News Release

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Sumitomo Electric Industries, Ltd.
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Sumitomo Electric Has Installed Over 10,000 PLC String Monitoring Unites for Solar Power Plants

Sumitomo Electric Industries, Ltd. is pleased to announce that its sales of power line communication (PLC) string monitoring units for solar power plants have exceeded 10,000 units (as of the end of October 2020). The Company started to sell these units on a full scale in 2016 and has continued to expand its product lineup and services. The units have been introduced to 81 solar power plants (power generation capacity: 561 MW in total).

To enable solar power plants to maintain high power output over a long period (20 years) under the feed-in tariff (FIT) scheme,[*1] it is essential to predict and prevent failures based on appropriate operational management and maintenance checkups. For preventive purposes, it is effective and important to perform continuous monitoring to accurately detect change points rather than gathering momentary and fractional information obtained by I-V curve (Current-voltage characteristic) measurement and thermal monitoring using drones. Sumitomo Electric's PLC string monitoring units feature low initial cost, stable transmission of monitoring data and high lightning resistance. Continuous monitoring of solar power grid enables stable operation of plants over the long term.

[Features of the PLC String Monitoring Units]

1. Achieve low-cost and stable transmission of monitoring data by using PLC technology, and enable retrofitting to existing power plants

Sumitomo Electric's PLC string monitoring units use power lines as communication lines. Since the units can be introduced to existing power lines without the need for extra construction work to lay communication lines, they can reduce costs (by 70% compared to other systems based on an estimate by Sumitomo Electric). The units are also retrofittable to existing power plants. Wired connection ensures highly stable data transmission.

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2. Enable continuous monitoring for each string, making it possible to detect abnormalities and implement measures at an early stage

In power plant monitoring based on power conditioners, abnormalities cannot be detected until they spread to a certain level. Sumitomo Electric's units monitor each string*2 and can detect abnormalities before they become manifest in power conditioner monitoring. This makes it possible to detect abnormalities quickly and implement measures at an early stage.

3. Analyze the monitored data using AI and automatically determine the details of the failure

In November 2019, Sumitomo Electric launched a service to analyze the data collected by the string monitoring units using AI to provide daily, monthly and annual reports. The details of failures are determined automatically by using AI and are notified together with the locations of the failures. This supports accurate and efficient operational management and maintenance checkups. Introduction of this service can reduce man-hours required for periodic checkups.

Sumitomo Electric remains committed to offering highly convenient string monitoring units and auxiliary services to contribute to the widespread use and stable operation of solar power generation.

*1 Under this scheme, electricity utilities are required to purchase electricity generated by renewable energy sources (e.g., solar power generation) for a certain period at a price designated by the national government.

*2 A string is the minimum unit of solar panels that are connected in series.

■ Reference

Sumitomo Electric's Website

https://sumitomoelectric.com/