HITACHI

Hitachi and the Singapore Institute of Technology (SIT) Collaborate on Hybrid AC/DC Rack-Level Power Distribution Testbed for Data Centers

Collaboration aims to contribute to more energy-efficient and resilient data center power solutions.

SINGAPORE, 25 February 2026 – Hitachi today announced its collaboration with the Singapore Institute of Technology (SIT) to co-develop a Hybrid AC/DC Rack-Level Power Distribution Testbed for Data Centers, a first-of-its-kind rack-level testbed in Singapore. The testbed will interface with SIT Punggol Campus' Multi-Energy Microgrid (MEMG), the first to be constructed on a university campus in Southeast Asia. The MEMG integrates solar photovoltaic (PV) generation and other distributed energy resources to support campus-wide energy monitoring and optimization. Leveraging the campus as a live industry test environment and the university's Living Lab Network, Hitachi and SIT will jointly deploy and evaluate advanced hybrid AC/DC power solutions under real-world operating conditions.

Rapidly growing digitalization and AI demand are driving increased energy consumption in data centers across Southeast Asia, particularly for computing and cooling systems in tropical climates. This surge underscores the urgent need for more efficient energy solutions, as even small improvements in power usage can significantly reduce operating costs and carbon emissions across large-scale facilities.

The testbed will support evaluation of hybrid AC/DC power distribution approaches for rack-level data center infrastructure, including higher-voltage direct current (DC) power distribution for efficient renewable energy integration. Outcomes from the living lab testbed will help inform future development of more energy-efficient and resilient data center power architectures.

The collaboration will also provide SIT students with hands-on experience in applied energy innovation, working alongside Hitachi's Research & Development (R&D) team on real-world assignments. SIT students will gain practical experience with hybrid AC/DC power systems and renewable energy integration, reflecting SIT's applied learning approach that embeds industry projects into education to translate innovation into practice and develop future-ready engineers.

"Efficient integration of renewable energy remains a critical challenge for high-demand facilities such as data centers," said Dr Lin Wujuan, General Manger, R&D Center, Hitachi Asia. This collaboration is a testament to our ongoing commitment to developing sustainable solutions that drive innovation, reduce energy waste, and support a greener, more resilient future. We are honored to collaborate with SIT to advance renewable energy integration and redefine how high-demand facilities use power efficiently.

Professor Steven Wong, Director of the Centre of Digital Enablement (CoDE), SIT, said, "Rapid AI adoption and digitalization are increasing energy demand in data centers. Through SIT's applied learning and applied research ecosystem, and campus-based energy infrastructure, we work closely with industry partners to test and refine hybrid AC/DC power solutions in real operational settings. This collaboration highlights SIT's role as the University for Industry, advancing practical energy innovation, supporting sustainable digital infrastructure, and preparing future-ready engineers for Singapore's evolving needs."

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About Hitachi Asia Ltd.
Hitachi Asia Ltd., (Hitachi Asia) a subsidiary of Hitachi, Ltd., is headquartered in Singapore. With offices across seven ASEAN countries Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam – Hitachi Asia and Hitachi's subsidiary companies offer IT, OT (Operational Technology) and products to support customers in their transformation journeys. We will contribute to the growth in the ASEAN region by co-creating with customers to identify the social challenges and needs and deliver the solutions. For more information on Hitachi Asia, please visit the company's website at https://www.hitachi.com/en-sea.

About Singapore Institute of Technology
As the university for industry and Singapore's first university of applied learning, the Singapore Institute of Technology (SIT) offers industry-relevant degree programmes that prepare its graduates to be work- and future-ready professionals. Its mission is to maximise the potential of its learners and to innovate with industry, through an integrated applied learning and research approach, so as to contribute to the economy and society.

The University's unique pedagogy integrates work and study, embracing authentic learning in a real-world environment through collaborations with key strategic partners. Its focus on applied research with business impact is aimed at helping industry innovate and grow. SIT's new centralised campus within the larger Punggol Digital District features a vibrant learning environment where academia and industry are tightly integrated with the community.

For more information, visit www.SingaporeTech.edu.sg

For more information about the LLN, click here:
SIT Living Lab Network Infographic.pdf

Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.