

Singapore's ST Telemedia unveils AI infrastructure project



ST Telemedia Global Data Centres (STT GDC), a Singapore-based data center provider, announced the launch of Southeast Asia's first High Voltage Direct Current (HVDC)-powered AI infrastructure testbed and signed MOUs with four local institutes to develop skills in energy and digital infrastructure.

The FutureGrid Accelerator, located at NTU Singapore, demonstrates HVDC integration with real AI workloads and aims to improve energy efficiency and grid resilience.

HVDC technology can reduce energy use by up to 30% and cut CO₂ emissions, supporting Singapore's energy transition goals.

STT GDC also partnered with ITE, Singapore Polytechnic, NTU, and NUS to provide training and internship opportunities for over 8,000 Singaporeans over five years, focusing on AI infrastructure

and sustainable energy systems.

The initiatives align with Singapore's broader efforts to enhance talent development and advance sustainable digital infrastructure.

 Source: ST Telemedia Global Data Centres

Food for thought

Implications, context, and why it matters.

Key commercial and technical details remain unproven beyond the testbed

- Commercial readiness and rollout timing still need assessment. The testbed will validate High Voltage Direct Current (HVDC) system performance at power loads of at least 325kW, far below a full-scale data centre buildout. STT GDC has described a Kolkata campus in India as scalable up to 25MW ¹.
- A plan has been stated by STT Telemedia Global Data Centres (STT GDC) to use this HVDC approach in “future data centres” and to scale it across global operations. Project dates and expected rollout scope have not been provided.
- Total cost of ownership for HVDC systems should be weighed against conventional alternating current (AC) power infrastructure. Capital expenditure includes newer components such as Solid State Transformers (SSTs), which replace traditional transformers using power electronics.
- Long-term reliability for new components, including the SST, still needs validation. Regulatory approvals for large-scale grid integration in Singapore also need confirmation.

Singapore's Green Data Centre Roadmap efficiency targets may make the market attractive for advanced power and cooling vendors

- Singapore's Green Data Centre Roadmap pushes operators toward lower losses. It targets a power usage effectiveness (PUE) of less than or equal to 1.3 at 100% IT load within 10 years ².

- Vendors can pitch to operators that won capacity in recent government allocation rounds. In the 2023 pilot Data Centre Call for Application, the Infocomm Media Development Authority (IMDA) and the Economic Development Board (EDB) provisionally awarded about 80MW to four data centres. They were AirTrunk-ByteDance (consortium), Equinix, GDS, plus Microsoft ².
- Operators will need higher-efficiency power and cooling to run energy-heavy AI. STT GDC says a typical rack with five NVIDIA DGX H100 systems draws around 50kW ¹.
- Suppliers that sell HVDC components, direct-to-chip liquid cooling, or smart energy optimisation tools can gain from the policy push for better efficiency and more use of greener energy ².