

SOLAR

J O U R N A L



TIME FOR SOLAR TO MEET THE CHALLENGE



**SOLAR IN SOUTHEAST ASIA
AN OVERVIEW**

**NEW SOLAR TRENDS
FASCINATING INNOVATIONS**

Ampt String Optimizers in use in Mongolia

Ampt is a leading company in power conversion technology.

The ability of its core product - Ampt String Optimizers - to increase energy generation has been recognized, and as sales increase more are being installed in overseas power plants.



Ambassador of Japan to Mongolia attended the opening ceremony (second from the left). The project strengthened the bond between Japan and Mongolia.

10 MW solar power plant in Mongolia

Ampt is a company that is headquartered in the United States, and has expanded its business across North America, Europe, the Middle East, and Asia. The company's String Optimizer DC/DC converters represent an innovation in the solar power market and improve the performance of PV systems while lowering costs. In addition to Ampt's patented technologies, "String StretchR" and "Ampt ModeR", Ampt Optimizers put two maximum power point trackers (MPPT) on each string to limit output voltage and current. These products enable plant managers to maximize the DC output, and enable each string to provide maximum power with limited voltage through either central inverters or string inverters. They also enable system designers to double the number of modules per string, and enable DC ratios of 2-to-1 or more, allowing up to 70% more energy to be generated compared to a conventional ratio. In this way, it is possible to reduce costs, improve performance and to increase the ROI (return on investment).

Farmdo Co., Ltd., a company that has been active in the Japanese agricultural sector, is using Optimizers for its solar energy farm business. The company has a total of 40 MW of solar farms in Japan, with crops growing underneath their solar panels. Farmdo

is planning to increase its solar holdings to about 100 MW. Optimizers are also used in the company's first overseas project (module 12.7 MW, power conditioner 10 MW). The project will be run by a joint corporation between Farmdo Co., Ltd., and a Mongolian company as a subsidy project through the Joint Crediting Mechanism (JCM). Ampt Optimizers have been installed since October 2016 on 15 of Farmdo's power plants, totaling 21.2 MW. The company is planning to install optimizers on 18 power plants for a total of 44.5 MW.

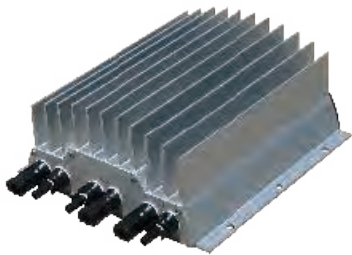
Installed into existing mega solar plants. Chosen by more Japanese companies.

The advantages of Ampt String Optimizers were spotted early on by Taiho G&N corporation (Shinagawa, Tokyo), which became a distributor for the product. The Japanese company was established in April 2016 to improve the efficiency of renewable energy installations by 10%. "We found that they fit into existing domestic mega solar power plants. That is why we decided to sell them as a core product of our PV booster line-up", says Taiho. After the actual installations, customer satisfaction is high. Ampt is carving out a space for itself as the premier optimizer manufacturer.

A solar energy farm installed Ampt String Optimizers in Mongolia

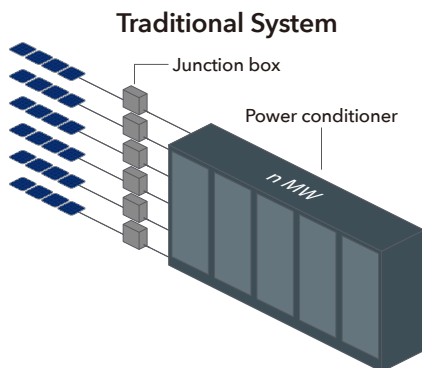


The mega solar power plant has a capacity of 12.7 MW. Tall panels are installed in some areas for a solar sharing project. Crops grow under the panels.



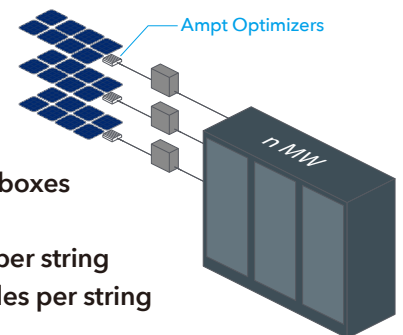
Ampt String Optimizers build powerful solar power plants.

More modules per string

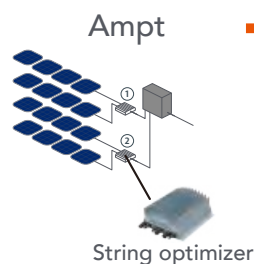
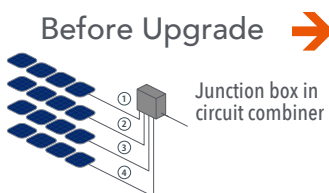


Three
Ampt
Optimizers

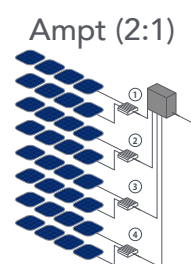
- 50% fewer junction boxes
- 50% shorter wire
- More energy MPPT per string
- 2x number of modules per string



High DC/AC ratio systems



50% fewer combiners
per junction box



Twice the number of
PV modules for
4 circuit combiners



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