TELBORG

Data Center Briefing

December 25, 2025

Global

Key themes:
UK hyperscale campus momentum: QTS Northumberland £10bn buildout; US pre-commit colocation economics: Nscale $865m / 40MW at WhiteFiber NC-1; India scale-up: Adani >1GW AI data-centre expansion; Karnataka new builds; Power sourcing friction: 4.4GW gas plant permit appeal tied to data-centre campus; Reliability vs decarbonisation: peaker retirements delayed amid AI load growth; Grid bottlenecks: ~2,300GW interconnection queues and copper supply risk; Resilience and connectivity: Taiwan armored subsea cable program; AI platform infrastructure: Cloudflare–JD Cloud inference routing; vector DB backup/DR

Market overview (Global | 25 Dec 2025 UTC)

Data-centre capex and power procurement continue to tighten around a few recurring constraints: (i) grid interconnection backlogs and permitting risk, (ii) rising scrutiny on emissions and water use, and (iii) growing demand for low-latency AI inference platforms and resilient connectivity.

Notable themes today include large new/advancing campus commitments in the UK and US, renewed reliance on gas/peaker capacity to meet near-term load growth, and policy/operational moves aimed at resilience (subsea cables) and distributed energy data/controls (India rooftop solar telemetry).

Risks and watchpoints (near-term)

Execution/permitting and environmental litigation

- **Gas-to-data-centre linkage under challenge:** Environmental groups appealed a Pennsylvania DEP permit for a proposed **4.4 GW natural gas plant** at the former Homer City coal site, intended to supply power to a **planned 3,200-acre data center campus**—raising risk of timeline slippage, redesign, or additional mitigation requirements (Pa. environmental groups appeal permit for 4.4 GW gas plant).

- **Reputational and policy risk from "backsliding" generation:** Surging AI-related demand is contributing to delayed retirements of fossil assets; NRG postponed retirement of Chicago's Fisk peaker, with PJM noting many planned retirements delayed and citing large summer price spikes and DOE actions as drivers (The AI Boom Revives Polluting Fossil-Fuel Peaker Power Plants). This increases risk of stricter local restrictions, EJ challenges, and higher compliance costs.

Grid bottlenecks and supply-chain constraints

- A broader energy-transition roundup flags **~2,300 GW** stuck in US interconnection queues and a potential **30% copper shortfall by 2035**, both of which can delay substation, line, and data-centre power delivery schedules (2025 energy transition: breakthroughs, gridlock and supply risks).

Water and sustainability constraints

- Commentary on India warns rapid hyperscale/colo growth could drive very large sector water withdrawals and higher emissions; it calls for measures such as mandatory water disclosure, treated-wastewater usage, and sustainability-linked approvals (India's data centres: an emerging environmental and water menace). Expect heightened permitting sensitivity in water-stressed regions.
- US Pacific Northwest environmental roundup explicitly highlights **concerns about data centers' high water use for AI**, signalling sustained media/political attention (10 biggest environmental stories of 2025 in Pacific Northwest).

Connectivity and resilience

- Taiwan is pursuing additional **armored undersea cables** plus satellite and backup power measures. While supportive for resilience, subsea programs can face procurement, routing and geopolitical risks (Taiwan plans five armored undersea cables for resilience).

Key deals & projects (data centres and digital infrastructure)

UK: QTS advances Northumberland mega-campus

- Work to start soon on Northumberland QTS datacentre:
    - QTS (US) to start work on the **first building** of a **£10 billion**, **5.8 million sq ft** campus at **Cambois, Northumberland**.
    - Planned buildout: **10 buildings over the next decade**.
    - Blackstone agreed to finance a **£110 million local employment fund**.

- Reported employment impacts: **1,200 long-term construction jobs** and up to **2,700 indirect jobs**.

US (North Carolina): Capacity pre-commit supports WhiteFiber NC-1 buildout

- Nscale commits $865M for 10-year, 40 MW at WhiteFiber NC-1:
  - Nscale to invest **$865 million** for a **10-year colocation contract** for **40 MW** at **WhiteFiber's NC-1** data center in **Madison, North Carolina**.
  - Payment profile: **staged payments starting April 2026**.
  - WhiteFiber has invested **$150 million** in the site and is **seeking lenders** to fund buildout.
  - Context from the same report: Nscale previously raised **$1.1 billion Series B** and contracted with Microsoft for **104,000 Nvidia GPUs** in a separate **240 MW** project.

India: New builds and large-scale AI capacity ambition

- Adani plans 1GW+ AI data centre expansion across India:
  - Adani Group plans **>1 GW** of AI data-centre expansion across **Visakhapatnam, Navi Mumbai, Noida and Hyderabad**.
  - Power strategy: rely mainly on **Adani Green Energy renewables**; evaluating **nuclear** as long-term baseload under a model where Adani **owns/operates plants** and specialised partners build reactors.
- Datasamudra and Elmeasure invest in Karnataka data centre expansion:
  - Datasamudra: **Rs 3–5 billion** for a **35–40 MW** AI-focused data centre in **Mangaluru** plus **5 MW edge sites** in **Mysuru** and **Hubballi–Dharwad**.
  - Karnataka narrative: KDEM aims to make Mangaluru a **1 GW cable-to-cloud cluster** (per a Deloitte study cited in the story).
  - Elmeasure: **Rs 8–8.5 billion** for **two manufacturing units** and a **centre of excellence** in Karnataka.

Power & grid / interconnection highlights

- **Gas generation linked to campus-scale load:**Pa. environmental groups appeal permit for 4.4 GW gas plant underscores the growing practice of pairing data-centre campuses with dedicated thermal generation—and the associated legal/EJ exposure.
- **PJM-era reliability vs. decarbonisation tension:**The AI Boom Revives Polluting Fossil-Fuel Peaker Power Plants points to demand-driven economics delaying retirements, with PJM citing widespread delays and extreme price spikes.
- **Macro bottlenecks remain binding:**2025 energy transition: breakthroughs, gridlock and supply risks highlights interconnection queue scale (**~2,300 GW**) and materials risk (possible **30% copper shortfall by**

2035)—both directly relevant for substation/line delivery schedules to new campuses.

- **Ireland system planning context:** The IEA published pathways for a secure, renewables-led electricity system to 2035, noting wind supplied **about one-third** of Ireland's electricity in 2024 (IEA: Ireland's Electricity System Central to 2035 Goals).

Policy & regulation (selected)

- **India rooftop solar monitoring/telemetry:** MNRE welcomed an Odisha ERC amendment allowing **M2M SIM-based RMS** and hybrid inverters for rooftop solar, and urged other state regulators to follow; MNRE referenced a July 21, 2025 memo requiring inverter connection to a **centralised rooftop solar data system hosted in India** (MNRE Praises OERC Order, Urges M2M SIM RMS Adoption).
- **Trade/tariff backdrop:** Taiwan stated Mexico's 2026 tariff hike will not cover Taiwan ICT exports (including semiconductors) and it secured current or lower tariffs on **82 key export items** (Mexico tariff hike spares Taiwan ICT and semiconductor exports).
- **Resilient comms infrastructure:** Taiwan plans **two international and three domestic** armored undersea cables as part of a "three-dimensional defensive communications network," alongside satellite constellations and backup power measures (Taiwan plans five armored undersea cables for resilience).

Platform, software, and architecture signals (AI/data infrastructure)

- **Inference distribution and latency:** Cloudflare and JD Cloud expanded a five-year partnership to enable AI inference across Cloudflare's global network and JD Cloud's China infrastructure, targeting up to **80% inference latency** reduction via network-level routing to local data centres (Cloudflare and JD Cloud expand AI inference partnership globally).
- **Data protection for vector DBs:** Commvault partnered with Pinecone to deliver immutable backups and point-in-time recovery for Pinecone vector indexes via Commvault Cloud (AWS/Azure/GCP), with general availability targeted for **1H 2026** (Commvault and Pinecone partner to backup and recover vector databases).
- **Research (watch for longer-term infra implications):** Work on accelerators and optical links suggests ongoing pressure to improve energy efficiency and short-reach bandwidth, relevant to cluster design and interconnect roadmaps (e.g., STAR spatial accelerator for sparse Transformer attention, Ultra-broadband InP-DHBT mixer enables 582 Gb/s IMDD links).

What to watch (next 1–4 weeks)

- Pennsylvania: whether the appeal on the **4.4 GW gas plant** permit introduces material delays or additional conditions for the associated **3,200-acre** data-centre campus (45581067).
- UK: early works/timeline clarity on QTS's **£10bn Northumberland** campus and any further local infrastructure commitments (45581744).
- US capacity contracting: whether WhiteFiber secures lenders for NC-1 buildout following Nscale's **$865m / 40MW / 10-year** commitment (45578809).
- India: pace and siting details for Adani's **>1 GW** expansion and how its renewables-plus-(potential) nuclear strategy is structured (45577461).
- Water scrutiny: whether jurisdictions move toward water disclosure/approval conditions in response to rising AI cooling concerns (US Pacific Northwest; India commentary) (45581917, 45579972).
- Interconnection and materials: any policy signals aimed at reducing interconnection queues and managing copper constraints highlighted in the energy-transition roundup (45577277).

TELBORG