September 10, 2025

Ricoh Company, Ltd.
Daiwa House Industry, Co., Ltd.
NTT Anode Energy Corporation

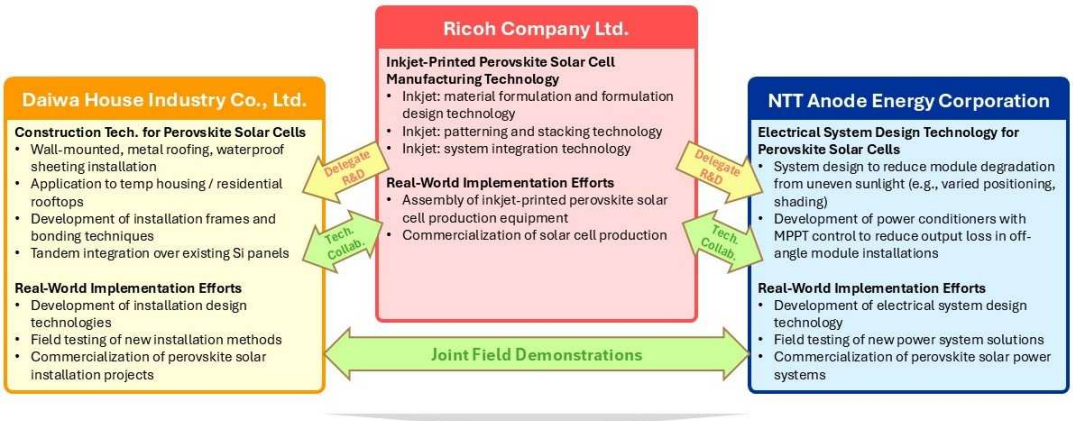
Consortium of Ricoh, Daiwa House, and NTT Anode Energy selected for NEDO Green Innovation Fund

Joint project to develop and demonstrate perovskite solar cell technology for real-world deployment

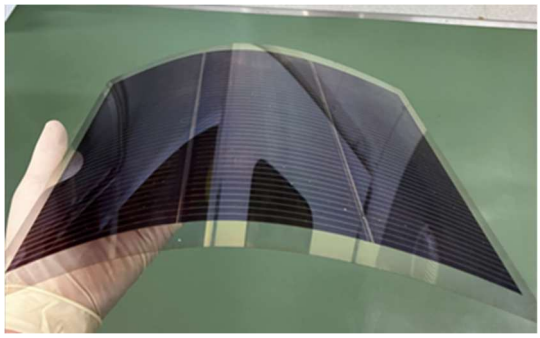
Ricoh Company, Ltd., Daiwa House Industry Co., Ltd., and NTT Anode Energy Corporation announced that its consortium joint project has been selected for Japan's Green Innovation Fund, which is administered by the New Energy and Industrial Technology Development Organization (NEDO).

Through this project, the three companies will leverage their combined technical strengths to jointly develop inkjet-based production technology for perovskite solar cells, as well as construction design and electrical systems integration. By pursuing these technologies through a unified, end-to-end approach, the project aims to accelerate the practical application of perovskite solar cells in society. The consortium will offer a high-impact solution to help increase the adoption of renewable energy by delivering perovskite solar cells that are lightweight, easy to install, and suitable for rooftops and wall surfaces—especially in locations where conventional silicon-based panels are difficult to deploy due to low load-bearing capacity.

Roles of the Consortium partners



Technical development and demonstration of domestic perovskite solar cell production, construction, and implementation for real-world deployment



Inkjet Printed Perovskite Solar Cells

Project Scope and Partner Roles

Ricoh

Ricoh will lead the development of production technology for perovskite solar cells using inkjet printing. Ricoh has developed core technologies, including organic photoconductors, inkjet heads, ink and supply systems, and roll-to-roll transport, through its multifunction printer R&D. These technologies will improve energy conversion efficiency and durability, enabling high productivity and lower production costs. Inkjet printing allows for precise patterning and the stacking of functional layers in designated locations, which supports design flexibility and custom sizing, accelerating adoption in diverse applications.

Daiwa House Industry

Daiwa House will lead the development of construction and installation technologies for perovskite solar cells on the rooftops of large logistics facilities and the exterior walls of data centers. Daiwa House has a proven experience of successfully implementing renewable energy systems in a wide range of facilities, including single-family homes, apartments, commercial buildings, logistics facilities, business facilities, and environmental facilities. The company is expanding the use of renewable energy through ZEB and ZEH housing, as well as solar power systems.

NTT Anode Energy

NTT Anode Energy will lead the development of electrical system design. With over 60 years of experience in solar power deployment and electrical systems since the NTT Public Corporation era, NTT Anode Energy has begun evaluating perovskite performance characteristics in 2023. The company will address power generation loss caused by uneven sunlight exposure on curved roofs or wall installations. It will do so using optimized module layouts, string configurations, and its proprietary power conditioning systems.

Roadmap to 2030

Following the selection by NEDO, the three companies will also collaborate with building material manufacturers, such as roofing, exterior walls, and waterproofing materials, from the early stages of development to ensure the feasibility of large-scale social implementation. The project is scheduled to run for five years through FY2029, with the goal of establishing perovskite solar technology for building-integrated (BIPV) and building-attached (BAPV) applications. By FY2030, the consortium aims to achieve an annual production capacity of over 300 MW and reduce power generation cost to 14 yen/kWh.

- **BIPV**: Building Integrated Photovoltaics – solar cells built into construction materials
- **BAPV**: Building Attached Photovoltaics – solar cells mounted onto existing structures