PowerlandMap

MARKET INTELLIGENCE

AI Liquid Cooling & High-Density Readiness

Shortlist facilities and upgrade options that can accommodate a specified high-density AI deployment without relying on generic AI-ready claims

52
report pages

Extended edition
29 October 2026
Analysis, project evidence and practical models

Original research snapshot dated 4 or 5 October 2026.
Expanded evidence retains its own source-check dates.

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READER GUIDE

Contents and edition guide

This extended edition combines the original research chapters with additional analytical work and a separately dated public-evidence register. The snapshots are not additive.

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Original research coverage

Workload brief, cooling architectures, density, facility readiness, operator comparators, power and water interfaces, retrofit, commissioning, case studies and qualification.

How to read the update

The opening chapters retain the evidence freeze of 4 October 2026, or 5 October for the UAE study. The expansion was assembled on 29 October. Individual records show the date on which their source was last checked. Extraction is not a new operator confirmation.

Use the expanded record when it supersedes an older baseline statement. Capacity bases and phase boundaries remain explicit. Model inputs are labelled as assumptions. The PDF bookmarks provide direct navigation through the expanded sections.

The public sample contains exactly the first four pages. The complete study includes all sections listed above.

EXECUTIVE ASSESSMENT

Executive summary

High-density AI readiness is an interface problem. The buyer must match hardware thermal requirements, rack power, CDU topology, facility-water conditions, residual air cooling, structural loading, leak management and commissioning to the exact hall.

Public operator evidence shows liquid cooling moving into mainstream colocation: Equinix discusses direct-to-chip systems above 200 kW/rack, DATA4 markets AI-ready campuses above 100 kW/rack, and Digital Realty’s London innovation environment supports 150 kW+ density. These are strong capability signals but not evidence that every facility or hall is ready.

The study therefore applies a strict rule: operator-level product capability is not copied to a facility without site evidence. A missing thermal or electrical interface remains unresolved and becomes a diligence question rather than an assumed value.

>200 kW/rack Equinix DTC discussion	>100 kW/rack DATA4 AI-ready claim	150 kW+ Digital Realty lab

EVIDENCE FRAMEWORK

Research methodology and data architecture

Study scope. Selected European markets and operator comparators. Public technical evidence reviewed through 4 October 2026.

Database snapshot. 5,746 verified supply records across 129 countries; 4,033 live records; 1,713 pipeline records; 67,966.6 MW of sourced IT capacity. The active development pipeline contains 1,671 projects, including 551 under construction.

Canonical identity. PowerlandMap deduplicates campus parents, buildings, acquisitions and operator aliases. A competitor listing is used as a discovery signal, not copied blindly.

Source hierarchy. Primary operator/authority/utility evidence is preferred. Specialist media and directories are used to discover or corroborate records. Unknown values remain unknown.

Quality controls. Capacity basis, evidence grade, confidence, source date, construction stage and RFS provenance are stored separately.

Core field	Rule
IT MW	Only when explicitly supported or separately labelled estimate
Electrical/campus MW	Never silently treated as IT
RFS	Source date/period or labelled PLM estimate
Project status	Canonical pipeline stage
Availability	Requires commercial evidence; site total is insufficient
Source date	Retained for recency review