

Creating a “Core” for electricity and connecting power plants with customers

Furukawa Electric Power Systems Co., Ltd. (FEPS, Yokohama city, President: Kazuya Ono) is a subsidiary of Furukawa Electric Co., Ltd. and deals with power system related parts. Its business area is wide enough to cover transmission up to distribution and supports power systems starting from the transmission and distribution grid with such 9 unique technologies as Large rubber molding, Vibration suppression, Connection and compression integrated manufacturing, Copper thermit welding, Flexible conductor, Power feed for mobile unit, Multilayer rubber molding, Rubber kneading and extrusion, Detachable energizer.

Among these products, its products for wind and snow countermeasures supporting transmission grid work well under Japan’s severe winter and establish a trust. FEPS expands these products in overseas markets, steadily gaining trust. In this article, we would like to introduce FEPS’s technologies and products which have high reliability in Japan as well as overseas combining with an interview with President Ono.

Four roots leading to FEPS now

FEPS was established in October 2012 by the consolidation of Asahi Electric Works Co., Ltd., Inoue Manufacturing Co., Ltd., Furukawa Power Components Inc., and the electric components business units of Furukawa Electric Co., Ltd. In the following year, the F-CO Products Division and Electric Feeder Division of Furukawa Electric Co., Ltd. also joined and the current structure to deal with the transmission and distribution has been established. Each company’s root goes back to long time ago and Inoue Manufacturing Co., Ltd. was established in 1919, the Taisho Era, mainly dealt with parts for underground power distribution. Asahi Electric Works Co., Ltd. engaged in overhead transmission business and Furukawa Power Components Inc. operated in overhead distribution business since 1960s.

In the middle of 1990s, a cycle of capital investment by domestic power companies was completed and became stabilized. In 2000s, business restructuring progressed in transmission lines, distribution lines and industrial electric lines, and FEPS, who has comprehensively dealt with parts for transmission and distribution, was established by consolidating 3 companies and 1 business having different roots.

Overseas development of snow damage countermeasures

Deploying technologies developed in Japan to the world

Currently, FEPS proactively promotes overseas development of products for snow damage countermeasures.

It received orders for “Loose Spacer” from American Electric Power Company, Inc. (AEP), a large power company in North America, and continues to develop the market.

When there is a strong wind against overhead transmission conductors with ice or snow accreted, a large amplitude vibration named galloping occurs and there is a risk of short circuit resulting in power outage, as conductors mutually touch. Particularly, “bundle conductor” is known to have higher occurrence of galloping. Therefore, FEPS, since the time of its preceding company, Asahi Electric Works Co., Ltd., continued research and development of countermeasure technology for construction with full-scale Mogami test lines in Yamagata Prefecture.

Over there, it is possible to make a demonstration test generating a galloping phenomenon in other seasons than winter by utilizing the local wind “Kiyokawa-dashi” and by attaching simulated snow/ice made of resin. Responding to requests from each of domestic power companies, FEPS developed countermeasures with the full-scale test lines, only one test lines available in Japan possessed by FEPS. As a result, FEPS developed Loose Spacers having a function to mitigate galloping vibration for bundle conductors aerodynamically. Since their first introduction in 1998, FEPS has sold around 200,000 units in Japan.

It contributed to suppressing galloping accident in each of snowfall areas and protecting transmission lines. The Loose Spacer is known as a representative product developed using Mogami test lines and a lot of overseas visitors come to see the test lines. In addition, FEPS published a paper summarizing research achievements



Two types of Loose Spacers used by AEP
Copyright © 2025 BOLD® Transmission, LLC. All rights reserved. Used with permission.

made so far at the CIGRE session held in Paris in 2022 jointly with the Central Research Institute of Electric Power Industry and Tokyo Electric Power Company Group, further attracting overseas attention.

On the other hand, for overseas development, it is necessary to make appropriate customization. Overhead transmission lines are subject to various types of vibration phenomenon due to the geography and the climate of each subject area in addition to galloping. Therefore, it is often the case that the way of thinking for such countermeasures and technical focus points are substantially different depending on countries or regions.

In order to address these needs, FEPS made contact with Politecnico di Milano in Italy, one of the world-leading research institutes for vibration phenomenon for overhead lines and obtained the state-of-the-art programs that can make a simulation for various types of conductor vibration developed by the institute and repeatedly made various analysis experiments using the programs. With this, FEPS has further enhanced its engineering so that it could make a reasonable new proposal exceeding customers’ expectations in addition to customization in line with the local situation. As a result of these approaches, AEP placed orders for Loose Spacers entirely for their 300 km overhead transmission line construction project with triple bundle conductors.

Moreover, in Kazakhstan, FEPS provided their own products named “Counterweight” and “Snow-resistant Ring” to “UranEnergo LLP”, a local transmission system operator, in cooperation with Sumitomo Corporation Power & Mobility Co., Ltd. Though it was an issue over there to respond to power outage or damage to facilities caused by heavy accretion of snow/ice on overhead lines till recently, it makes possible to prevent snow accretion on overhead lines from heavily developing by using the combination of two products that accelerates snow fall. In Kazakhstan, UranEnergo LLP currently continues to verify the effectiveness of the products under the local climate and the situation of overhead lines. Meanwhile, FEPS concludes a two-party memorandum with Sumitomo Corporation Power & Mobility Co., Ltd., and actively engaged in promoting snow damage countermeasure products throughout Central Asia.

Mr. Tomoki Kitashima, Chief Engineer of FEPS Business Division 1, says that it is very important in overseas markets, not only to supply countermeasure products, but also to comprehensively explain such points as at which position and with which installation method such products are installed including its peripheral technology and to propose solutions exceeding customers’ needs and expectations.

In fact, the Loose Spacer has been steadily expanding its market since the start of overseas sales in 2020 and the proportion for overseas markets in FY2024 reached 64%, substantially exceeding the proportion for the domestic market. FEPS continues to pursue product introductions conforming to each country and region and to contribute to stable power supply.



conductor with “Counterweight” and “Snow-resistant Ring”.

Interview with President Kazuya Ono

For further growth combining its unique technologies From vertical organization to horizontal organization

— President Ono resumed the current position 7 and a half years after its establishment.

“The business environment has changed, compared with the time of its establishment. Also, in 2012, remaining projects for domestic power systems decreased. Though there was a switch-over from overhead distribution to underground distribution following the decrease of utility poles, it would not contribute to increasing the total demand.”

“Initially, the sales were around 17 billion yen, and the operating profit was around 600 million yen. It was not big enough in the light of the company scale. Therefore, I internally declared such target as the sales of 20 billion yen and the operating profit of 2 billion yen after 10 years, which means I made target figures for which we needed new markets and new products.”

— Substantially changed the structure at the time of its establishment.

“Though we cover the entire transmission and distribution grid, our business operation at that time was done in each of vertical organizations at business divisions having succeeded preceding companies, and as a result, we lacked in horizontal coordination. Therefore, we try to move to new markets and new products by pursuing our unique technologies.”

“We did not have any employee who could explain all of FEPS’s technologies. I felt it would not be relevant, so I created an organization named Engineering Development Division directly reporting to President to identify main technologies.”

! Each of “9 unique technologies” is our company’s precious asset

— As a result, 9 unique technologies were identified.

“These 9 technologies are structured by clarifying what are FEPS’s back bones. No point of discussing which is superior or which is not, and all of them are our company’s precious assets.”

“In the past, we had approach things from a product-centric perspective. We can come up with ideas for synergy with transfer or combination by shifting our focus to our technologies.”

— Defined a corporate message.

“Furukawa Electric Co., Ltd. has adopted its group purpose, “Composing the core of a brighter world”. So, I adopted “FEPS+ connecting faster and wider” as our internal message leading to such group purpose. As there still exist remains of preceding companies even in other areas than unique technologies, I put my focus on internal newsletters to make our internal communication faster and wider.”

! Expanding products for overseas markets and new markets

— Basic technologies have contributed to overseas development.

“We have inquiries for products named “Loose Spacer” for wind and snow damage countermeasures from the North American market. It is our achievement after having considered what could be developed using vibration suppression technology, one of 9 unique technologies. Only FEPS manufactures Loose Spacer in Japan. Vibration suppression technology makes a base of such products. Few overseas companies have such technology. Though it is still an initial step, the overseas development is progressing in this manner.”

“We internally share and learn overseas business operations by viewing the video for construction. For example, differences in product usage and installation methods compared to Japan, etc. Observing these differences has been truly enlightening for us.”

— As the entire company as one team, develop new markets and new products.

“Sales personnel may come up with new ideas, thinking on technologies. Our customers may have knowledge or knowhow, so we are eager to listen to them on such subjects as problem solution for the next generation. For example, we proactively promote easily detachable connectors for data centers. We have overseas demand for products for data centers.”

“In future, I believe we can promote overseas development in various business fields. We will, of course, continue to promote businesses for domestic power companies, and I would like to proportionally increase our sales in new markets and overseas markets.”

Challenging the Future, Together

Innovation for Next

Our company is a comprehensive power equipment manufacturer that covers the entire spectrum of electricity supply, from transmission to distribution. To support everyday life as a matter of course, we have tackled and resolved various social issues. Moving forward, we will continue to contribute to a sustainable society by taking on new value creation challenges with our collective strength.

