

SHAPING THE FUTURE WITH "TSUNAGU" TECHNOLOGY.

# FUJIKURA NEWS

## President's New Year Greetings



President & CEO Masahiko Ito

Happy new year everybody.

As we begin the New Year, allow me to speak frankly. Last year, Japan's economy continued to see a moderate recovery overall, despite concerns on issues such as growing trade tensions and the future of China's economy. Japan also suffered damages across the country due to landslides and river flooding caused by record breaking winds and rainfall from typhoons. I would like to offer my sympathies to those affected.

Next, I would like to talk about the earnings forecast for FY2019. First half results indicated that the Power and Telecommunication Systems sub-company was largely affected by rapidly falling prices of optical fibers and optical cables that began in China, an important market for the telecommunication systems segment.

The Electronic Products and Connector sub-company saw demand plateau for FPC used in smartphones and was impacted by intensification of price competition as a result. This weaker profitability in these two core businesses led to challenging results.

The Telecommunications sub-company will begin full-fledged discussions on structural reforms, assuming that stagnate demand and low prices for optical fibers and optical cables in China and emerging markets will continue. Nevertheless, demand remains firm in North America and demand in Europe, a new market we just entered, is expected to grow going forward. The sub-company will expand sales of high value-added products such as SWR and WTC, along with peripheral equipment and components in those market.

The FPC Business sub-company needs to return to our "monozukri" roots and make steady progress toward improving profitability and yield by utilizing every possible methods including IoT technology and automation.

Automotive Products Business sub-company continues to secure profits using its proposal capabilities and management best suited to the conditions.

In terms of R&D, we are promoting initiatives that further evolve "Tsunagu" technology based on our technology platform. To speed up these efforts, we will reinforce our global R&D structure, which can effectively promote co-creation with outside institutions around the world. In existing technology domains, we will promote R&D of next-generation optical fiber and low-cost production technologies. In 5G telecommunications, which is to see major advancements, we will advance R&D for expanded wireless bandwidth, including low-loss passive parts using millimeter wave communications modules and quartz substrates. We will also speed up development aimed at the commercialization of high-temperature superconductivity solutions. As for fiber lasers, we are moving forward with R&D of single mode fiber lasers capable of high speed, highly accurate and high quality processing. In addition, we will work with our European R&D Center to conduct R&D on charger components for electric vehicles, high-speed in-vehicle Ethernet, and battery wiring systems.

My best wishes for health and happiness in the New Year.

# Exhibition Fujikura Exhibits at BICSI JAPAN District Conference & Exhibition

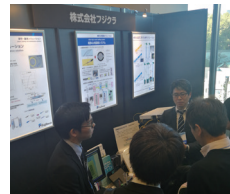
BICSI JAPAN District Conference & Exhibition hosted by the Japan branch of BICSI\*, an international education organization for network technicians, was held on Tuesday, November 21. This event includes the lectures by international speakers on a wide variety of themes related to ICT and the exhibition of 25 sponsor companies' products. This year, along with the ordinary event, a competition called Cabling Skills Challenge took place. In the competition, young technicians of little experience pit their wiring technique.

Our booth was quite busy with more visitors compared to the last year, enjoying opportunities to introduce our data-center-related products to many of them.

BICSI's activities aims at the improvement of network design and installation technicians' skills, and Fujikura approves of the aim and supports the activities for a long time. We will contribute to installation training by offering better quality products and

designing networks appropriately and support ICT society, which advances further.

\*BICSI is a non-profit organization founded in 1974 (Information and Communication Technology). The organization aims to help technicians acquire expertise that is essential in the ICT industry and contributes to the development of the industry by offering information on the industry's cutting-edge technology trends and by holding registered examinations or certification examinations. he ognization has more than 24,000 members in about 100 countries worldwide.



● Fujikura booth



● Technicians pitting their wiring skills

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# R&D Tackling Heatstroke Using ICT -Visualization of Bulb Globe Temperature (WBGT)

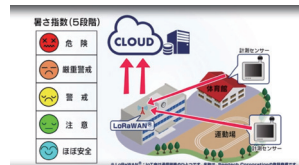
From July to September in 2019, Fujikura, Suita City, NTT WEST, and NTT FIELDTECHNO jointly tried a system that uses LoRaWAN™ to protect students from heatstroke. Currently, NTT WEST shows their initiative by video on its website.

In the experiment, sensor nodes were placed at two locations of the ground and gymnasium of Suita City Minamisenri Junior-high School to measure temperature, moisture, and radiant heat. The measured data is accumulated in the Cloud through LoRaWAN™ and enables checking (visualizing) of the bulb globe temperature (WBGT) using PC and tablets in the teachers' room. The system urged prompt response according to the level of WBGT by alarm lights placed in the field and gymnasium or emails. We received comments from the school staff saying, "The system is helpful in further tackling and

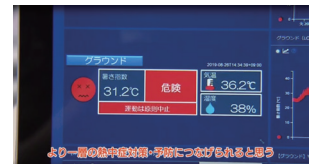
preventing heatstroke." We will use the knowledge obtained by the experiment in wide areas and contribute to and cooperate in the creation of society where everyone can live safely and healthy using ICT.



● Solution examples (NTT WEST's website)



● Outline of system for heatstroke prevention



● Cloud application for WBGT

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# Start of High-voltage Cable Diagnostic Service using IoT



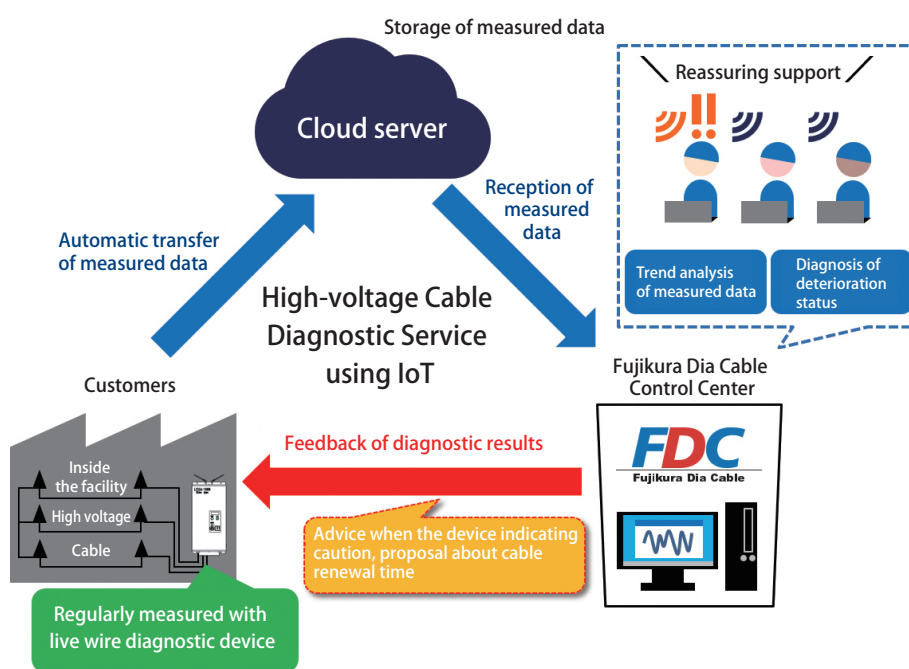
Fujikura Dia Cable has started high-voltage cable diagnostic service by IoT. Many high-voltage cables are used to supply electricity to equipment in factories and play a very important role in operating the factories stably. Over about 60 years since high economic growth period, factories and infrastructures have been aging, and high-voltage cables installed in these facilities have been also deteriorating. Further deterioration of these cables can end up causing not only dielectric breakdown and blackouts to stop the operations but also serious disasters such as fires started by cables being burnt. To prevent these disasters, it is effective to periodically monitor live cables.

Our diagnostic service is to measure the resistance of cable sheath and insulation copper tape (hereafter shield) using a live wire diagnostic device (LISSA-1000) attached to a high-voltage cable. This device measures even live cables safely by connecting

condensers for commercial-use-voltage grounding to the shields of each phase and applying direct currents to them. The data obtained is uploaded on the Cloud server through the Internet.

A series of operations from measurement to data upload is automatically done at intervals set in advance. Since the data is presented graphically, the users can check the graph of sheath insulation resistance and shield resistance anytime anywhere. In addition, our specialist staff can send monthly reports or advice about diagnosis after analyzing the measured data stored in the Cloud. This service is available for different customers because it can be introduced into small-and-mid-sized factories and stores that receive a high voltage current as well as those receive an extra-high-voltage current.

Fujikura Dia Cable will support our customers' high-voltage cable maintenance to help their stable operations.





## Fujikura's Joining RE100 Promotes Achievement of Environmental Long-term Vision 2050

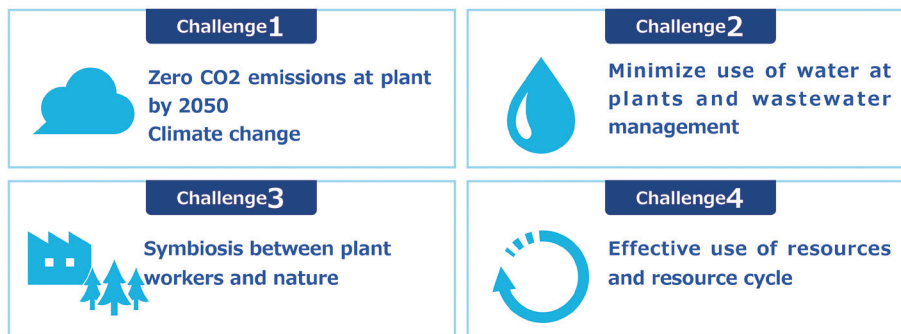
In 2016, the Fujikura Group analyzed RCP2.6 scenario (aims to keep global warming below 2°C above pre-industrial temperatures) and established the Fujikura Group Long-term Environmental Vision 2050. Looking towards the future in 2050, we are tackling the challenges described in the below diagrams to minimum environmental burden. We think the hardest challenge of the environmental long-term vision is Challenge 1: Zero Co2 emissions at plants. To show our attitude, we replaced our energy for our headquarters building in Koto-ward, Tokyo, to renewable one from a water power generator. Our group's plant in Fukui Prefecture now uses renewable energy as well. We'd like to introduce renewable energy to other locations including foreign plants closely considering economic rationality based on thorough energy-saving measures.

We also joined RE100, which is a global corporate leadership initiative led by The Climate Group, an international NGO, in partnership with CDP and has 212 members worldwide (as of November 30, 2019). Taking the opportunity of joining RE100, we will speed up the achievement of our long-term environmental vision by introducing renewable energy and also contribute to reducing climate change risks, which are challenges for United Nations Sustainable Development Goals (SDGs).

\*RE100 is a global corporate leadership initiative launched by the Climate Group (TCG) in partnership with CDP, named RE100 with the acronym for renewable energy 100%.



### ● Four challenges in Fujikura Group Long-term Environmental Vision 2050



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