

Green innovation fund Project / Development of next-generation solar cells



NEDO's Projects

Project Period : 2021～2030

Budget : 80.05 billion yen

In order to achieve carbon neutrality by 2050, it is necessary to maximize the introduction of renewable energy, including solar power, as a major source of electricity. At the same time, we aim for the early social implementation of next-generation solar cells that can be installed even in locations where installation has been difficult until now.



(1) Development of next-generation solar cell base technologies

- Development, analysis, and evaluation of common base technologies for perovskite solar cells.
- Development of technologies which contribute to improvements in durability and efficiency and cost reduction.
- Collaborate with the company side of development (2).

(2) Practical application project of next-generation solar cells

- Establishment of a technology to fabricate practical-size modules (900 cm² or larger) of perovskite solar cells.
- Development of element technologies to achieve a power generation cost of 20 yen/kWh or less under certain conditions.
- Establishment of element technologies for each manufacturing process to achieve scale-up.

(3) Demonstration project of next-generation solar cells

- Aim to achieve a power generation cost of 14 yen/kWh or less through field demonstration of the production process established in Research and development (2).
- Develop technologies to achieve high throughput and high yield.
- Verify the performance including installation and construction methods which take advantage of lightweight and flexibility.

(4) Demonstration project of Next-Generation Tandem Solar Cell Mass Production Technology

- Conduct research and development aimed at establishing manufacturing process technology for large-scale modules of high-performance tandem perovskite solar cells.
- Develop mass production technology that achieves short takt time and high yield rate to reduce power generation costs.
- Conduct demonstration tests assuming social implementation forms such as rooftop and ground installations, and verify power generation performance.