

Hitachi Energy and Pakal Technologies join forces in breakthrough silicon power semiconductor for high-voltage modules

Next-generation ≥ 3.3 kV power modules critical to advance rail, renewables, energy storage, AI and data center infrastructure

Zurich, February 24, 2026 – Hitachi Energy, a global leader in electrification, and Pakal Technologies, a cutting-edge innovator in silicon power semiconductor design, announced a collaboration to advance shared value creation and sustainable growth. Hitachi Energy will incorporate Pakal Technologies' groundbreaking Insulated Gate Turn-Off (Thyristor), IGTO(t)[™], silicon power switch into its portfolio of market-leading high-voltage power modules, beginning with devices used in essential applications such as rail, renewables, energy storage, AI, and data center infrastructure.

Semiconductors are essential to almost every critical system, forming the backbone of a stable, modern grid. The collaboration addresses one of the most significant challenges in large-scale electrification: reducing energy losses and improving overall efficiency in high-voltage power conversion. By combining Hitachi Energy's expertise in power module design with Pakal Technologies' IGTO(t) innovation – which delivers 30 percent lower losses compared to today's widely used devices – the collaboration aims to contribute to cumulative daily efficiency gains across energy infrastructure. Together, the companies intend to produce the highest-performing ≥ 3.3 kV power semiconductor modules for Hitachi Energy to offer to its large and growing global customer base, delivering higher performance, lower operating costs, and greater long-term reliability across critical electrification projects.

“With a century-long legacy of in-house semiconductor manufacturing expertise and ongoing expansion, Hitachi Energy is committed to advancing innovation in power electronics. We are pleased to join forces with Pakal Technologies to incorporate its novel IGTO(t) within our semiconductor portfolio,” said Niklas Persson, Managing Director of Hitachi Energy's Grid Integration business unit. “This collaboration represents, over time, an opportunity to strengthen the global energy ecosystem at its core.”

“Pakal Technologies was founded to make power conversion simpler, better, and more efficient. Collaborating with Hitachi Energy is an honor and secures a long-term partner capable of scaling impact with us,” said Ben Quinones, CEO of Pakal Technologies. “Having our IGTO(t) platform recognized by a company with Hitachi Energy's exceptional history for quality, reliability, and performance in the energy landscape ensures we can contribute to today's sprint toward the electrification era.”

The IGTO(t) represents the first new high-voltage silicon power semiconductor since the insulated gate bipolar transistor (IGBT) was introduced in the 1980s. The IGTO(t) delivers 30 percent lower conduction losses at high current and temperature than IGBT, while maintaining compatibility with existing module architectures. At the system level, these performance advances enable higher power density, reduced thermal and cooling requirements, and materially improved energy efficiency.

About Hitachi Energy

Hitachi Energy is a global technology leader in electrification, powering a sustainable energy future with innovative power grid technologies with digital at the core. Over three billion people depend on our technologies to power their daily lives. With over a century in pioneering mission-critical technologies like high-voltage, transformers, automation, and power electronics, we are addressing the most urgent energy challenge of our time – balancing soaring electricity demand, while decarbonizing the power system. With an unparalleled installed base in over 140 countries, we co-create and build long-term partnerships across the utility, industry, transportation, data centers, and infrastructure sectors. Headquartered in Switzerland, we employ over 50,000 people in 60 countries and generate revenues of around \$16 billion USD.

<https://www.hitachienergy.com>

<https://www.linkedin.com/company/hitachienergy>

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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.

About Pakal Technologies

Pakal Technologies is a fabless semiconductor company pioneering a new class of silicon-based power switches for the electrified future. Its patented IGTO(t) platform outperforms traditional IGBTs in efficiency, scalability, and cost – offering a frictionless upgrade path across power conversion markets. From electric vehicles to solar and industrial systems, Pakal's mission is to power the Electrification of Everything.

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.
