News Release
For Immediate Release

Southwest Power Pool (SPP) Partners with Hitachi to Develop Advanced AI Solution for Critical Power Transmission Reliability and Flexibility Challenges

End-to-end use of industrial AI and advanced computing infrastructure to help significantly speed up safe integration and use of additional energy sources supporting central U.S. power grids.

- Initial partnership objectives are to reduce generator interconnection analysis times by 80% while facilitating more informed decision-making.
- Objective to be achieved via advanced AI solutions from Hitachi, powered by NVIDIA's accelerated computing platform.
- Integrated solution comprised of multiple Hitachi capabilities including an AI-based power simulation algorithm, Hitachi-iQ-accelerated calculations, augmented simulation modelling, predictive analytics, as well as design and engineering services.
- Wide-ranging impacts to address imminent U.S. energy infrastructure needs by increasing planning processes' speed and efficiency; enabling SPP to better resolve energy capacity shortages, increase grid reliability, and improve emergency response capabilities.
- Subsequent partnership objectives to address alternative energy integration challenges and power transmission constraints.

SANTA CLARA, Calif. and LITTLE ROCK, Ark., June 5, 2025 - Hitachi, Ltd. (TSE:6501, "Hitachi") and Southwest Power Pool, Inc. (SPP) today announced a strategic partnership to solve critical and imminent problems slowing the modernization of U.S. energy infrastructure. The partnership will produce an integrated AI-based solution that accelerates generator interconnection (GI) by reducing study analysis times by 80% while also informing faster, higher-quality decision-making by GI customers. This will markedly improve SPP's ability to facilitate the addition of its 14-state region's generating capacity to keep pace with increasing demand for electricity.

U.S. energy demands are rising by 2 to 3 percent annually[*1], driven by data center growth, expanding manufacturing, and electrification. Data centers alone are projected to consume up to 12 percent[*2] of U.S. electricity by 2028, versus 4.4 percent in 2023. Such trends drive an alarming supply and demand gap as generating capacity margins in the SPP footprint could decline from 24 percent in 2020 to just 5 percent in 2029 unless an intervention occurs.

That intervention starts with end-to-end technical innovation, first at the point of generator interconnection. Currently, the U.S. generates 1.28 terawatts of power[*3]. More than twice that generated amount waits in a queue as unusable backlog caused by today's grid interconnect process. The long wait times are due to exhaustive, time-consuming analysis and simulation studies required to ensure that new energy source introductions don't compromise existing grid reliability, stability, or performance.

To address this gap, the three organizations will combine their industry and technical expertise. The partnership draws on multiple Hitachi competencies for a complete solution: Method's design services; GlobalLogic's software engineering services; Hitachi Energy's energy portfolio management asset modeling solutions; Hitachi R&D's AI-based energy grid algorithm; and Hitachi Vantara's integrated storage and compute platform Hitachi iQ, built on NVIDIA accelerated computing, networking, and AI software.

As the regional transmission organization (RTO) framing the project, SPP will guide the integration of these technical solutions and services, leveraging its deep expertise in energy grid optimization. As a reliability coordinator prioritizing operational and customer experience improvements, SPP's input will also ensure the project outcomes align with industry-wide requirements and regulations.

"Our nation's demand for electricity has risen sharply in recent years following a long period of slow growth. Our industry has struggled to keep up with this sudden and significant shift," said SPP President and CEO Lanny Nickell. "There are a lot of would-be power producers out there waiting to connect to the grid, but yesterday's systems and technology haven't been sufficient to enable us to bring incremental capacity online fast enough. It's time to fix that, and SPP is proud to work with Hitachi and NVIDIA, two AI industry leaders who have the means to help realize a vision of a better energy future for our nation."

The integrated solution is an industrial AI system differentiated by its advanced proprietary AI algorithms and high performance enabled by Hitachi iQ's enterprise AI solution stack which sit at its core. Ultimately, dynamic AI-driven technologies will be applied to various study areas, such as:

- Process automation
- Predictive analysis
- Communication systems integration

The partnership with Hitachi and NVIDIA runs parallel to other improvements underway at SPP, including a from-the-ground-up reimagining of its transmission planning processes to align them with current and future industry needs. Together, these technological and process innovations are expected to set high-water marks in the electricity industry for generator interconnection, mid- and long-term planning, long-term forecast accuracy, analysis and deployment of additional grid-enhancing technologies, and more.

"This initiative is about reimagining the electricity production and distribution process through the lens of modern AI technology," said Frank Antonysamy, Chief Growth Officer, Hitachi Digital. "Real-time data access is needed to create truly realistic scenarios caused by new generator introductions. The AI solution we're all developing will provide that data, among other advantages. SPP can then make significantly quicker, better-informed decisions that will increase overall ROI while better serving the nation's population with accessible power. We're proud to be a part of this important three-way collaboration addressing such a crucial problem."

"Interconnection process acceleration is critical to meet the unprecedented demand on our grid," said Marc Spieler, Senior Managing Director of the Global Energy Industry at NVIDIA. "Using advanced NVIDIA accelerated computing and AI, Hitachi and SPP are helping speed interconnection studies to bring essential infrastructure online faster."

The project's phase one milestones are expected to be completed by winter 2025/26. They include initial systems acceleration, data management processes optimization, and the introduction of AI-augmented simulation modeling among other goals.

*1：https://www.eia.gov/pressroom/releases/press564.php

*2：https://www.energy.gov/articles/doe-releases-new-report-evaluating-increase-electricity-demand-data-centers

*3：https://emp.lbl.gov/news/grid-connection-backlog-grows-30-2023-dominated-requests-solar-wind-and-energy-storage

About SPP

Southwest Power Pool, Inc. (https://www.spp.org) is a regional transmission organization: a not-for-profit corporation mandated by the Federal Energy Regulatory Commission to ensure reliable supplies of power, adequate transmission infrastructure and competitive wholesale electricity prices on behalf of its members in 14 states. SPP ensures electric reliability across a region spanning parts of the central and western U.S., provides energy services on a contract basis to customers in both the Eastern and Western Interconnections, and is expanding its RTO and developing a day-ahead energy market in the west. The company's headquarters are in Little Rock, Arkansas.

About Hitachi, Ltd.
Through its Social Innovation Business (SIB) that brings together IT, OT(Operational Technology) and products, Hitachi contributes to a harmonized society where the environment, wellbeing, and economic growth are in balance. Hitachi operates globally in four sectors – Digital Systems & Services, Energy, Mobility, and Connective Industries – and the Strategic SIB Business Unit for new growth businesses. With Lumada at its core, Hitachi generates value from integrating data, technology and domain knowledge to solve customer and social challenges. Revenues for FY2024 (ended March 31, 2025) totaled 9,783.3 billion yen, with 618 consolidated subsidiaries and approximately 280,000 employees worldwide. Visit us at www.hitachi.com.

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.
