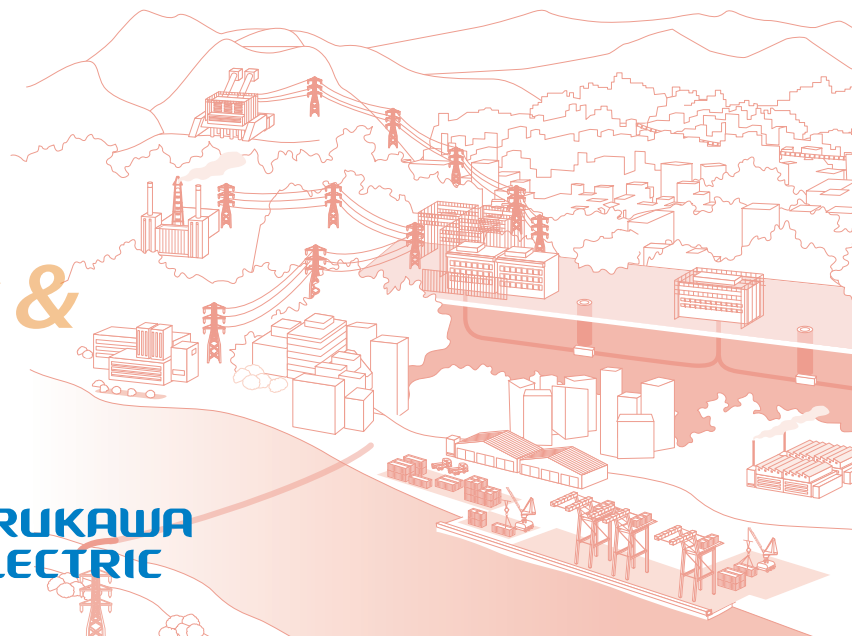


# Power Cable & Technology



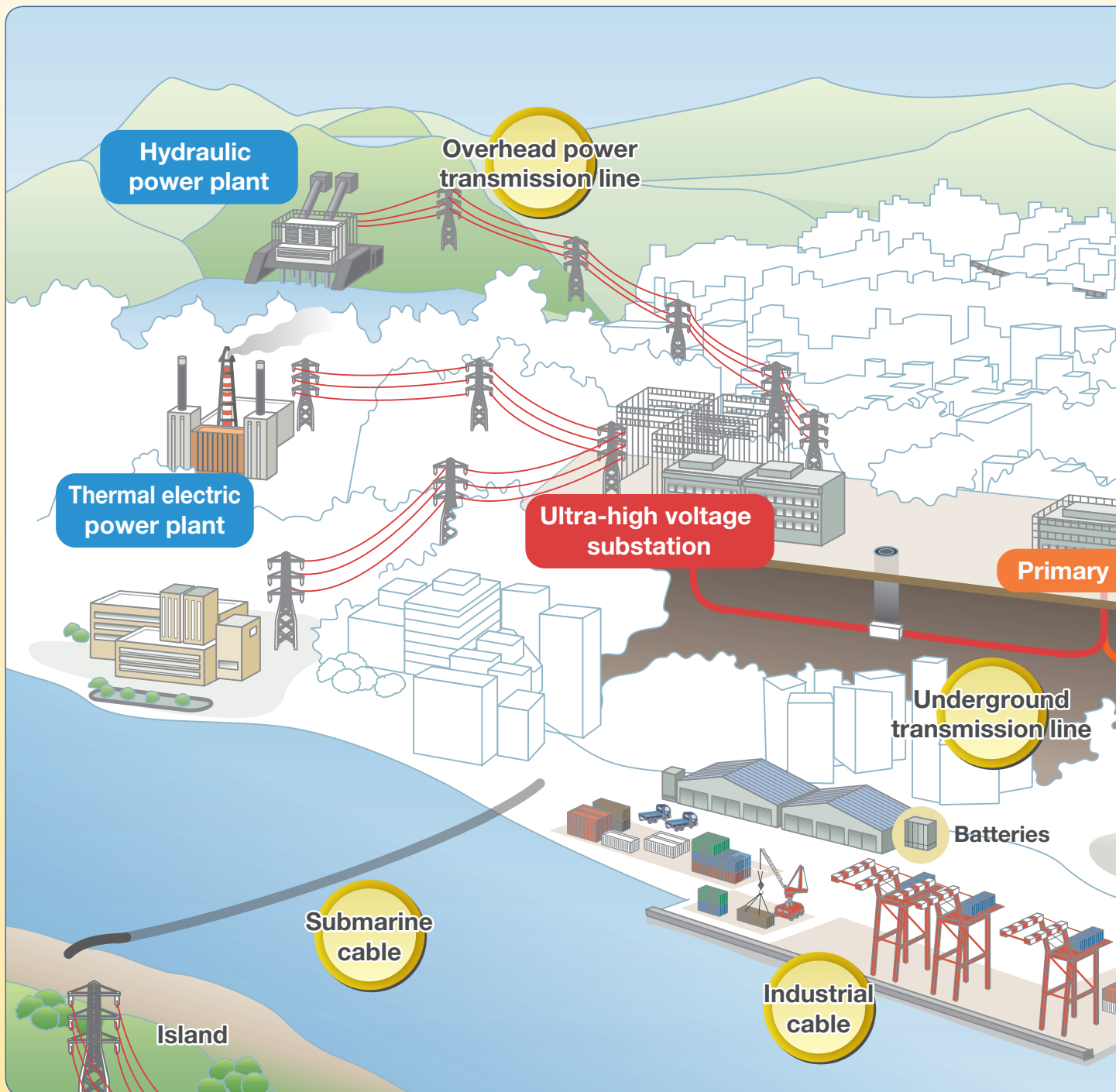
*More Efficiently &  
More Wisely*

# Contributing to the Creation of Electric

Furukawa Electric Group manufactures a comprehensive array of electric wires and cables to meet diverse market needs, including applications ranging from ultra-high voltage cables to low-voltage cables, as well as demands for power transmission and power distribution. The Group has earned an excellent reputation in Japan and across the world for its outstanding quality.

As demand for electric power increases, we are supporting the foundations of society and industry with our extensive technologies for reliable electric power transmission.

Schematic diagram of electric power transmission from power stations to the point

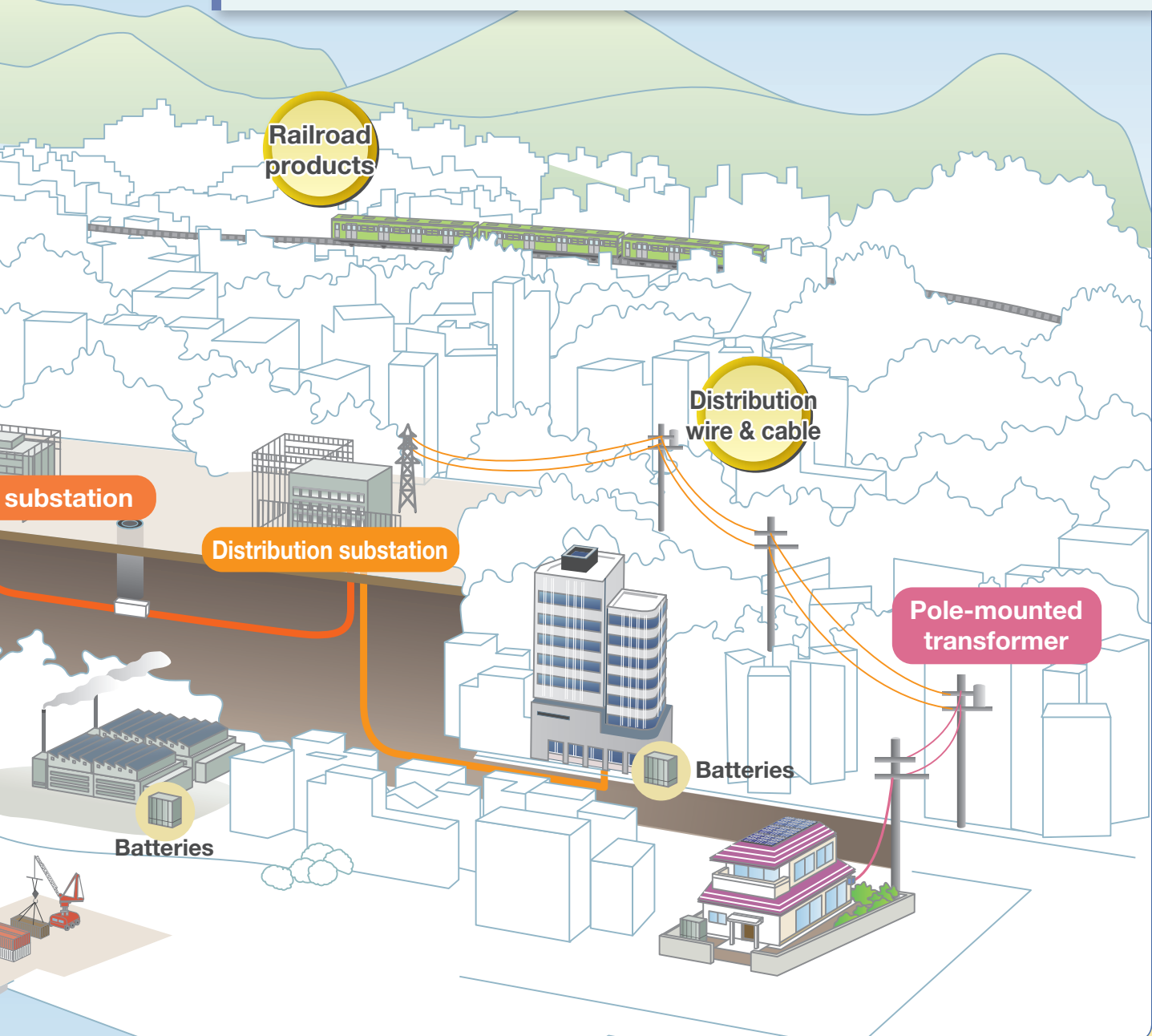


# Power Infrastructure Worldwide

## Business topics

- 1884 Opens Honjo Copper Smeltery and Yamada Cable Works
- 1920 Supplies the former Japan Electric Power Co. with Japan's first ACSR
- 1969 Supplies Chugoku Electric Power Co. with Japan's largest submarine cable (jointless, 3,000 m, transmission capacity: 50,000 kVA, 110 kV, 3-core OF cable), used on Chigiri Island
- 1974 Establishes Furukawa Industrial S.A. Produtos Eletricos (FISA)
- 1974 Becomes the world's first company to commercialize optical fiber cables
- 1978 Supplies Electric Power Development Co. with Japan's first long-distance DC OF submarine cable, used for DC interconnection system between Hokkaido and Honshu
- 1997 Operations commence at a company manufacturing high-voltage XLPE power cable in China  
Shenyang Furukawa Cable Company Ltd. (SFC)
- 1998 Supplies superconductive wire materials to CERN'S Large Hadron Collider project
- 2001 Takes over the optical fiber solution business of Lucent Technologies
- 2002 Establishes an affiliate specializing in optical fiber composite overhead ground wire (OPGW) in Jiangsu, China  
Suzhou Furukawa Power Optic Cable Co., Ltd. (SFPOC)
- 2005 Completes field tests of the world's longest, 500 m high-temperature superconductive power cable
- 2010 Furukawa Electric Industrial Cable establishes industrial rubber cable joint venture in China  
Huatong Furukawa (Tangshan) Cable Co., Ltd. (HFC)

of demand



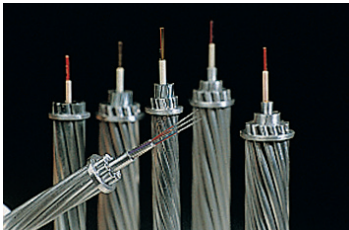


# For Power Line & Distribution Line

## Overhead power transmission lines



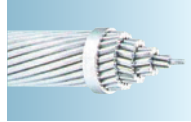
The needs that electric power companies have with respect to overhead power transmission lines change year by year, creating requirements for new products with added functions such as superior reliability and eco-friendly performance. Furukawa Electric Group offers an extensive lineup of power transmission cables and accessories that respond to these needs.



**Optical ground wire (OPGW)**  
A cable that combines an optical ground wire with a high-capacity communication wire.



**Thermo-resistant aluminum alloy wire**



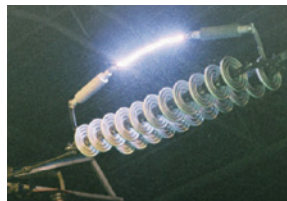
**Aluminum cable steel reinforced (ACSR) transmission wire**



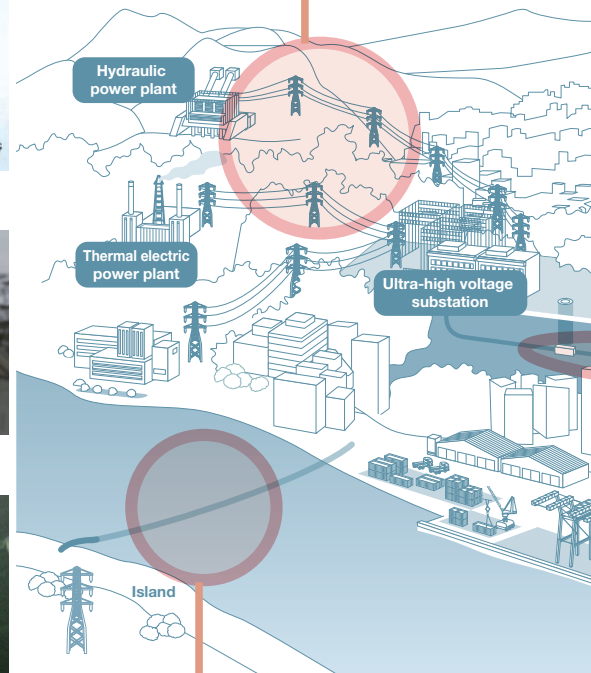
**Phase-to-phase spacer**



**Loose spacer damper**



**Surge-resistant (SR) arcing horn**



## Submarine cables



**Left: 66 kV cross-linked polyethylene (XLPE) insulated submarine cable**

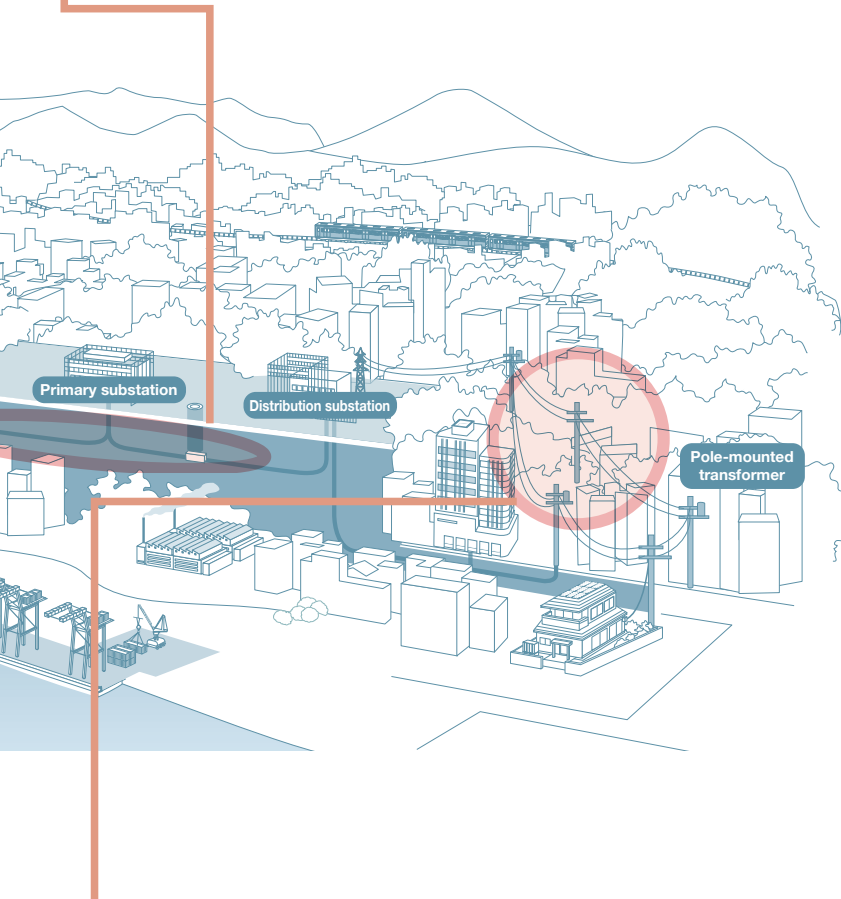


**Right: 500 kV oil filled (OF) submarine cable**

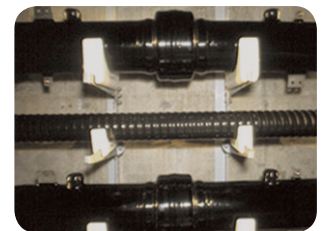
Globalization prevails throughout the world, and the transmission line business is no exception. Submarine cables are needed for long-distance power transmission from regions or countries where electric power is generated efficiently at low cost to other regions or countries where there is demand for electric power. The cables are also used for power transmission to isolated islands where obsolete power generating facilities are used, or in flexible electric power accommodation programs between cooperating countries. Recently, submarine cables have found application in the transmission of electric power generated in offshore wind power stations, which is drawing attention as a form of recyclable energy. Furukawa Electric Group supplies submarine cables to countries around the world, helping them to develop their electric power transmission capacity.

## Underground transmission lines

Furukawa Electric Group has been contributing to the development of underground power transmission networks in the world. The company played an important role in the world's first 500 kV transmission project, and its technical capabilities have earned high marks from in Japan and overseas.



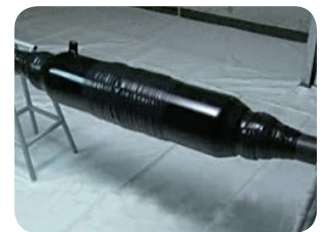
275 kV cross-linked polyethylene insulated, aluminum sheathed, PVC outer sheathed cable



275 kV cross-linked polyethylene (XLPE) cable joint



66 kV power cable



Cold shrinkable joint (CSJ)

## Distribution wire & cable



Focusing on the supply of overhead power distribution lines and underground power distribution cables, Furukawa Electric Group is contributing to the construction of power distribution networks for the reliable supply of electricity to demand centers. We manufacture and deliver a broad range of power distribution cables tailored to different installation conditions, satisfying the diverse needs of our customers.



Low wind-pressure cable (enhanced resistance against wind pressure)



Water-impervious cable

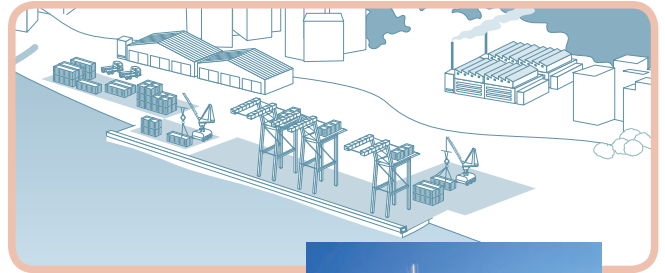


# For Industrial Machinery & Transportation

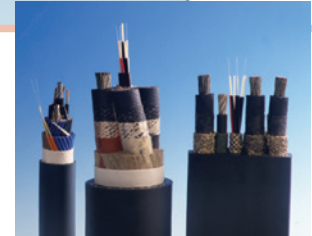
## Industrial cables



Cabtire cables for power supply and the control of heavy machinery must feature high reliability and the ability to withstand severe mechanical loading. Furukawa Electric Group has been supplying these cables for 30 years, since it developed and found practical application for cabtire cable TraCab. We have been particularly successful in pioneering the use of a fiber-optic composite cabtire cable.



Cabtire cables for cargo cranes



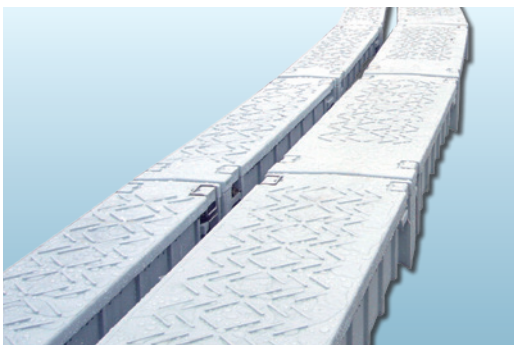
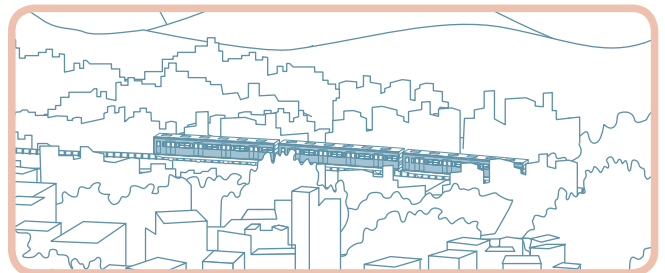
Optical fiber composite cabtire cables



Cabtire cables for mine excavation

## Railroad products

Furukawa Electric Group offers a range of products for the construction of railroad infrastructure. As well as electric wires, our lineup includes a broad array of railroad products such as cable troughs and rail bonds.



**GREEN TROUGH**

A cable trough using recycled plastics, weighing only a quarter that of concrete trough and featuring superior ease of installation.



Various railroad cables



Electric wires for railroad cars



Coupling cable



Copper exothermic welding bond

# Smart Grid System & Other Products

## Smart grid system

Furukawa Electric Group provides a wide variety of solutions such as trunk line cables (e.g., power trunk line and communication trunk line), equipment (e.g., power and communication), superconductive application products and storage to create a smart grid.

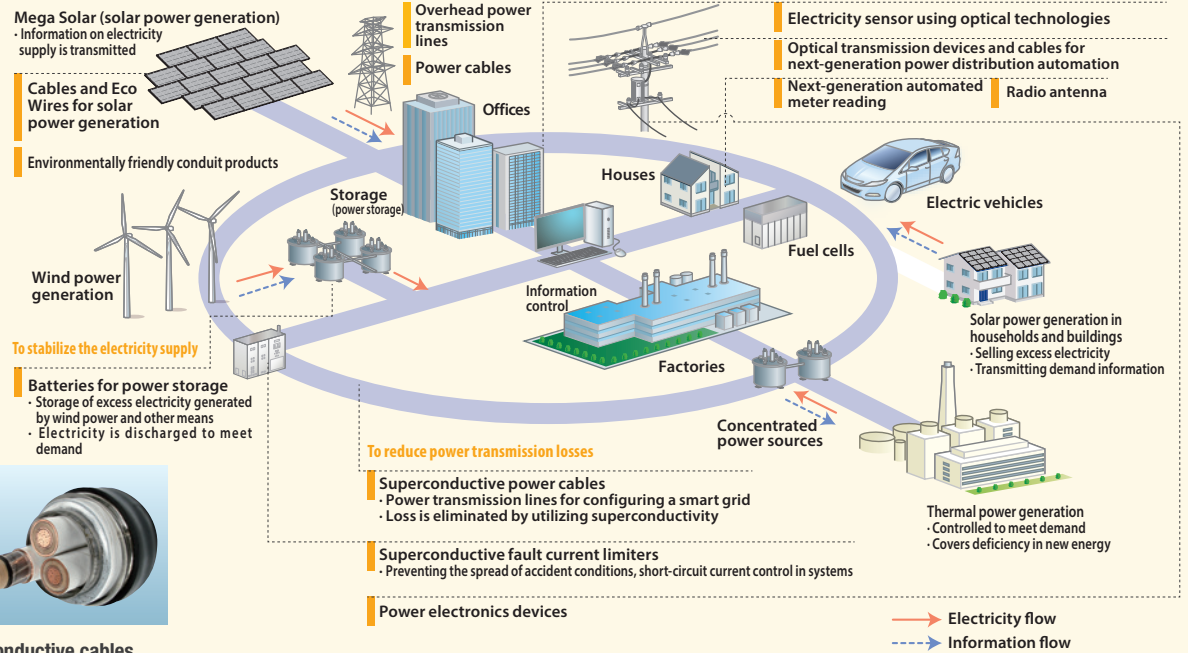


Cables for solar power generation



Cables for wind power generation

### Products and technologies that the Furukawa Electric Group can offer for energy and smart grid



Superconductive cables

## Other products

Furukawa Electric Group also develops many other products to meet customer needs, including environmentally friendly wires and jointing materials.



### Tapes for electrical applications

Every type of Furukawa Electric tape is a high-quality tape manufactured utilizing the long years of electric insulation technology.



### Corrosion prevention materials

WRAPCO Tube is a heat-shrinkable cross-linked polyethylene tube coated with a special adhesive having a high anti-corrosive effect.



### ECO electric wires

These cables use a sheathing material that contains no environmentally harmful materials. The cables contain no halogens and so are RoHS compliant.



### Jointing materials

This is a jointing kit of the resin injection type, enabling quick and simple jointing work.



### F-TouchCover

This kit enables simple and reliable insulation/protection work, using no tapes, for the joints and branches of low-voltage electric wires.



## Other relevant products

### Underground cable protecting pipes



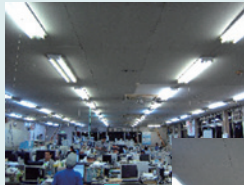
Corrugated hard polyethylene pipe for labor and cost savings in underground cable installation.

### Storage and batteries



Valve regulated lead acid batteries made with advanced manufacturing technology offer long life, superior performance and easy maintenance.

### High-efficiency optical reflective sheet



MCPET is not used



MCPET is used

With superior light reflectivity exceeding 99% in total reflectivity, this sheet reduces the number of fluorescent lamps and enhances illuminance.

### TV camera cable system



Optical Fiber composite cables for high-definition TV systems developed by Furukawa Electric enjoy a strong reputation for their quality, and are used internationally in major events such as the Olympic Games and the FIFA World Cup.

## FURUKAWA ELECTRIC CO., LTD. <http://www.furukawa.co.jp/english/>

### HEAD OFFICE

Marunouchi Nakadori Bldg., 2-3, Marunouchi 2-chome, Chiyoda-ku, Tokyo 100-8322, Japan  
Tel. +81-3-3286-2483 Fax. +81-3-3286-4942

### AMERICAN FURUKAWA, INC. (AFI)

47677 Galleon Drive, Plymouth, MI 48170 U.S.A.  
Tel. +1-734-446-2200 Fax. +1-734-446-2260

### FURUKAWA ELECTRIC EUROPE LTD. (FEEL)

Furukawa House 77-85 Fulham Palace Road London  
W6 8JD, U.K.  
Tel. +44-20-7313-5300 Fax. +44-20-7313-5310

### FURUKAWA ELECTRIC SINGAPORE PTE. LTD. (FES)

60 Albert Street, #13-10 OG Albert Complex, Singapore  
189969  
Tel. +65-6224-4686 Fax: +65-6336-2635

### FURUKAWA SHANGHAI LTD. (FSL)

Room 1006, Hongyi Plaza, 288 Jiujiang Road, Shanghai  
200001, P. R. China  
Tel. +86-21-3366-5301 Fax. +86-21-3366-5315

### FURUKAWA ELECTRIC HONG KONG LTD. (FEHK)

Suite 1810, 18/F, Tower 2, 33 Canton Road,  
China Hong Kong City, Tsim Sha Tsui, Kowloon,  
Hong Kong  
Tel. +852-2512-8938 Fax. +852-2512-9717

### FURUKAWA (THAILAND) CO., LTD (FTC)

No.191 Silom Complex Building 16th Floor, Units 4,C  
Silom Road, Kwaeng Silom, Khet Bangrak, Bangkok 10500  
Tel. +66-2-632-1079 Fax. +66-2-632-1080

### P.T. FURUKAWA ELECTRIC INDONESIA

Tahun 2010 Sucaco Building, 6th Floor Jl. Kebon Sirih  
No.71, Jakarta-10340  
Tel. +62-21-3190-6212 Fax. +62-21-3190-6407

### FURUKAWA

### Furukawa Industrial S.A. Produtos Eletricos (FISA)

Rua Hasdrubal Bellegard, 820 Cidade Industrial Curitiba  
Cep 81460-120, Curitiba, P.R. Brazil  
Tel. +55-41-3341-4000 Fax. +55-41-3341-4141  
Sales Division: São Paulo  
Tel. +55-11-5501-5800 e-mail cmo@furukawa.com.br

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