North Energy Inc.

Project to promote renewable energy usage through vertical double sized solar equipment in regions with heavy snowfall

Purpose of the Project

This project aims to propose vertical solar power systems for regions such as Hokkaido, where heavy snowfall makes it difficult to install conventional solar power systems, and enhance power generation efficiency in such environments. This will contribute to realize a decarbonized society by providing renewable energy solutions not only in such regions, but also with people without space enough for conventional systems.
Vertical solar technology is not widely recognized and material and installation costs are higher, but we plan to deal with them by expanding sales channels, collaborating with Suichoku Solar (SS) , and using subsidies. Emphasis on benefits such as efficient land use, dual power peaks (morning and evening), and high winter efficiency due to snow reflection will promote their broader adoption in snowy regions.

Details of Demonstration

In this subsidy project, we collaborated with SS (founded in June 2023), which is the first company in the world to commercialize vertical solar power systems. With a proven track record in 11 countries, they aimed to raise awareness in Japan as a company providing high-efficiency power generation, especially in snowy regions, through double-sided generation and snow reflection. This project included demonstration trials in Horokanai Town, where the panels were installed in limited spaces, typical in snowy areas. They supported us with an effective layout plan, ensuring safety and compliance with JIS standards. They also provided guidance on system design, construction, and infrastructure maintenance. Although the project experienced delays due to changes in the installation site and revisions to the Electricity Business Act, the construction completed in December. Despite the short demonstration period, the system successfully generated electricity in space-efficient configurations. We confirmed that such systems could be easily installed in car parks, pavements, and other compact areas. Even the customer who installed the system has already purchased additional land to expand it. This further demonstrates the demand for vertical solar systems in snowy areas. Going forward, we will continue to promote these systems and contribute to Japan's goal of achieving carbon neutrality by improving the cost-effectiveness of the system.

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Project Outcome

◆ Space-Efficient Installation

We proposed two designs: one for a pathway at a food distribution center and another for the space between neighboring properties. We were able to secure sufficient space and install fences without any problems, expanding the options for future proposals.

◆Fence installation

Attaching a fence to a frameless module to realize high safety features is not ideal for installation in limited spaces, but it is required due to modification in legislation. The cooperation with SS allowed us to propose a fence-integrated design. Fences can also be installed in parking lots and similar areas upon request for safety.

◆Stable power generation in winter

We have already confirmed the power generation data in Horokanai Town, which is a heavy snowfall area. And we have also achieved stable power generation results with limited spaces in snowfall areas.

◆Increased recognition

We actively participated in industry seminars and exhibitions during the year, resulting in numerous inquiries about our system. Consequently, we successfully supplied and installed a system in Niseko Town, which led to further increases in market awareness and acceptance.

Challenges and Solutions

◆ Issue 1: Low Name Recognition

It is gradually improving through seminars and participation in EXPO.

◆ Issue 2: Installation Costs

1.Higher equipment costs due to wind and snow resistance specifications
2.Transportation costs to Hokkaido
3.More expensive than conventional equipment due to fewer installation cases
4.Additional costs for winter construction

Although these challenges exist, we will promote its adoption by highlighting the benefits, including morning and evening peak power generation, easy maintenance, space-saving design, winter efficiency, and reduced collapse risk.

Future Plans

◆ To enhance our name recognition, we will continue to participate in seminars and EXPOs while showcasing our construction and power generation achievements in various regions.

◆ We are currently developing strategies to promote renewable energy across Hokkaido. Our focus includes municipalities with heavy snowfall, high-energy-consuming factories, and agricultural solar power projects.