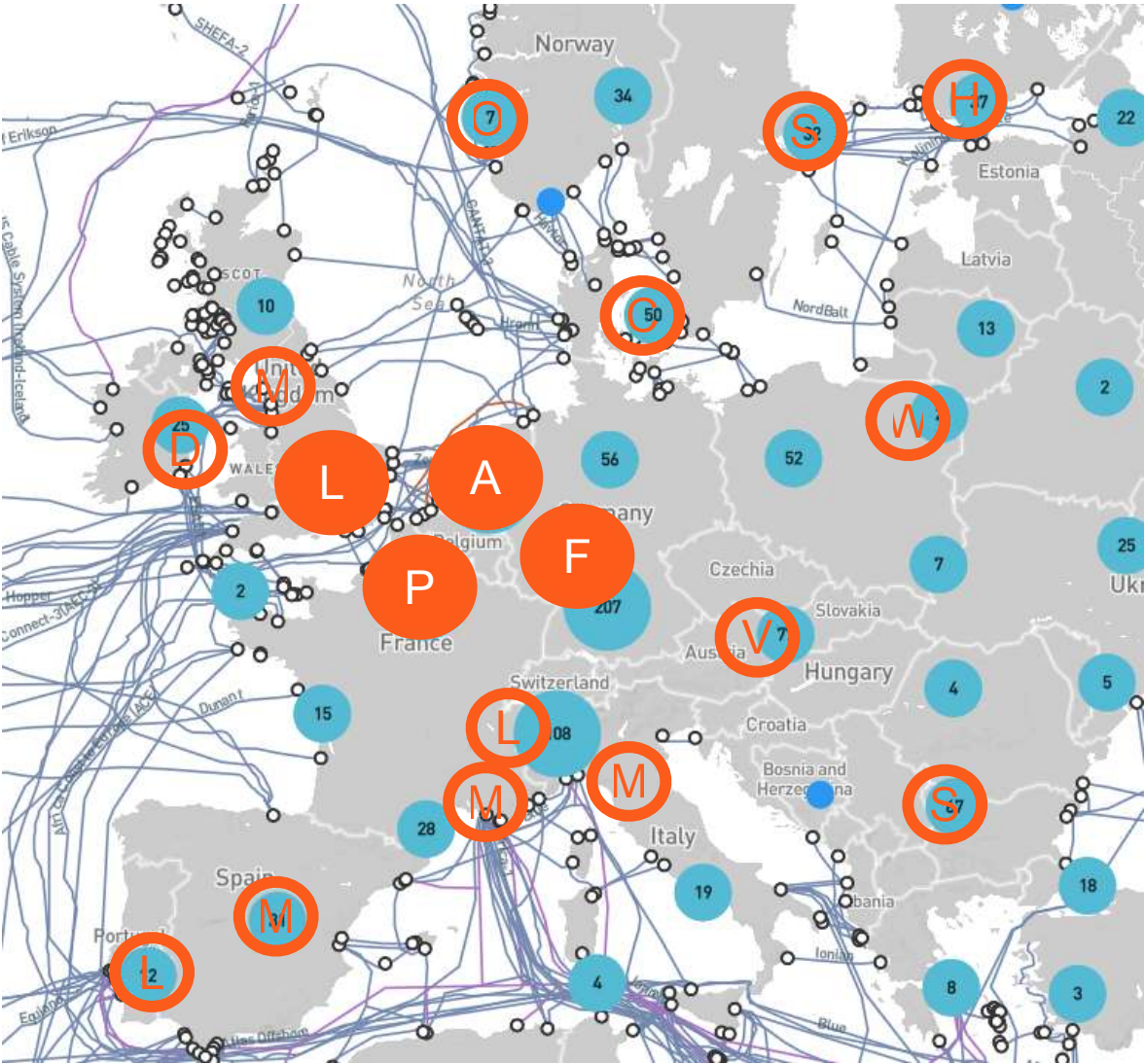


# EMEA DC view

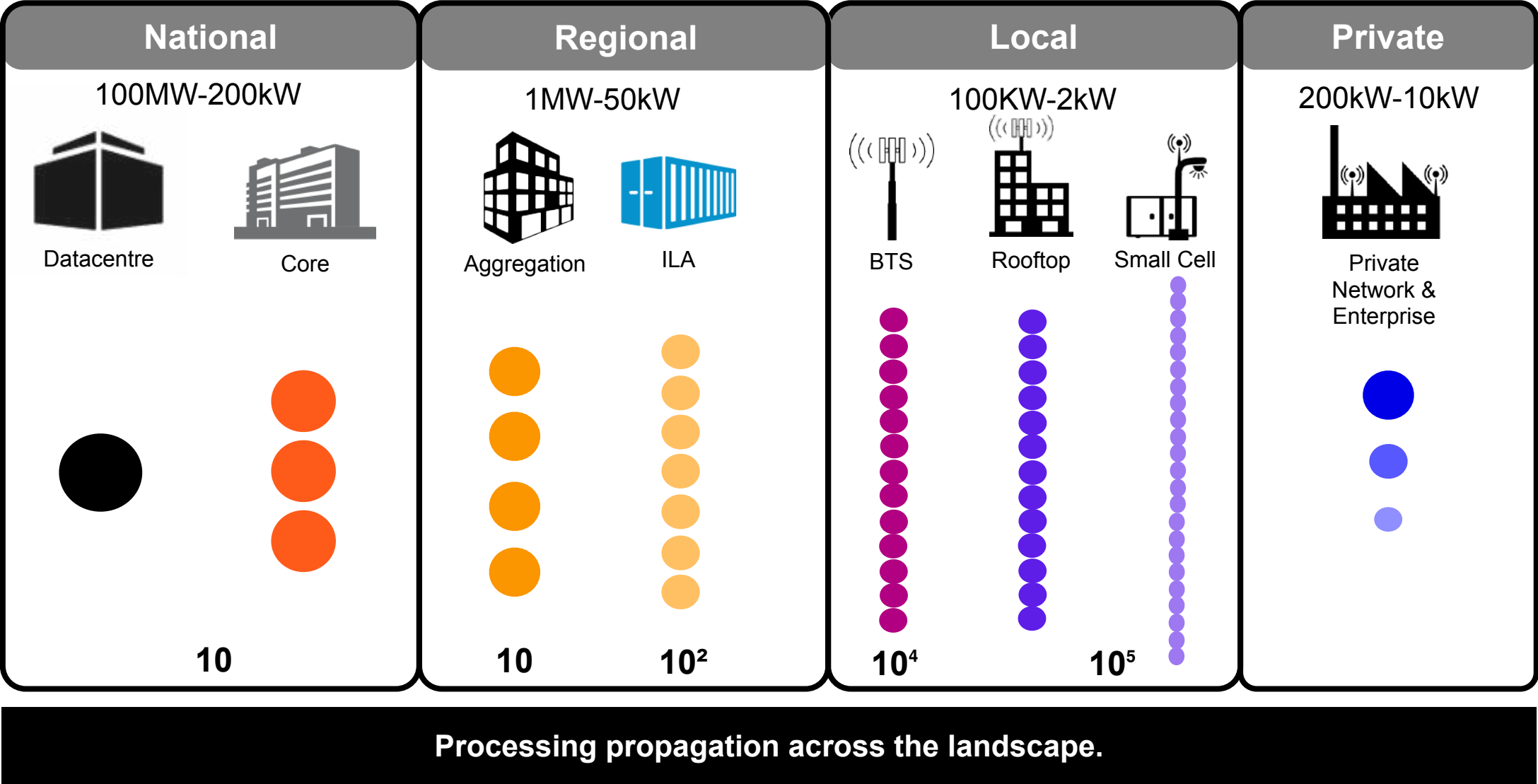


- Availability of Land & Power
- Customer Proximity
- Data Security

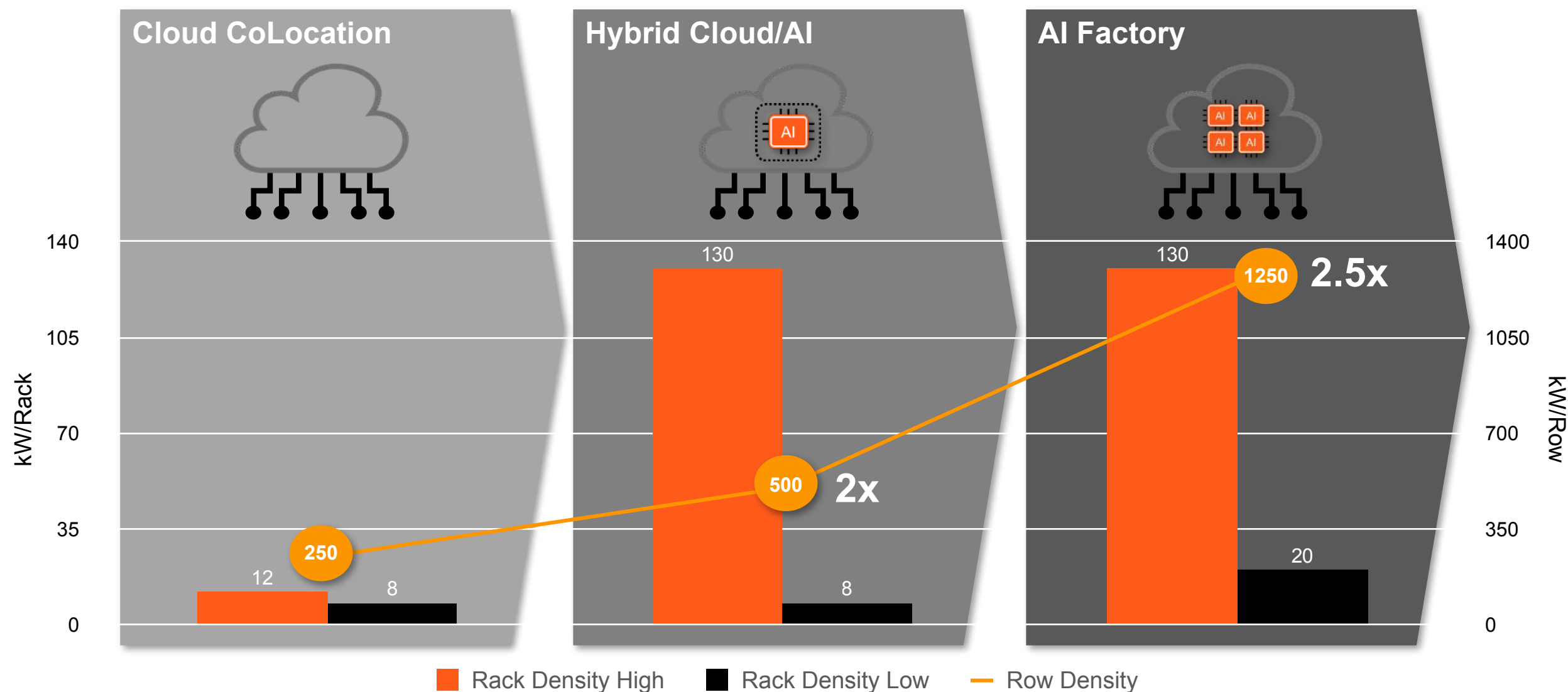
# European DC view



# Edge is a continuum

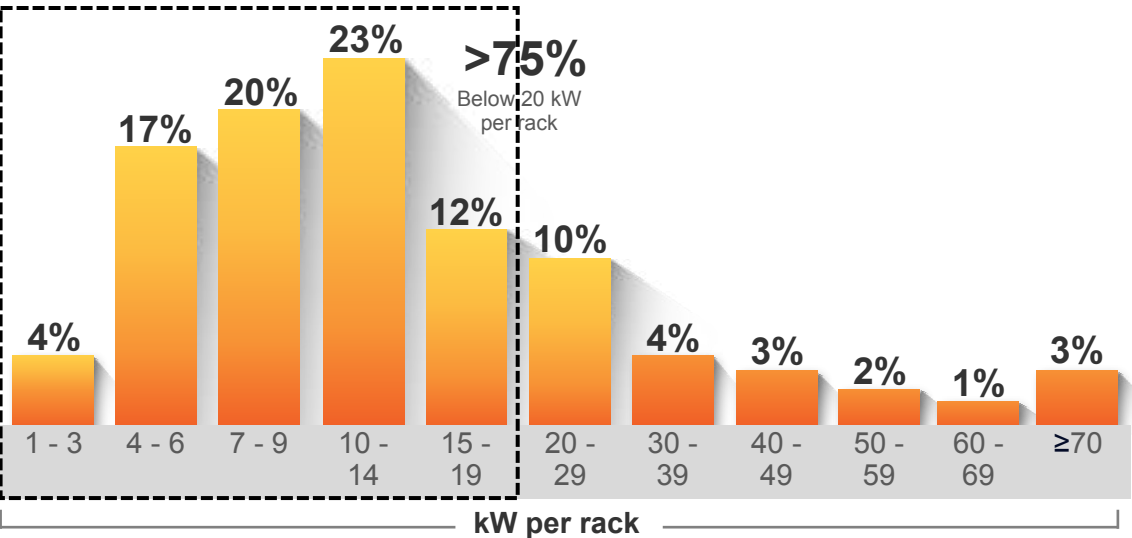


# Data center evolution



# Power and thermal density

Most racks are still in the low-density space



IT managers agree that rack density is on the rise

Cloud / hosting / SaaS provider



Colocation / data center provider



Enterprise data center owner / operator



RAPIDLY INCREASED

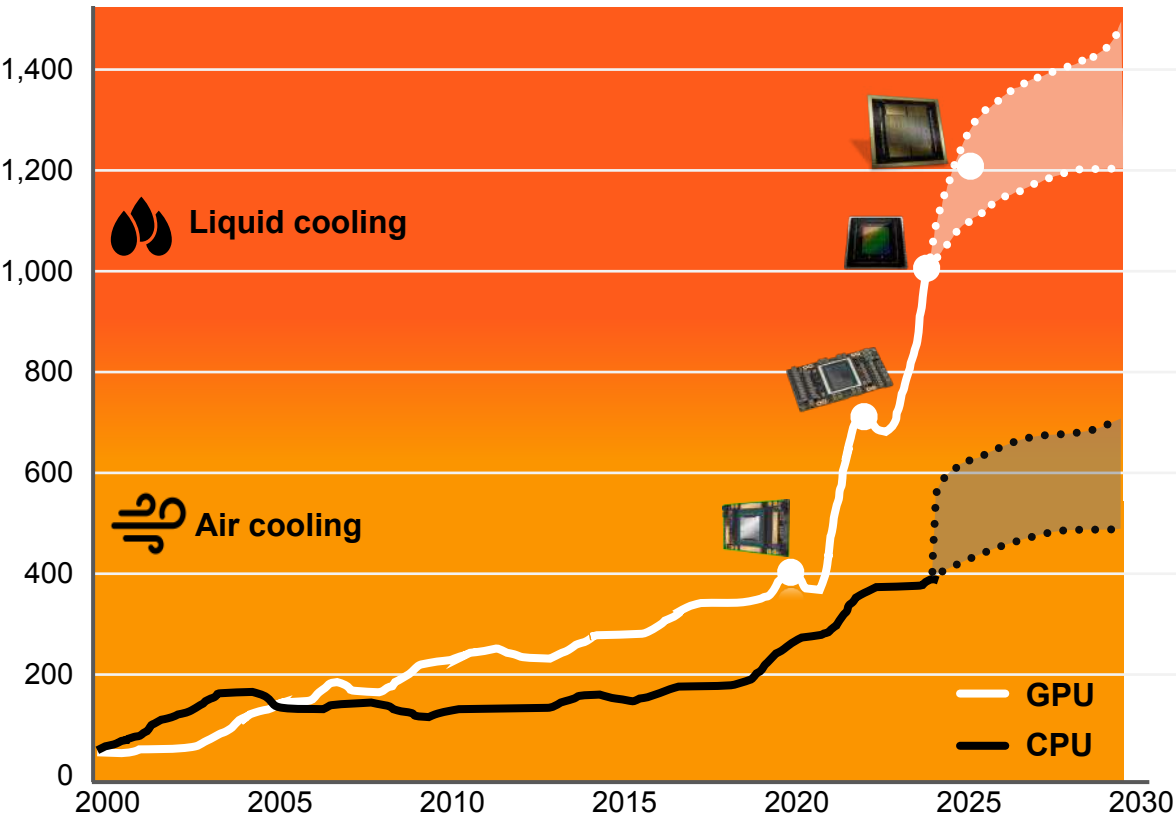
SLOWLY INCREASED

REMAINED THE SAME

DECREASED

## CPU and GPU Consumption Forecast

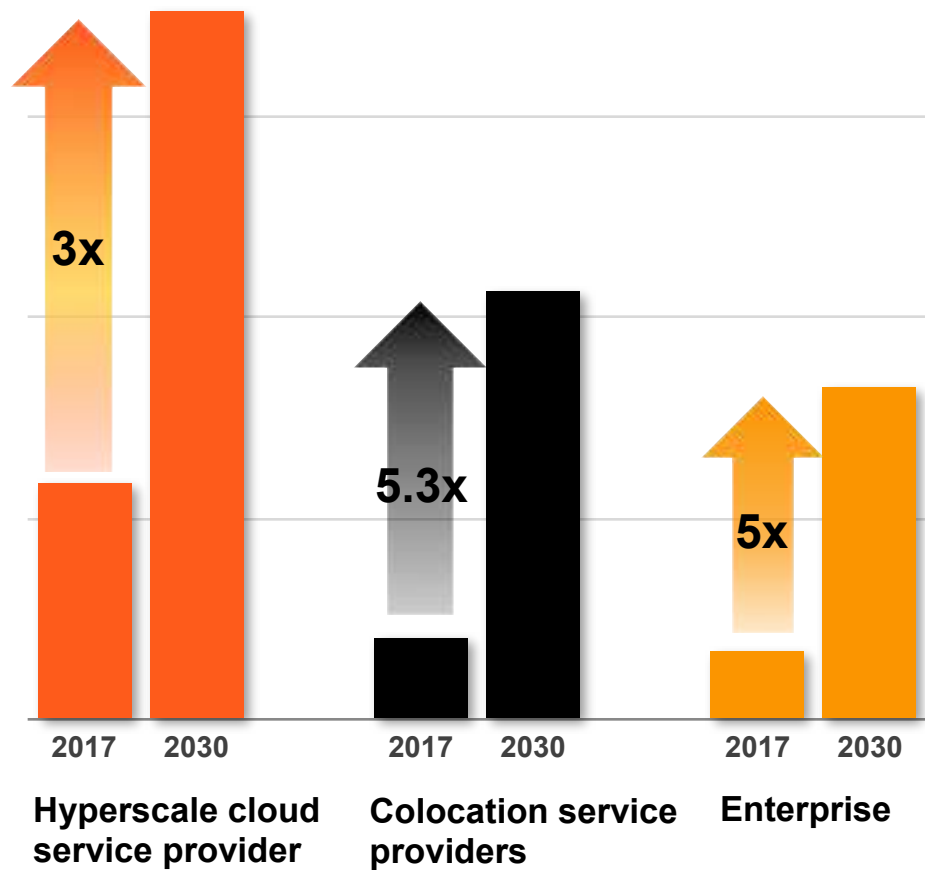
Thermal Density Power | TDP (Watts)



Above 700-800W TDP per chip, liquid cooling quickly becomes a necessity

# Liquid Cooling | GPU workloads

Avg kW per Rack Density Trend



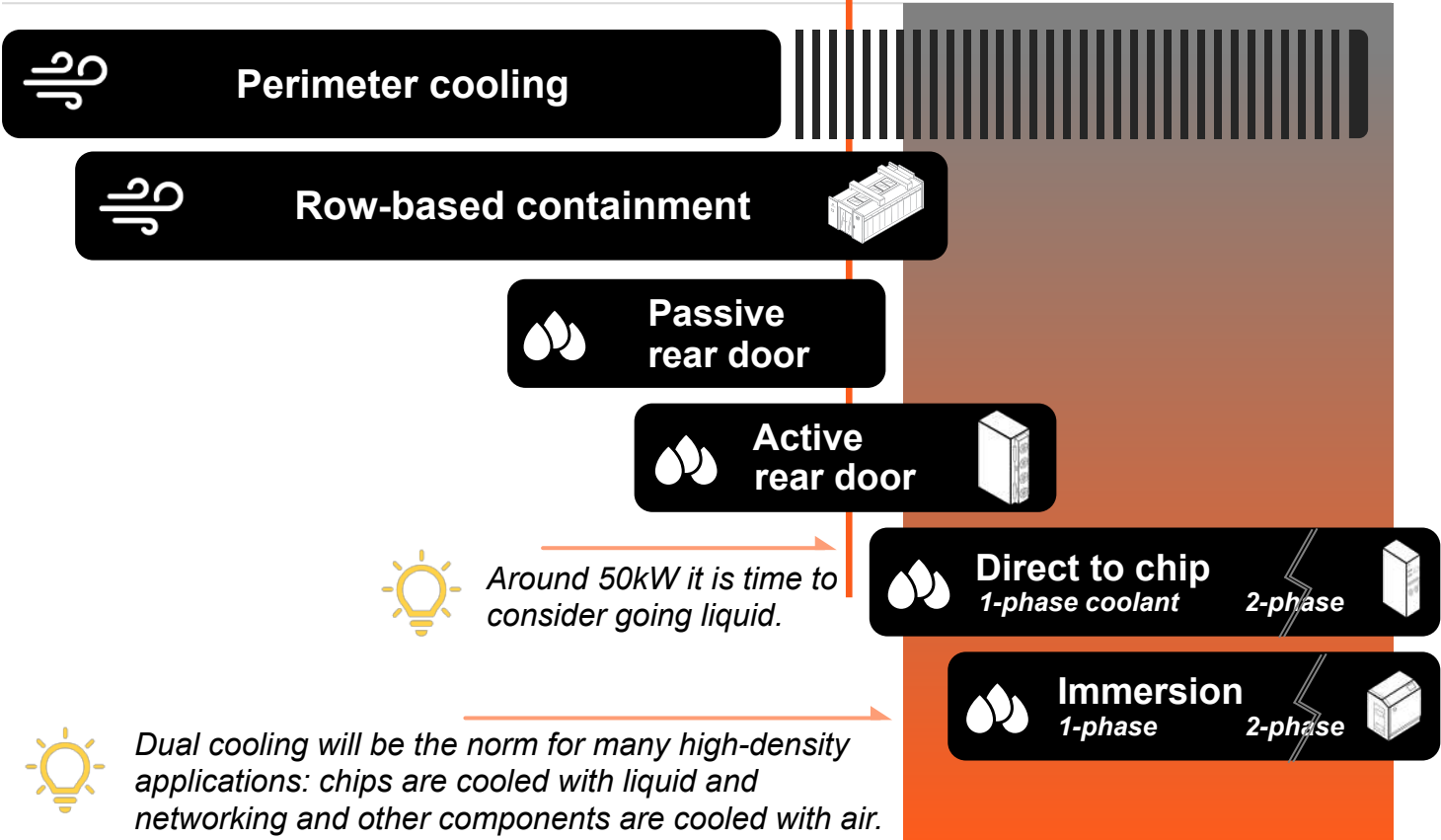
**Low density**  
Up to 10kW

**Medium density**  
10 to 25kW

**High density**  
25 to 80kW

**Extreme density**  
> 80kW

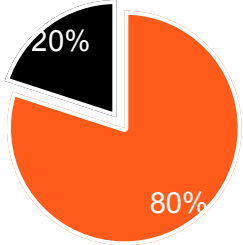
## Required cooling technology



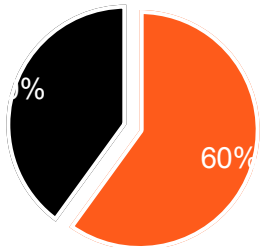


# Space utilisation trend

2024



2030



● Whitespace ● Technical

## Smart planning & solutions



Space allocation for future power needs.



Close coupled Switchgear and UPS.



Lifecycle planning gap between whitespace and technical equipment.



Integrated Chiller and Cooling Packages. Heat re-use.



Understand how to leverage existing infra retrofitting and have density in mind.



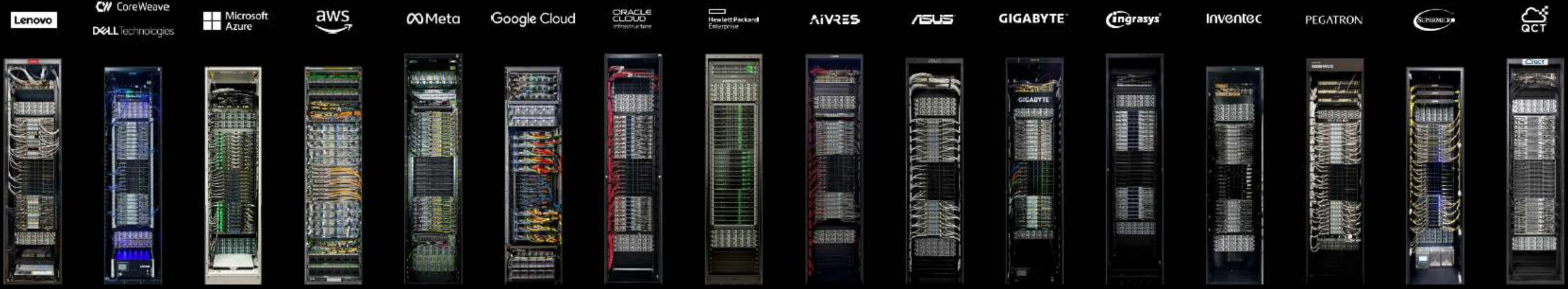
Rethink capacity with lifecycle management. Utility support & presuming.



Expand partnerships in sales cycle as projects increase complexity.



Standardization, modularity and repeatability.



Source: Nvidia

## Real World AI Compute Load Waveforms (GPU)

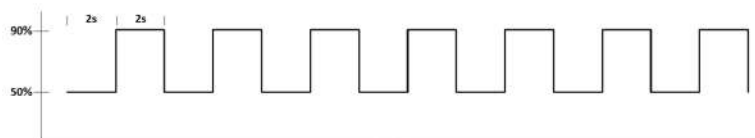


Figure 2-3: AI Load Profile Zoom View

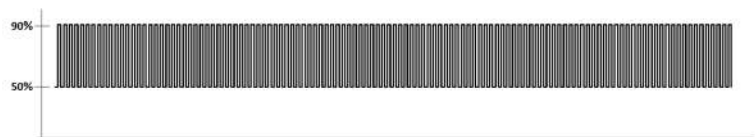
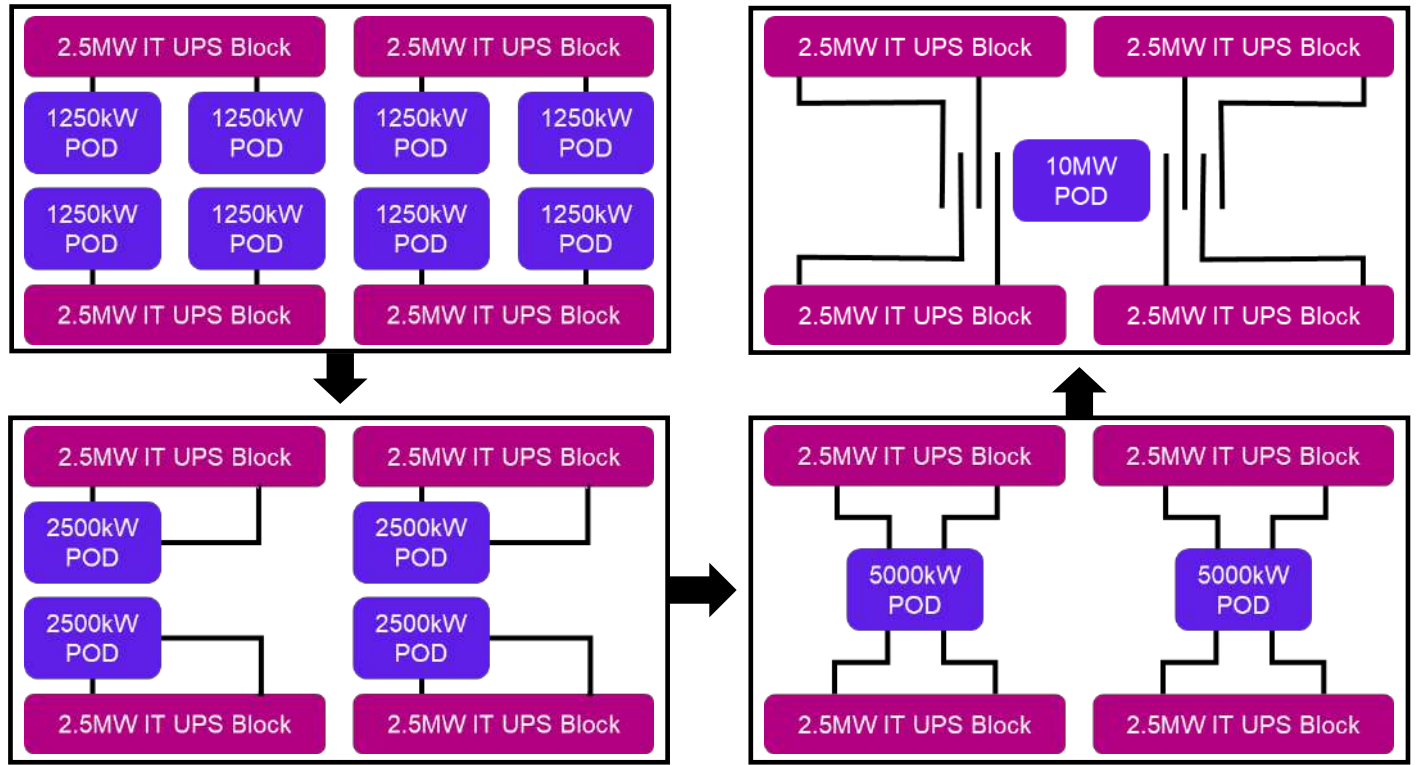
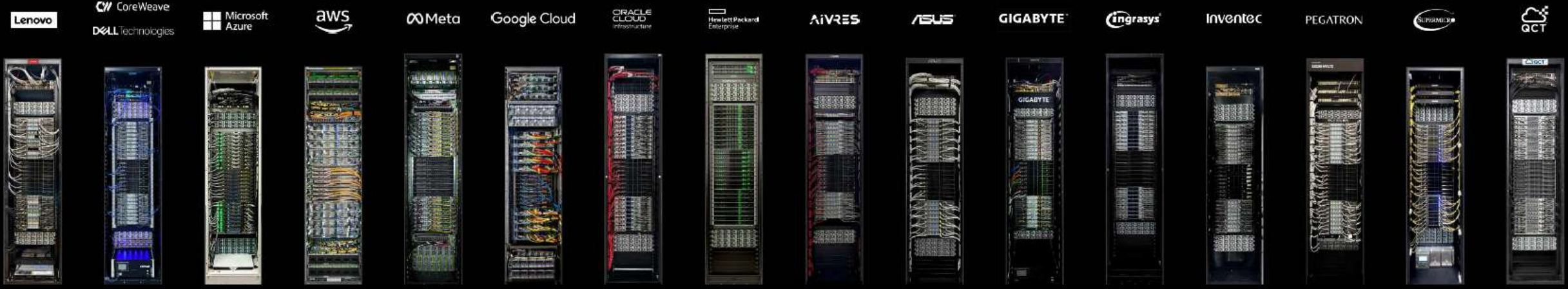


Figure 2-4: AI Load Profile Macro View

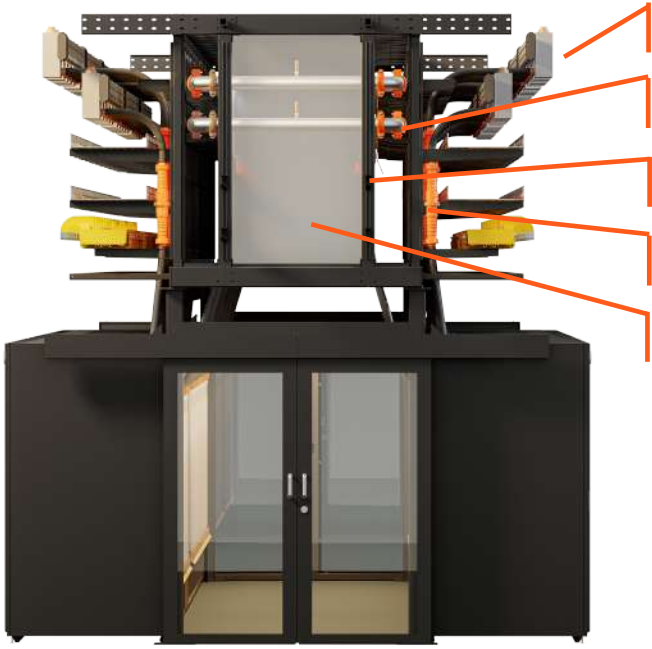
- 2 secs on, 2 secs off
- Load going from 50% to 90% on a 2.5MVA System



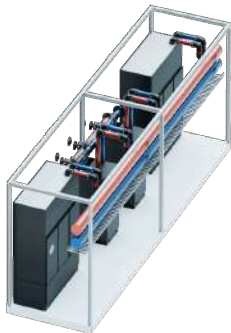
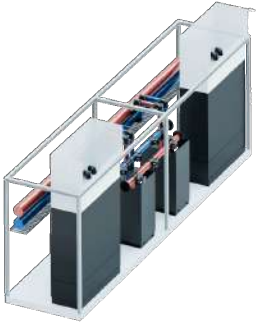




Source: Nvidia












- 400-100A busway
- 4" or 6" header
- SFN
- Branch fluid control valve
- Optical & network trays
- Aisle containment



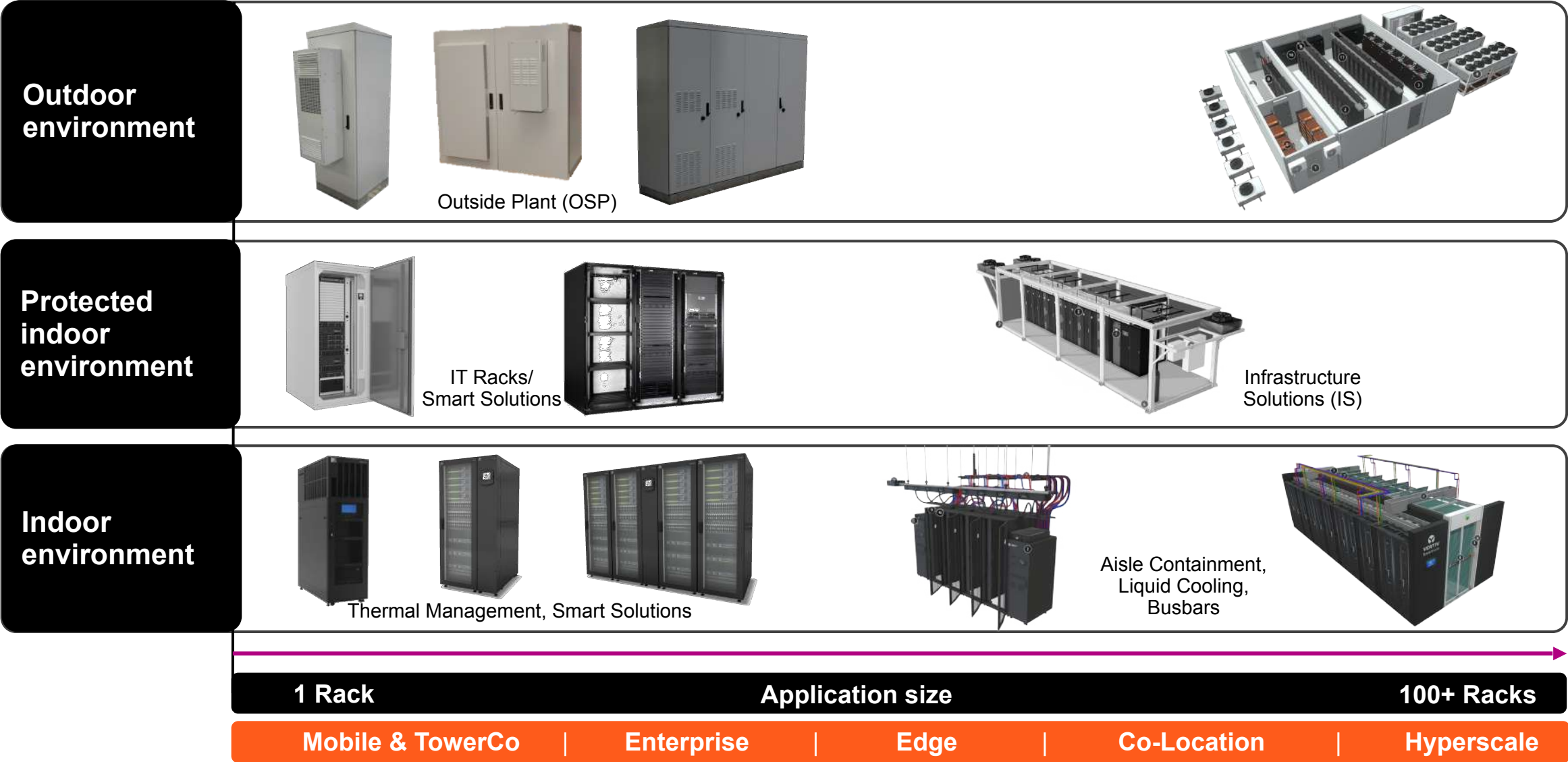
# Vertiv | Passive infrastructure manufacture & services

Co-Location | Communications Networks & Edge | Commercial & Industrial Applications

	Power Management	Thermal Management	Integrated Rack Solutions	Services
Description	<ul style="list-style-type: none"> <li>Small, medium and large uninterruptible power systems (UPS)</li> <li>Industrial-grade UPS</li> <li>AC power distribution systems and busway</li> <li>Switchgear and Busbar</li> <li>12V to 400V DC and HVDC power systems</li> <li>Custom DC UPS systems, DC battery chargers and distribution</li> <li>Rack power distribution</li> </ul>	<ul style="list-style-type: none"> <li>Small thermal systems including room and row/ rack cooling</li> <li>Air handling and chiller: large systems located outside the data room that provide climate control</li> </ul>	<ul style="list-style-type: none"> <li>IT and infrastructure management solutions</li> <li>Rack PDUs</li> <li>Integrated solutions</li> <li>Liquid Cooling direct to chip and Immersive systems</li> </ul>	<ul style="list-style-type: none"> <li>Diverse array of services to handle ongoing customer equipment and product needs</li> <li>Maintenance, project and training services</li> <li>Tailored customer offerings</li> </ul>
Select offerings				
	<b>Liebert®</b> <b>Geist™</b> <b>NetSure™</b>  	<b>Liebert®</b> 	 <b>Avocent®</b> <b>Albér™</b> <b>Cybex™</b>	



# Combined solutions for technical facilities





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