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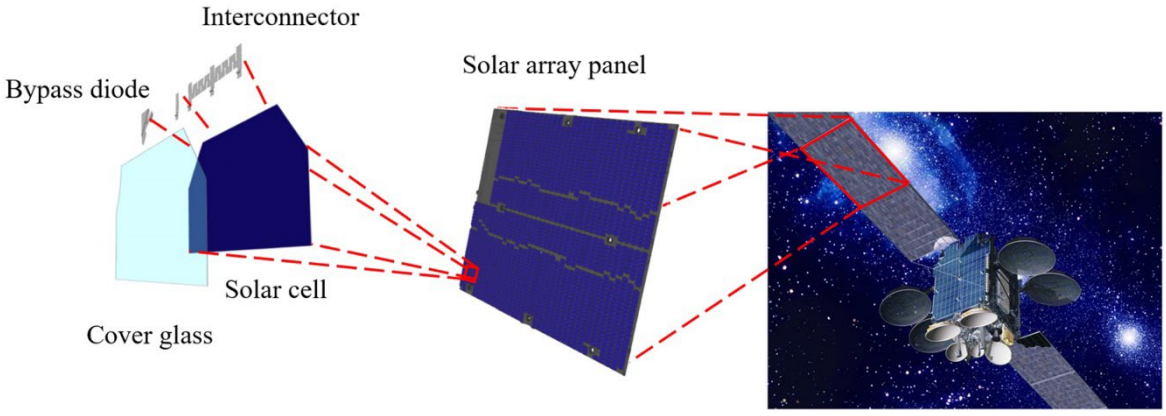
Mitsubishi Electric Selected as Representative Organization for JAXA's Space Strategy Fund to Develop Solar Cells and Related Components for Satellites

Will help strengthen Japan's satellite supply chain through lower prices and increased supply



Configuration of solar array

TOKYO, August 21, 2025 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today it has been selected as a representative organization for the technology development titled "Development of Domestic Solar Cells, Cover Glass, and Solar Arrays" under the "Development/Verification of Parts/Components for the Establishment of Satellite Supply Chain," one of the technology development themes included in the 1st Phase of the Space Strategy Fund[1] operated by the Japan Aerospace Exploration Agency (JAXA). The company has signed a contract with JAXA covering this development.

In recent years, with the expansion of the satellite market, including low earth orbit satellite constellations,[2] the demand for solar cells onboard satellites and cover glass to protect solar cells from space radiation has increased, and a global supply shortage has caused high prices and long delivery times.

[1] A fund established in JAXA by the Cabinet Office, Ministry of Internal Affairs and Communications, Ministry of Education, Culture, Sports, Science and Technology, and Ministry of Economy, Trade and Industry to support advanced technology development, technology demonstration, and commercialization in the space sector by private companies and universities.
[2] A system that deploys numerous small satellites in low Earth orbit (approximately 200 to 2,000 kilometers in altitude) to function collaboratively.

As part of this project, Mitsubishi Electric will develop low-cost, mass-producible solar cells in collaboration with domestic suppliers who have expertise in the solar cell field. In addition, the company will verify the applicability of glass used for ground-based products to the space environment and work toward the mass production of low-cost cover glass. Furthermore, Mitsubishi Electric will develop new solar arrays incorporating the new solar cells and cover glass, aiming to enable smoothly integrated domestic production of these. The company will help to strengthen the domestic satellite supply chain by reducing the cost of solar arrays and their components and strengthening supply capabilities.

In the development of solar cells, which are particularly important components, Mitsubishi Electric will collaborate with Japan-based PXP Corporation, which possesses cutting-edge technology in the solar cell field and conducts research and development on next-generation photovoltaic conversion elements,[3] including perovskite structures[4] and CIGS.[5] The collaboration will focus on research into the practical application of perovskite/CIGS tandem solar cells—cells that combine both perovskite solar cells and CIGS solar cells—in the space environment. These solar cells have conversion efficiency equivalent to conventional products[6] and are expected to maintain conversion efficiency while having higher resistance to space radiation than conventional products. Additionally, both perovskite solar cells and CIGS solar cells can be manufactured more easily, more cheaply and in greater bulk than conventional products. The combination of the advanced solar cell manufacturing technology of PXP and Mitsubishi Electric's extensive satellite system development and manufacturing technology will facilitate the cost-effective mass production of solar cells that maintain high reliability and conversion efficiency, even in space.

Natsuki Asano, Senior Manager, Solar Array & Composite Engineering and Project Section, Satellite Mechanical Components Department, Kamakura Works, Mitsubishi Electric Corporation, who will lead the representative organization, said, "We are very pleased to have been selected as a representative organization for the Space Strategy Fund. Through the practical implementation of solar arrays equipped with domestically produced solar cells and cover glass that balance low cost and high performance, while ensuring resistance to the space environment and enabling mass production, we will help strengthen Japan's satellite supply chain and enhance the international competitiveness of the country's space industry."

[3] A new type of element that has superior efficiency and performance in converting light to electricity compared to conventional technologies. It is used in fields such as solar cells and optical sensors, with expectations for improved energy conversion efficiency and the realization of new functionalities.
[4] A type of crystal structure of compounds that shares the same crystal structure as perovskite (calcium titanium). Compounds with a perovskite structure are attracting attention as materials for next-generation solar cells due to their high conversion efficiency, low cost, and flexibility.
[5] An abbreviation for compound semiconductor materials primarily composed of copper (Cu), indium (In), gallium (Ga), and selenium (Se). It is used as a material for solar cells.
[6] Currently mainstream III-V solar cells.

Overview of the Technology Development

Implementation Period	From May 2025 to March 2031[7]
Leader of Representative Organization	Natsuki Asano, Senior Manager, Solar Array & Composite Engineering and Project Section, Satellite Mechanical Components Department, Kamakura Works, Mitsubishi Electric Corporation
Objectives	- Develop technology enabling cost-effective domestic mass production of solar cells by collaborating with domestic suppliers and adopting perovskite structures and CIGS materials, the manufacturing costs of which are easier to control. - Deploy high-efficiency perovskite/CIGS tandem solar cells in space applications and develop solar cells that maintain high conversion efficiency in space by leveraging the high radiation resistance of CIGS. - Verify the adaptability and resistance of cover glass developed using domestic ground-based glass manufacturing technology to the space environment, allowing the application of low-cost, mass-producible domestic cover glass for space use. - Conduct implementation design and verification of space environment resistance for the solar arrays which are incorporated with newly developed domestic solar cells and cover glass, as well as develop technology capable of scaling production of these to match the increased production of solar arrays.

Future Plans and Prospects

By supplying the solar cells, cover glass, and solar arrays developed as part of this initiative for use in domestic satellites, including those it develops and manufactures itself, Mitsubishi Electric aims to help ensure the autonomy and competitiveness of Japan's space industry and provide further support to the increasing level of commercial activity in space.

About PXP Corporation

PXP Corporation (Head office: Sagamihara City, Kanagawa Prefecture; Representative: Satoru Kuriyagawa) is a green tech start-up company established in Japan in 2020 by engineers with extensive experience in the solar panel field. Combining perovskite and chalcopyrite solar cell technologies, which are expected to be the next generation solar cells, we are promoting R&D and mass production of ultra-light, flexible, and non-fragile solar panels that can be installed not only on the ground, but also in space.

[7] The initial contract period is from the date of contract signing until the last day of the fiscal year in which the first stage gate evaluation is completed.

About Mitsubishi Electric's Space Systems Business

Mitsubishi Electric, a leader in Japan's space development, has participated in various domestic and international satellite development and manufacturing projects, primarily focusing on those promoted by JAXA. Going forward, the company will continue to enhance its advanced technologies, helping to achieve greater sustainability and boost prosperity by overcoming the challenges faced in the development of technology used in space.

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About Mitsubishi Electric Corporation

With more than 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its "Changes for the Better." The company recorded a revenue of 5,521.7 billion yen (U.S.$ 36.8 billion*) in the fiscal year ended March 31, 2025. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥150=U.S.$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2025