

# FURUKAWA ELECTRIC

Furukawa Electric Co., Ltd.

Keiichi Kobayashi, President & CEO

December 8, 2021

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Contribute through the existing businesses**
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Advance into new business domains**

Furukawa Electric will come together as a group to become a

# company that is essential for achieving the SDGs

Quickly grasp the issues faced by society & customers



Core technologies x technological innovation



Co-creation with partners

Social issues that involve Furukawa Electric Group, and SDGs that the group can contribute to achieving by 2030



Realize a carbon-free society



Advances in 5G/B5G\*  
Increased communications traffic



Town planning for mitigating disasters



Realize a resource recycling-based society



Accelerating CASE\* (EV) in automobiles



Regional revitalization & stimulate the rural economy



Realize a tougher infrastructure



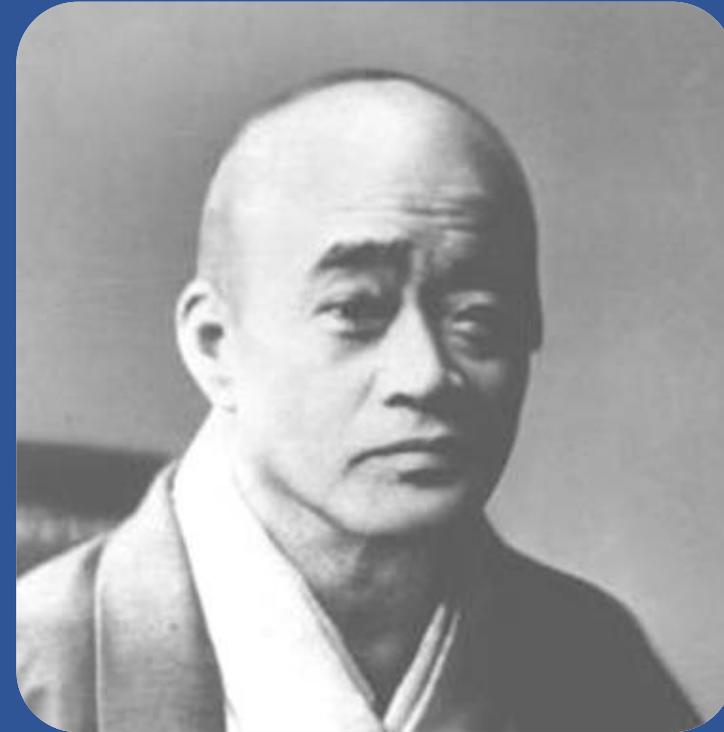
Create resilient mobility infrastructure



\* B5G : Beyond 5G

\* CASE : Connected, Autonomous, Shared & Services, Electric

Ichibei Furukawa,  
the founder of  
Furukawa Group  
**“Brighten Japan”**



Value employees,  
Value customers,  
Value new technology, and  
Contribute to society



# Furukawa Electric Group History

1884

2021

Founded as a manufacturer of copper & copper alloy products and electric power cable

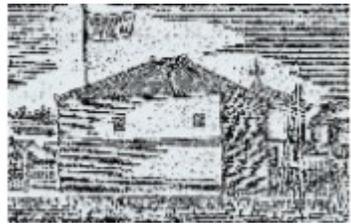
Creating social infrastructure in Japan and the world

New social issues

Advances in infrastructure and mobility / Carbon-free

## Furukawa Electric Group Vision 2030

In order to build a sustainable world and make people's life safe, peaceful and rewarding, Furukawa Electric Group will create solutions for the new generation of global infrastructure combining information, energy and mobility.



Honjo Copper Smeltery (Honjo, Tokyo)

Yamada Cable Works (Takashima-cho, Yokohama)



Manufactured the first submarine power cable in Japan



Installed an antenna and feed line in the Tokyo Tower



First in the world to successfully field test optical fiber cable

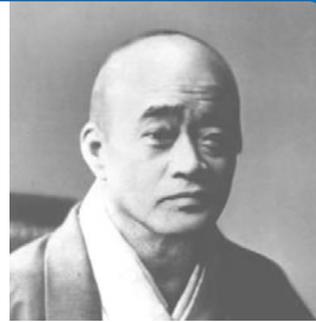


Contributed to advances in high volume communications through wavelength multiplexing technology (mass production of a 1480nm laser light source)



## Founder's thoughts

Value **employees**,  
Value **customers**,  
Value **new technology**, and  
Contribute to society



## Sustainable Development Goals (SDGs)



Continue to be a  
**company that is essential**  
for achieving the SDGs



**1. Mission of Furukawa Electric Group –  
Contribute through the existing businesses**

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FY2021 business outlook

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Advance into new business domains**

# Mission of Furukawa Electric Group

Can feel the beauty  
of each season



Work is enjoyable

Connected to the  
world from home



Growing old is a  
pleasure

How should society be in 10 or 20 years?

Can travel  
anywhere safely  
and comfortably



Healthy  
lifestyles



Safe, good  
tasting food



For the earth and  
future generations...

# Mission of Furukawa Electric Group

Lifestyles that were unimaginable 20 years ago will continue to evolve



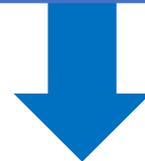
Want to have a stable network and the ability to work even from areas surrounded by nature



Want to receive advanced medical care without going to a hospital



Want to view video more easily



Social issues that involve Furukawa Electric Group

**Responding to increased telecommunications traffic**

- Advances in 5G/B5G
- Increased telecommunications traffic



This is the issue Furukawa Electric Group wants to solve!

**Stable connection with or without a landline!**  
**Faster, higher efficiency, more reliable, as well as smaller and lower power consumption.**

In addition to building high speed, large volume, low latency telecommunications networks, Furukawa Electric Group wants to solve other issues such as expanding data center capacity and increasing power consumption efficiency!

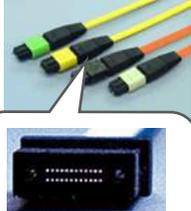


### Communications Solutions

#### Optical fiber and cable (Optical cabling solutions)



Rollable ribbon cable



Connection cross section



- Optical fiber fusion splicer
- multicore cable connectors

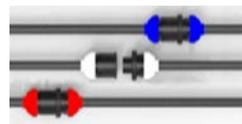


#### Optical devices

Digital coherent communication light sources

### Energy Infrastructure

Used at data centers:  
**Cable and connectors**



Used at data centers:  
**Heat dissipation sheets**



### Functional Products

Used at data centers:



**Aluminum blanks for HDD**

Used at data centers:



**Thermal management products**

Used in the semiconductor wafer process:



**Tape for semiconductor process**

Used in telecommunications devices such as servers and routers:



**Electrolytic copper foil for printed wiring boards**

### Electronics Component Materials

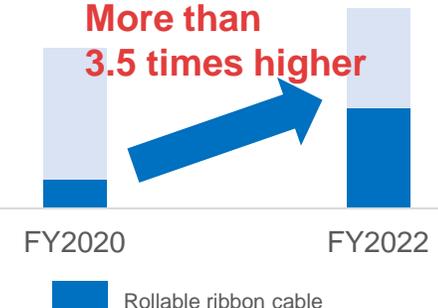
**Copper stripes for power semiconductors and submarine optical fiber cable**

Oxygen-free copper stripes (GOFC)



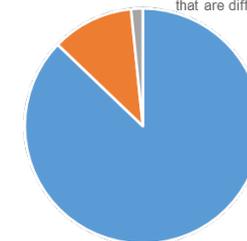
### North America optical cable sales forecast

**More than 3.5 times higher**



Sales (estimate)\*  
 (FY20: About JPY 180 billion)

\* Excluding sales of some products that are difficult to categorize



■ Communications Solutions  
 ■ Functional Products  
 ■ Other

# Mission of Furukawa Electric Group

Leave behind a world that is still beautiful 50 years from now



Want to leave a rich natural environment for future generations



Increased use of vehicles that do not emit greenhouse gas



Want to value plants, animals and people

Social issues that involve Furukawa Electric Group

**Prevent global warming**

Realize a carbon-free society



# Mission of Furukawa Electric Group

## Directed at the realization of a carbon-free society

### Basic outlook regarding carbon neutral

- 1 Eliminate or reduce direct CO<sub>2</sub> emissions
- 2 Eliminate or reduce CO<sub>2</sub> emissions by customers and society
- 3 Capture or transform the CO<sub>2</sub> that is emitted

Renewable energy  
ratio 10.3%\*

### Furukawa Electric Group Environmental Vision 2050

(established in March 2021)

Through the provision of environmentally friendly products and services and recycling-based production activities, contribute to the realization of a sustainable society throughout the value chain



#### Contribute to realizing a carbon-free society

Aim to reduce greenhouse gas emissions throughout the value chain (Greenhouse gas emissions from business activities (Scope 1 & 2): Challenge target of zero emissions in 2050)



#### Contribute to realizing a recycling-based society for water & resources

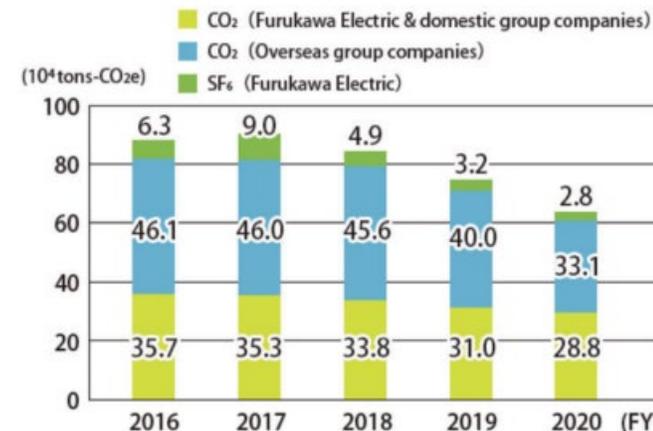
Minimize water usage, and promote the use of recycled materials, including waste plastic, throughout the value chain



#### Contribute to society in harmony with nature

Minimize the impact on ecosystems through value chain management that includes raw materials

### <Change in GHG emissions>



\*Target of aggregation: Furukawa Electric + 30 Japan group companies + 58 overseas group companies

This is the issue Furukawa Electric Group wants to solve!

## Delivering clean electric power that does not emit CO<sub>2</sub>!

Directed at achieving carbon neutral in 2050, the installation of mainly offshore wind power will expand in Japan based on the policy for maximizing installation of renewable energy. Many of the products manufactured by Furukawa Electric Group are being actively used in growth markets such as solar power.



### Energy Infrastructure



#### Power cable

- Extra-high voltage and high voltage underground power cable, components and installation
- Submarine power cable and installation

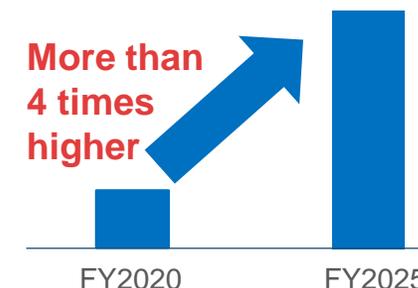


Used in solar power modules:  
**Various cables**



Used at solar power stations:  
**Aluminum conductor cable**

Sales forecast of submarine power cable for renewable energy in Japan



### Functional Products

Used at solar power stations:  
**Green troughs**



Used in solar power inverters, etc.:  
**Thermal management products**



### Electronics Component Materials

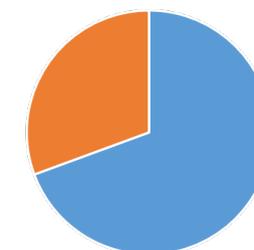
**Copper strips for cable**



For screen printing of electrodes for solar power panels:  
**Ultra-thin SUS wire**



Sales (Estimate)\*  
(FY2020: About JPY 10 billion)

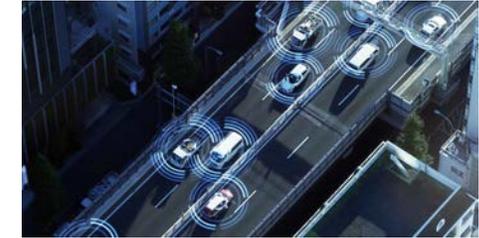


■ Energy Infrastructure ■ Functional Products, etc.

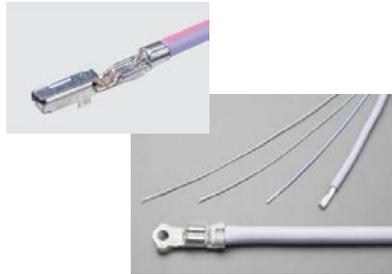
This is the issue Furukawa Electric Group wants to solve!

## Realize a society with green mobility!

Contribute to reducing CO<sub>2</sub> emissions through vehicle electrification, lighter vehicle weight and energy management. The capability spanning from materials through development is one of the group's strengths.



### Automotive Products



Aluminum harnesses  
Corrosion-proof ( $\alpha$ ) terminal



Battery state sensor (BSS)



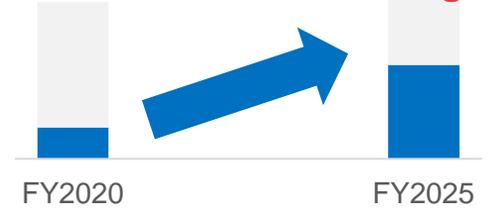
High voltage harnesses  
High voltage products



Products using flat cable (SDH/LSH)

### Sales forecast of wire harnesses

More than 2.5 times higher

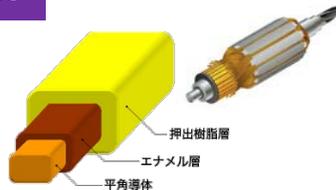


Aluminum wire harnesses

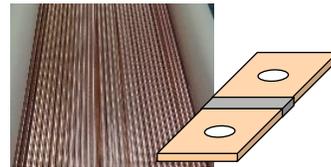
### Electronics Component Materials



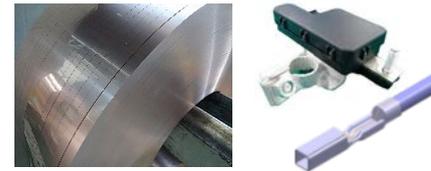
Conductor substrate for wire harnesses (copper, aluminum)



Oxygen-free copper for electric motors



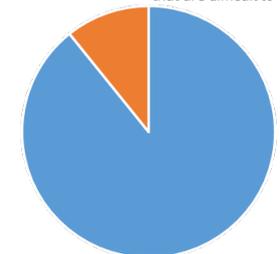
Resistor material for shunt resistance



Sn plated strips for BSS terminal/corrosion-proof ( $\alpha$ ) terminal

Sales (Estimate)\*  
(FY2020: About JPY 250 billion)

\* Excluding sales of some products that are difficult to categorize



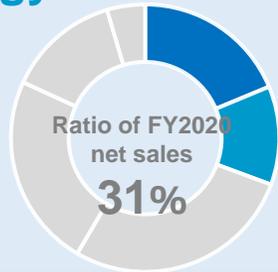
Automotive Products & Batteries  
Electronics Component Materials, etc.

# Mission of Furukawa Electric Group

Current businesses working based on this mission

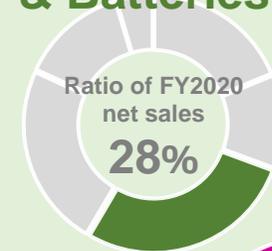
Deliver information / data & energy

- Communications Solutions
- Energy Infrastructure



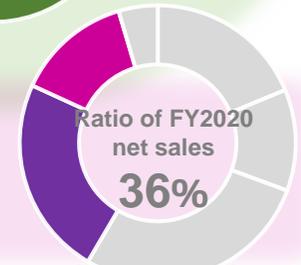
Safe vehicles that are also environmentally friendly

Automotive Products & Batteries



High performance products that support infrastructure, automobiles, semiconductors and data centers

- Electronics Component Materials
- Functional Products



Core technologies

Metals

Polymers

Photonics

High frequency

Intellectual property

DX

1. Mission of Furukawa Electric Group –  
Contribute through the existing businesses

2. Directed at increasing corporate value

**FY2021 business outlook**

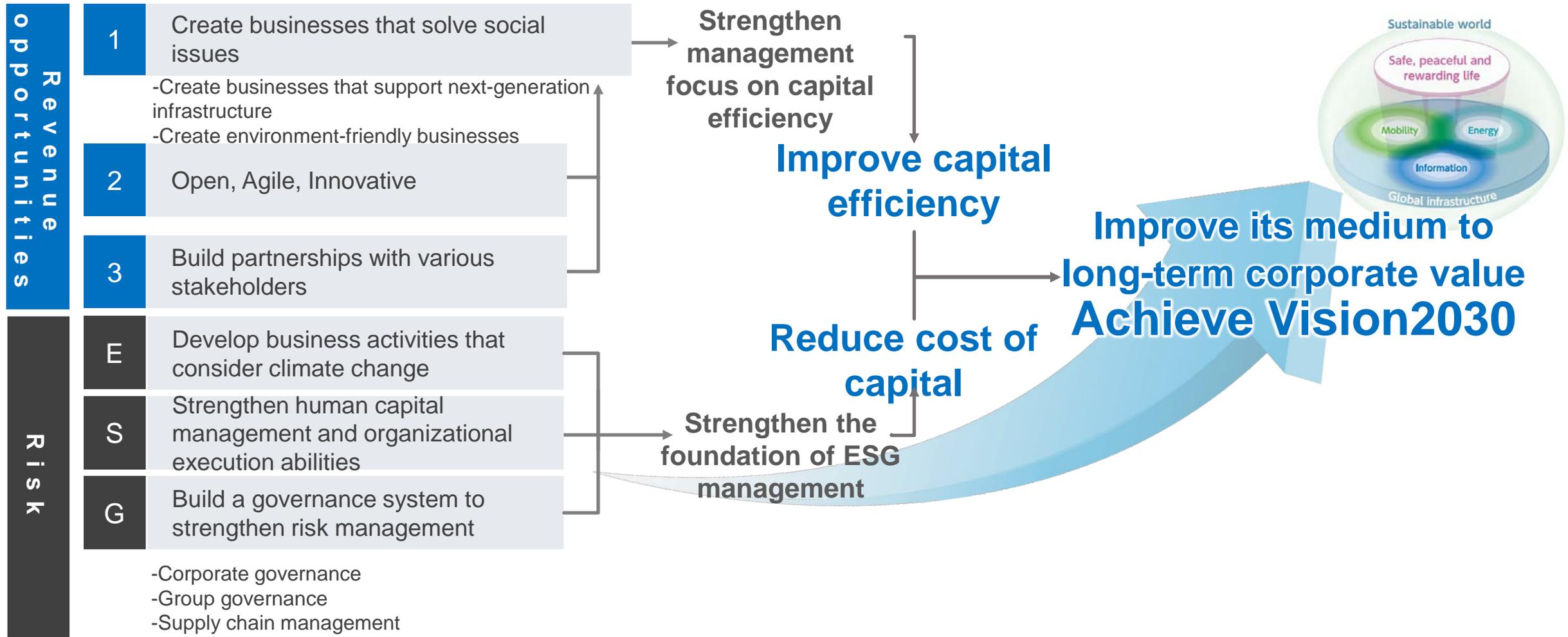
**Shareholder returns in FY2021**

3. Mission of Furukawa Electric Group –  
Advance into new business domains

# Directed at increasing corporate value

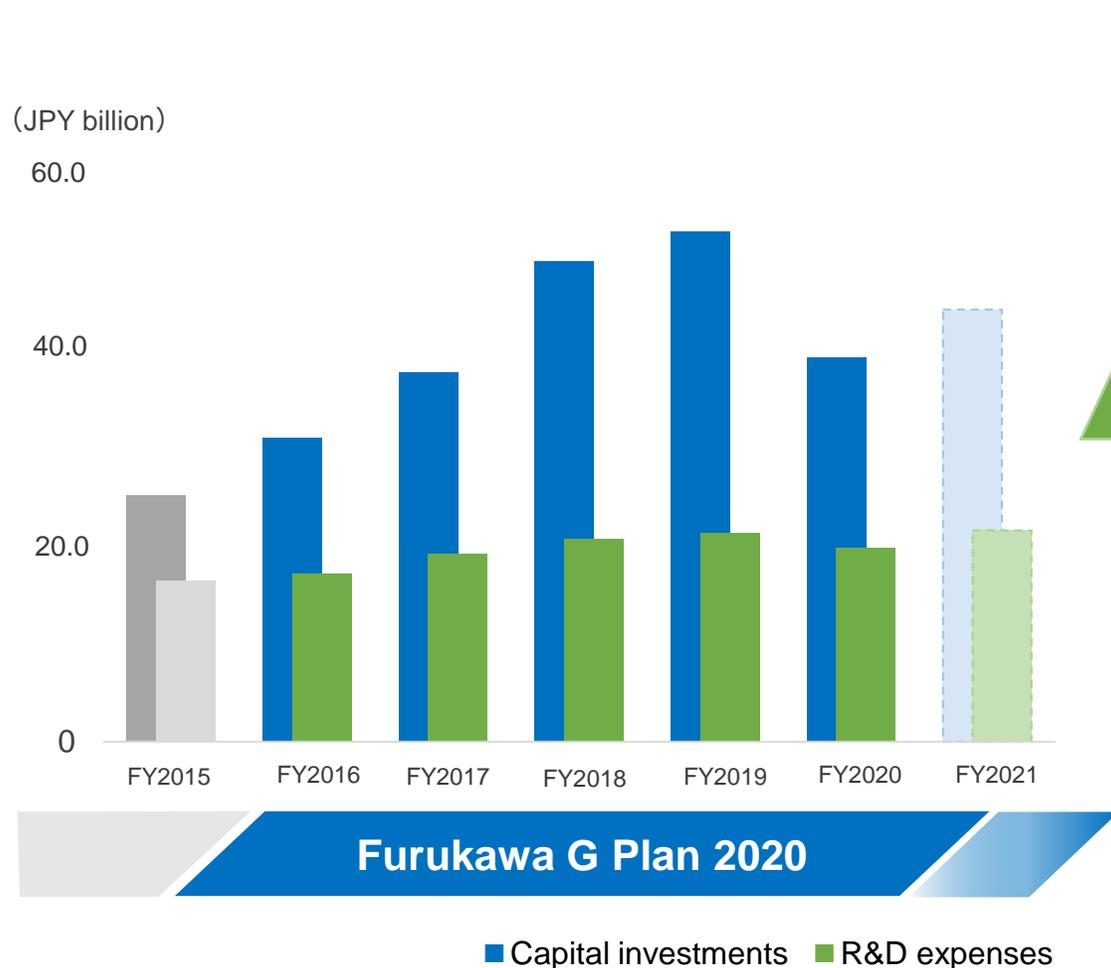
Improve its medium to long-term corporate value from both sides of **improving capital efficiency** and **reducing cost of capital**

Relationship between medium to long-term corporate value and materiality of revenue opportunities / risks



# Directed at increasing corporate value

From FY2016, focusing on capital investments and R&D directed at achieving Vision 2030



Capital investments  
JPY 213.3 billion\*  
(Average of JPY 42.7 bil./year)

\* FY2016-FY2020 cumulative total

R&D expenses JPY 100.0 billion\*  
(Average of JPY 20.0 bil./year)

\* FY2016-FY2020 cumulative total

- Optical fiber & cable
- Power cable
- Aluminum wire harness

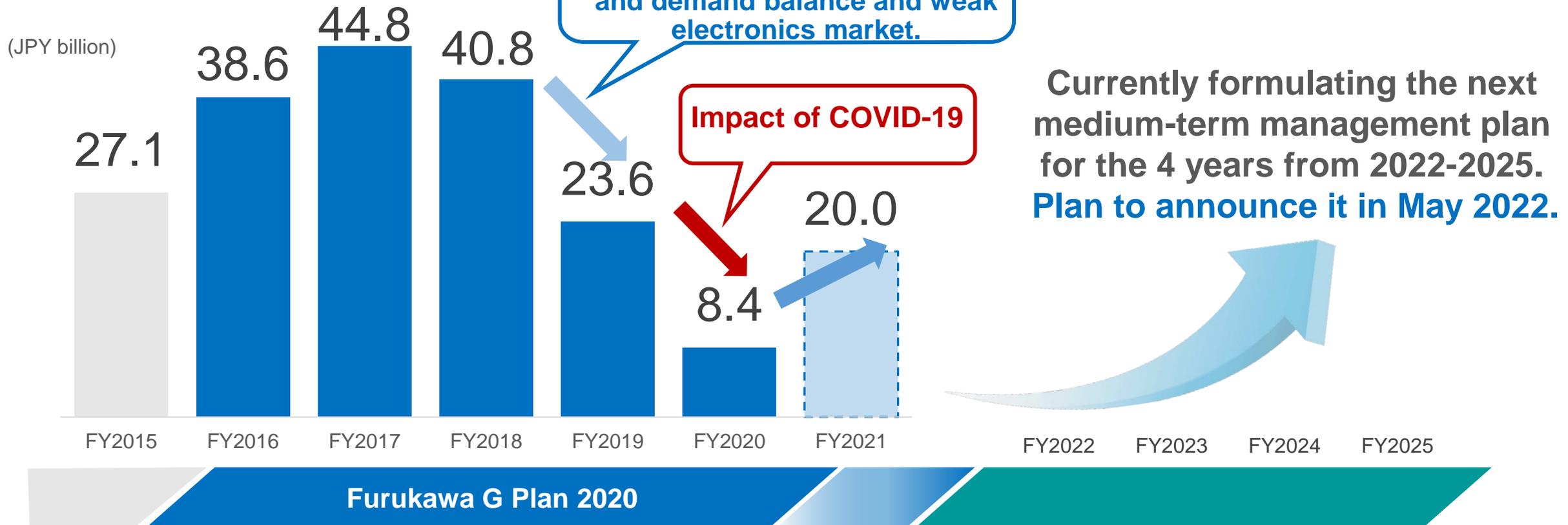
- Co-creation with partners through open innovation
- Utilize the core technologies in new business domains



# FY2021 business outlook

In FY2021, the Infrastructure, Electronics & Automotive Systems and Functional Products segments will recover with increased profit on higher revenue. Expect continued profit growth from FY2022.

## Operating income



# FY2021 business outlook

Increased profitability in the power cable business and copper & high performance material products business

## Energy Infrastructure <Power cable>

- Narrow down the priority segments, and focus on specific domains
- Increase cable manufacturing and installation capacity



Submarine power cable manufacturing facility (Chiba Works)



Installation skill training

 **Work together with customers to address the shrinking labor force**

For example...

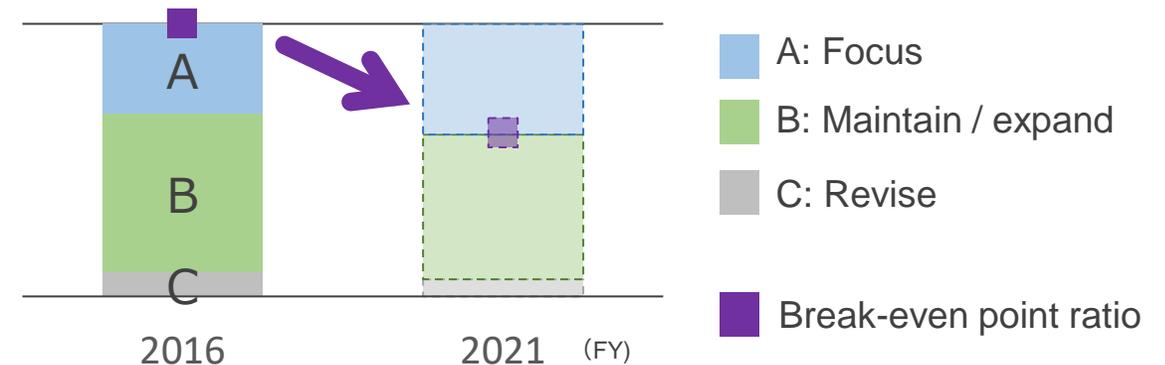
Partner with customers to strengthen engineering services



## Electronics Component Materials <Copper & high performance material products>

### ■ Improve the product mix

Revise the product profit structure and improve the break-even point ratio



 **Contribute to energy saving through power semiconductors**

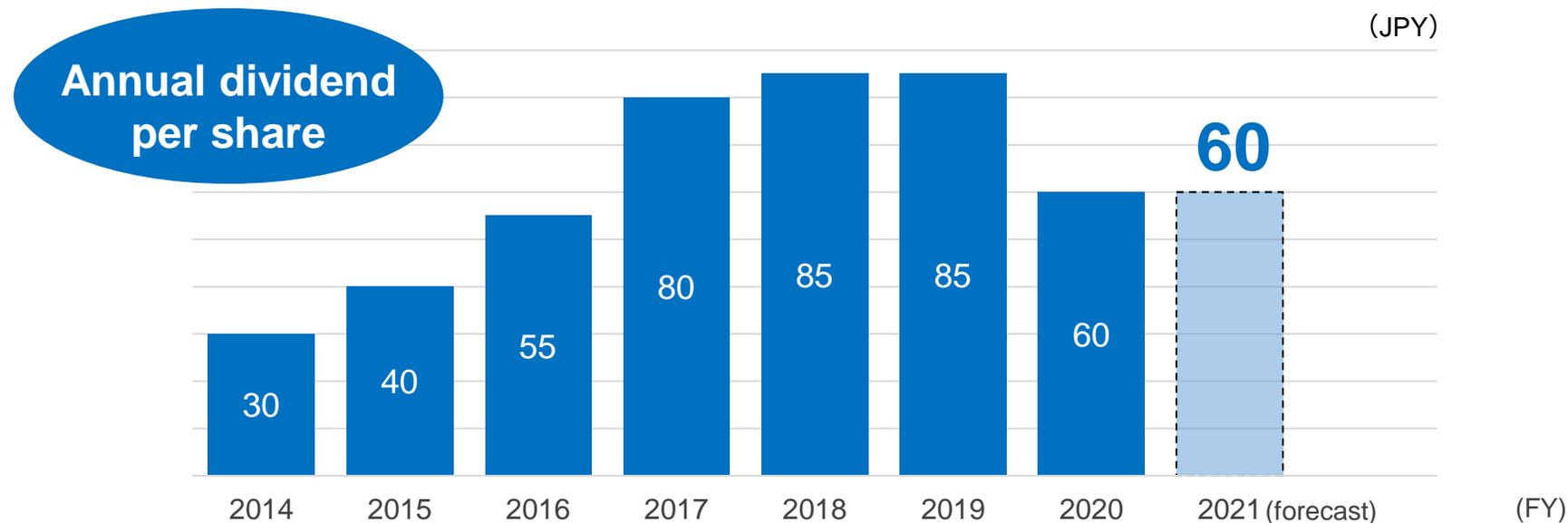
For example...

Materials that solve the heat-related problems involving power semiconductors, which are used to control high voltages and large currents



## ■ Shareholder returns FY2021 dividend forecast: JPY **60**

Furukawa Electric is aiming to manage the group with a focus on capital efficiency and has set forth the basic policy of achieving a balance between strategic growth investments, fostering next generation new businesses, improving the financial position and providing shareholder returns. Continuing to provide a stable income while taking into consideration the financial position and business results has been designated one of the top priority management issues, and this year, it is **planned to issue a dividend of JPY 60 per share.**



※Due to the 1-for-10 reverse stock split conducted on October 1, 2016, the dividends for FY2014 and FY2015 shown here have been increased 10-fold to make them comparable with the dividends following the reverse stock split.

1. **Mission of Furukawa Electric Group –  
Contribute through the existing businesses**

2. **Directed at increasing corporate value**

**FY2021 business outlook**

**Shareholder returns in FY2021**

3. **Mission of Furukawa Electric Group –  
Advance into new business domains**

Shrinking labor force & Aging society



### Increase convenience for both medical practitioners and patients

## Life sciences

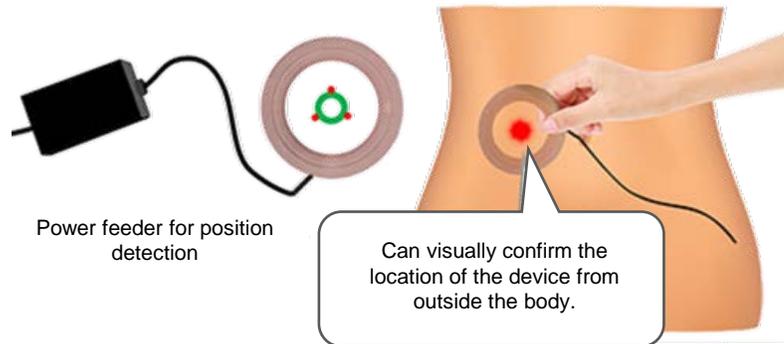


## Photonics

Photonics technology for manipulating light beams less than 1/100mm in diameter will contribute to smaller sizes, higher efficiency and increased reliability in the life sciences domain.

### Find using light

Medical device for internal detection



Detection solutions using an internal medical device

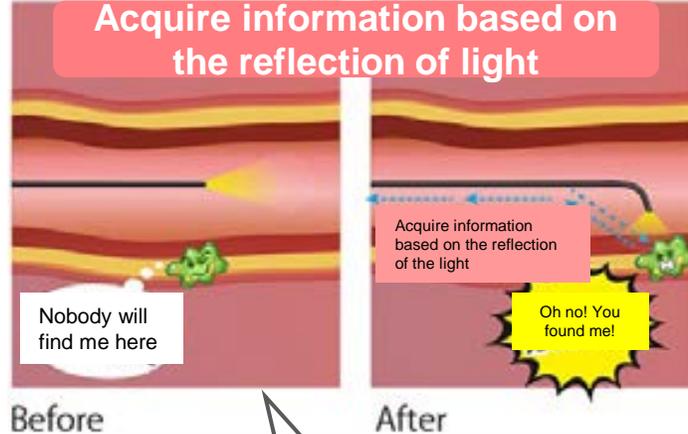
### Confirm the location without physical contact

Moving the external coil overtop of the device causes it to light up.

<https://www.furukawa.co.jp/tellumino/>

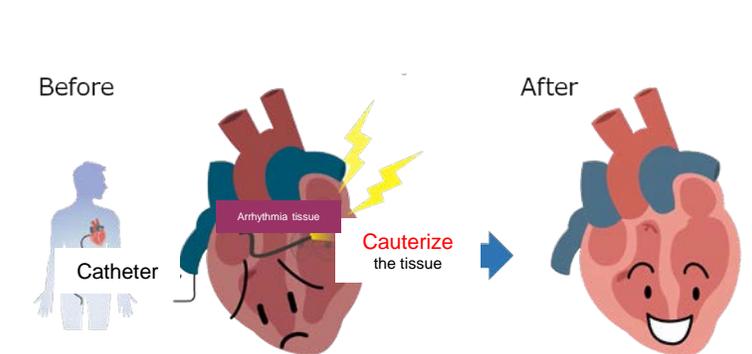
### Measure using light OCT

(optical coherence tomography)



### Cauterize using light

Ablation treatment



### Accelerate the creation of new business fields within life sciences

~ Concluded a joint development agreement with Atonarp Inc., developer of an advanced optical measurement platform ~

[https://www.furukawa.co.jp/release/2021/kei\\_20210524.html](https://www.furukawa.co.jp/release/2021/kei_20210524.html)

Shrinking labor force & Aging society

### Make social infrastructure maintenance and management easier

- Utilize the independently developed image analysis technology to maintain and manage roadside fixtures such as road signs and lights.
- Looking for opportunities to further expand the applications, such as for railroads.

## Infrastructure management



## DX

Maintenance and management solutions for roadside fixtures

### Michi-ten Series

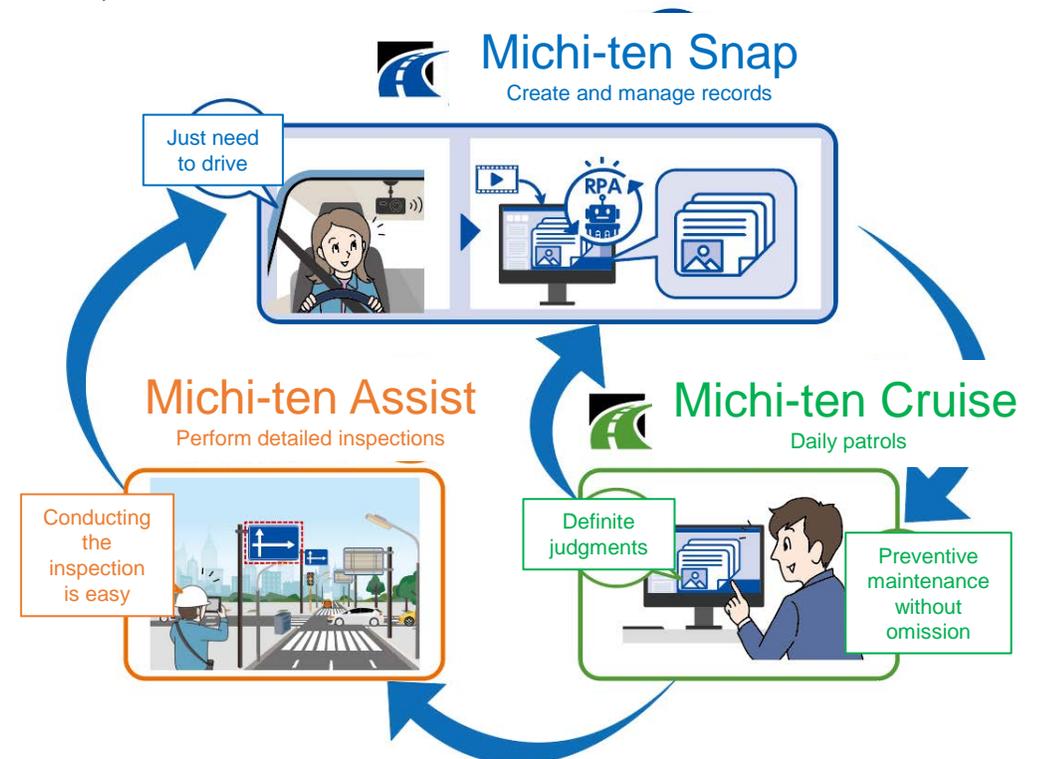
西山駅 Michi-ten Series 北九州市役所

Faster, Less Expensive, More Accurate

Use DX to realize a more efficient maintenance cycle for roadside fixtures!

Michi-ten characters: Mi-chan & Ten-chan

<https://www.furukawa.co.jp/infra-maintenance/>



## Social issues involving Furukawa Electric Group

Prevent global warming

Responding to increased telecommunications traffic

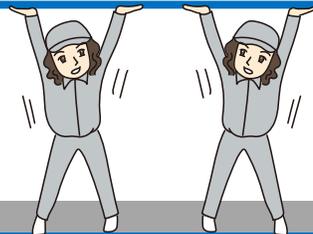
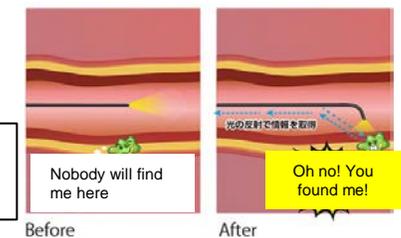
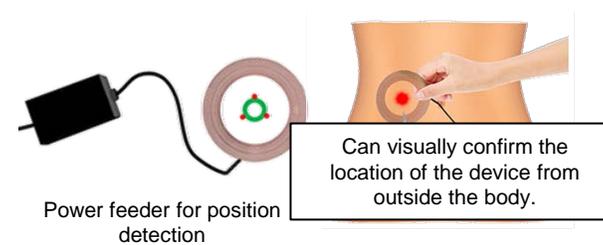
Town planning for mitigating disasters

Accelerating CASE (EV) in automobiles

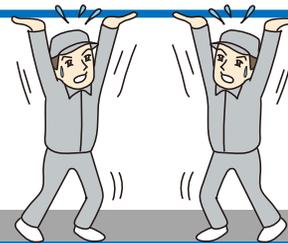
Shrinking labor force & Aging society

Revitalize the regional economy

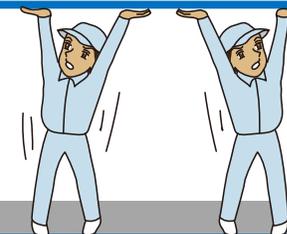
These are the issues Furukawa Electric Group wants to solve!



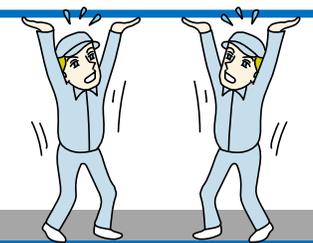
Metals



Polymers



Photonics



High frequency

Core technologies

Intellectual property

DX

Furukawa Electric will come together as a group to become a

## company that is essential for achieving the SDGs

Quickly grasp the issues faced by society & customers



Core technologies x technological innovation



Co-creation with partners

Social issues that involve Furukawa Electric Group, and SDGs that the group can contribute to achieving by 2030



Thank you very much  
for your attention.

***Bound to***  ***Innovate***

## Forward-Looking Statements

Projections of future sales and earnings in these materials are “forward-looking statements.”

Management offers these projections in good faith and on the basis of information presently available.

Information in these statements reflects assumptions about such variables as economic trends and currency exchange rates.

Forward-looking statements incorporate known and unknown risks as well as other uncertainties that include, but are not limited to, the following items.

- Economic trends in the U.S, Europe, Japan and elsewhere in Asia, particularly with regard to consumer spending and corporate expenditures.
- Changes in exchange rates of the U.S. dollar, euro, and Asian currencies.
- Furukawa Electric Group’s ability to respond to rapid advances in technology.
- Changes in assumptions involving financial and managerial matters and the operating environment.
- Current and future trade restrictions and related matters in foreign countries.
- Changes in the market value of securities held by Furukawa Electric Group.

Due to the above factors, actual sales, earnings, and other operating results may differ significantly from Looking Statements in these materials. In addition, following the release of these materials, Furukawa Electric Group assumes no obligation to announce any revisions to forward-looking statement in these materials.

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