

For Immediate Release

August 4th, 2026

SWCC Corporation

Faraday Factory Japan LLC

SWCC and Faraday Factory Japan Sign Memorandum of Understanding Toward the Broad Implementation of Superconducting Cable Business

-Accelerating the Practical Application of Superconducting Cable Systems for Data Centers-

SWCC Corporation, headquartered in Kawasaki, Kanagawa, Japan, and represented by Tetsuo Komata, Representative Director, CEO, President, and Executive Officer, hereinafter referred to as “SWCC,” and Faraday Factory Japan LLC, headquartered in Hachioji, Tokyo, Japan, and represented by CEO Sergey Lee, hereinafter referred to as “FFJ,” have signed a Memorandum of Understanding for the development and social implementation of superconducting cable systems for use in data centers, hereinafter referred to as “DCs,” and other applications. By combining the technologies and expertise of both companies, SWCC and FFJ will jointly develop compact and space-saving superconducting cable systems and promote their introduction into power distribution systems within DCs. Through this collaboration, the two companies aim to establish an integrated service framework covering the development, implementation, and operation of superconducting cable systems with the goal of achieving social implementation by 2030.

Signing of Memorandum of Understanding Toward the Broad Implementation of Superconducting Cable Business

Joint Development of Superconducting Cable Systems for Data Centers



SWCC Corporation

- ✓ Design and manufacturing of superconducting cable systems
- ✓ Design of terminations and cooling equipment
- ✓ Testing and validation
- ✓ Implementation support for customer environments



Joint promotion of the project

- Materials procurement
- Customer development
- Joint proposals
- Demonstration testing
- Social implementation



Faraday Factory Japan LLC

- ✓ Manufacturing and supply of high-temperature superconducting coated conductors
- ✓ Provision of related technologies

Targeting Broad Implementation by FY2030

■Social Background

In recent years, the widespread adoption of generative AI and advancements in cloud services have driven the use of higher-performance and higher-density servers in DCs, resulting in increased power demand per facility. In addition to securing a sufficient power supply, the construction of new DCs and expansion of existing facilities require power infrastructure capable of delivering large amounts of electricity safely and efficiently within limited site and building spaces. However, conventional power cables face several challenges as the transmission capacity increases, including larger cable diameters, a greater number of installed cables, increased space requirements, higher installation workload, and heat generation caused by transmission losses. Against this backdrop, superconducting cable systems, which can transmit large currents through compact cables, are expected to serve as next-generation solutions for alleviating power supply constraints in DCs.

■Purpose of the Memorandum of Understanding

SWCC has been engaged in the research and development of superconducting technologies since 1988. Through multiple R&D and demonstration projects, including a 35 kV superconducting cable transmission system in Tianjin, China, a tri-axial superconducting cable for plant applications, and a superconducting propulsion system for aircraft, SWCC has accumulated extensive expertise in superconducting technologies. SWCC's strength lies in being the only company in Japan currently capable of designing and installing an entire superconducting cable system, including not only technologies for cabling coated conductors but also terminals, cooling systems, installation, and evaluation of the system.

FFJ has a proven track record of supplying over 10,000 km of high-temperature coated conductors to world-leading projects in fusion, energy, aerospace, medicine, and science.

Under this MOU, SWCC will be responsible for the design, manufacture, and installation of superconducting cables, system design including terminals and cooling, and support for implementation in customer environments. FFJ will be responsible for the manufacture and supply of high-temperature coated conductors, as well as the provision of related technologies. In addition, the two companies will collaborate broadly in areas ranging from materials procurement, customer development, joint proposals for DCs operators and other customers, information dissemination, demonstration testing, and social implementation. By combining their respective technologies and track records, SWCC and FFJ will promote an integrated approach covering coated conductor selection and supply, system design, evaluation and demonstration, and customer proposals. Considering each customer's power requirements, installation environment, and operation and maintenance needs, companies will provide total solutions, accelerate development, and aim for early social implementation.

■Value to Be Delivered

Superconducting cables are power cables that leverage the “superconducting phenomenon,” whereby certain materials exhibit extremely low electrical resistance when cooled to cryogenic temperatures. In this initiative, we are developing a system—including associated cooling equipment—that aims to deliver high-capacity electric power to DCs via low-voltage, high-current transmission.

Compared to conventional cross-linked polyethylene (XLPE) power cables, superconducting cables can reduce cable cross-sectional area by approximately one-fifth and weight by roughly one-thirty-fifth, under specific design conditions. These advantages are expected to significantly decrease wiring space requirements, increase flexibility in equipment layout, and reduce both the number of cables needed and the overall workload during installation, thereby contributing to greater efficiency in construction, expansion, and renovation projects.

Additionally, by reducing heat generation during power transmission to about one-tenth that of conventional cables, superconducting systems further enhance safety and operability. By addressing the dual challenges of rising power demand and limited installation space, this solution will enable high-capacity power delivery even within the constraints of existing infrastructure, supporting both the expansion of DCs and the drive toward higher server density.

■Future Initiatives

Going forward, SWCC and FFJ will focus on space-saving, large-capacity power supplies for DCs, considering installation environments, as well as operation and maintenance requirements. They will work to create demonstration opportunities for superconducting cable systems suitable for power distribution within DCs, with the aim of achieving social implementation by 2030. As the first step, the companies will build a practical-scale demonstration line and conduct demonstration tests at SWCC’s Sagamihara Site. SWCC and FFJ address the social challenges of increasing power demand and limited installation space and support the sustainable growth of DCs and other growth industries from the perspective of power infrastructure. In the future, companies also aim to expand applications to in-plant power distribution at steelworks and large-scale chemical plants, next-generation mobility, fusion energy, and other advanced fields.

■Comments from Both Companies

Yuichi Morishita, Executive Officer, CTO, SWCC Corporation

"The digitalization of society, including the widespread adoption of generative AI, is creating demand for greater power supply capacity and flexibility in power infrastructure than ever before. By combining SWCC’s cable system technologies, cultivated over many years, with FFJ’s high-temperature superconducting wire technologies, we aim to achieve the social implementation of new power supply solutions tailored to customer needs.

Through this initiative, we will accelerate the growth of our power infrastructure business, as set forth in our medium-term management plan, and further advance our transformation into a solution

company that creates the future of energy and digital technologies. "

Sergey Samoylenkov, Board member, Director of Strategic Planning and Business Development,
Faraday Factory Japan LLC

"FFJ strongly supports the development of new energy-related projects in superconductivity. Based on our proven track record in supplying high-temperature coated conductors to world-leading projects, we are confident that our collaboration with SWCC Group will create new business opportunities. Superconducting technologies have significant untapped potential, particularly in terms of energy savings and the decrease of consumption of critical resources such as copper and rare earth elements. We believe that implementing the results of this project in society will be very beneficial."

■About SWCC Corporation

Since its establishment in 1936, SWCC has supported a society in which electricity and communications can be used safely and reliably. Today, SWCC's core businesses are centered on two segments: Energy & Infrastructure and Communications & Components. By continuing to take on the challenge of creating new businesses, SWCC has evolved beyond the framework of a comprehensive electric wire and cable manufacturer into a solution-oriented value-creation company that addresses social issues through manufacturing. In 2026, SWCC will mark its 90th anniversary. Looking to become a company that continues to take on global challenges for the next 100 years, SWCC will continue to pursue transformation and growth.

"Innovating new ideas today. Becoming the norms of tomorrow."

For more information, please visit [SWCC website](#).

■About Faraday Factory Japan LLC

Since its establishment in 2011, FFJ has been engaged in the manufacture and supply of high-temperature superconducting coated conductors while accumulating expertise in materials and process technologies. The total length of coated conductors manufactured and supplied by FFJ to date exceeds 10,000 km, which is an industry-record achievement. FFJ products have been adopted by more than 250 companies, research institutions, and universities in approximately 30 countries across four continents. FFJ's coated conductors are currently used in four different types of compact fusion reactor prototypes under development worldwide, and the company is also expanding its applications into a broad range of fields, including power, space, and medical technologies. As FFJ marks its 15th anniversary, the company will continue to contribute to the realization of a sustainable society through wider adoption of superconducting technologies.

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