

# General Overview of 2020 Medium-term Management Plan and FY2021 Management Policy

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Furukawa Electric Co., Ltd.

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

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- 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.
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**FURUKAWA ELECTRIC CO., LTD.**

## 1. Review of the 2020 Medium-term Management Plan

- (1) Concept and key initiatives in the 2020 Medium-term Management Plan (2020 MTMP)
- (2) Review
  - Strengthen and transform the businesses
  - Expand sales in the global market
  - Accelerate the creation of new businesses
  - Initiatives for ESG management and the results

## 2. Medium-term management issues

- (1) Vision 2030 and the key management issues (materiality)
- (2) Value creation process
- (3) Directed at the next Medium-term Management Plan (2025 MTMP)

- (4) Strategies directed at growing the main businesses
  - Information transmission infrastructure that can handle increased data traffic
  - Focus on renewable energy related business
  - Expand and create automotive products that support advances in vehicle electrification and autonomous driving

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- (1) Concept
- (2) Transform the businesses (continued)
- (3) Establish and foster new businesses
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- (5) Strengthen management focus on capital efficiency
- (6) Accelerate the group transformation activities
- (7) Accelerate ESG management

## **1. Review of the 2020 Medium-term Management Plan (2020 MTMP)**

### **(1) Concept and key initiatives in the 2020 Medium-term Management Plan**

#### **(2) Review**

- Strengthen and transform the businesses**
- Expand sales in the global market**
- Accelerate the creation of new businesses**
- Initiatives for ESG management and the results**

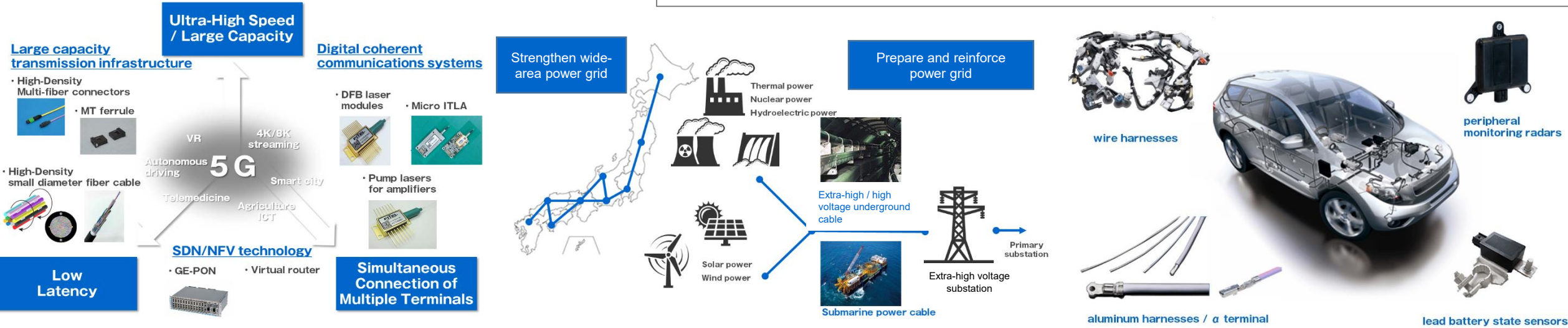
# (1) Concept and Key Initiatives in the 2020 Medium-term Management Plan

## <Concept>



## <Key initiatives>

- **Strengthen and transform the businesses**
  - Strengthen such priority areas as the Infrastructure (Communications Solutions / Energy Infrastructure) and Automotive segments
  - Introduce return on operating assets and thoroughly conduct KPI management
- **Expand sales in the global market**
  - Based on the attributes of each area, pursue synergies within the group
  - Expand the optical fiber and cable business overseas
  - Target: Overseas sales of JPY 550 billion
- **Accelerate the creation of new business**
  - Growth investments in the focal segments (Infrastructure / Automotive)
  - Strengthen open innovation



## (2) Review of the 2020 Medium-term Management Plan Change in Business Results

In addition to weakness in the Communications Solutions Division from the second half of FY2018, COVID-19 resulted in a challenging profit environment companywide in FY2020. However, despite these negative factors, steady improvement has been made to the financial situation.  
(In March 2021, the credit rating\* was raised from B to A)

Achieved the milestone target of at least JPY 35.0 billion in FY2018

### 2020 Medium-term Management Plan

	FY2015 Results	FY2016 Results	FY2017 Results	FY2018 Results	FY2019 Results	FY2020 Results	Compared to 2020 MTMP goals	2020 MTMP goals	
								As of May 2016	As of May 2018
<b>Operating income</b>	JPY 27.1 billion	JPY 38.6 billion	JPY 44.8 billion	JPY 40.8 billion	JPY 23.6 billion	<b>JPY 8.4 billion</b>	×	At least JPY 40.0 billion	At least JPY 55.0 billion
<b>Net income attributable to owners of the parent company</b>	JPY 10.0 billion	JPY 17.6 billion	JPY 28.5 billion	JPY 29.1 billion	JPY 17.6 billion	<b>JPY 10.0 billion</b>	×	At least JPY 20.0 billion	At least JPY 30.0 billion
<b>NET D/E ratio</b>	1.2	1.0	0.9	0.8	0.8	<b>0.79</b>	○	—	<0.8
<b>Equity capital ratio</b>	24.5%	27.6%	29.0%	30.3%	30.2%	<b>31.2%</b>	○	—	>30%
<b>ROE</b>	5.5%	9.3%	12.9%	12.0%	7.2%	<b>4.0%</b>	×	> 8%	>10%
<b>Return on operating assets</b>	9.1%	12.1%	13.1%	11.2%	6.1%	<b>2.2%</b>	×	At least 10%	At least 10%

\*Rating issued by Rating and Investment Information, Inc. (R&I)

## (2) Strengthen and Transform the Businesses

~Response to Low-margin / Non-core Businesses

**Based on management using “return on operating assets”, with consideration for the effective use of management resources group-wide, restructure the businesses, reorganize the locations and revise the business portfolio.**

	Major actions
FY2017	<ul style="list-style-type: none"> <li>•Restructured the Shenyang power cable site in China</li> <li>•Closed the Changchun wire harness site in China</li> <li>•Withdrew from the refrigerant pipe business (Okumura Metals)</li> </ul>
FY2018	<ul style="list-style-type: none"> <li>•Sold shares of FCM CO., LTD.</li> </ul>
FY2019	<ul style="list-style-type: none"> <li>•Reorganized the power cable business for the construction and wholesalers market</li> </ul>
FY2020	<ul style="list-style-type: none"> <li>•Transferred the copper tube, copper tube component and copper plate business to CTJ Holdings 2 Co., Ltd.</li> <li>•Established a magnet wire joint venture with Superior Essex, and transferred the heavy magnet wire business to the joint venture</li> </ul>

In addition, focus on project orders that will generate suitable profits and improving the product mix through increased sales of value added products.

## (2) Expand Sales in the Global Market

Based on the market characteristics and customer demand in each area, expand sales and strengthen the manufacturing & sales system.

### Global

➤ Strengthen the optical fiber and cable supply network

➤ Expand orders for (aluminum) wire harnesses and strengthen the supply network

### North America

- Increase production and sales of optical fiber and cable
- Expand wire harness sales

### China / South Korea / Taiwan

- Expand power cable orders
- Expand wire harness sales
- Establish a marketing regional headquarters (China)

### Japan

- Capture renewable energy demand
- Strengthen the industrial lasers business
- Strengthen high performance copper foil

### Central and South America

- Expand the communications solutions business

### EMEA

- Establish an optical cable manufacturing site (in Africa)
- Expand sales of functional plastic products (Railroad and automotive products)
- Expand power cable orders (in Middle East)

### Southeast Asia / India

- Strengthen and expand wire harness manufacturing sites
- Establish a thermal management product manufacturing site
- Establish a marketing regional headquarters (Singapore)



## (2) Accelerate the Creation of New Businesses

**Work to create new businesses, and sow the seeds of multiple new businesses while strengthening the frameworks for co-creation.**

- August 2016: Established the open laboratory FunLab® inside the Yokohama Works
- September 2017: Established the Advanced Prototyping Center (joint organization of the R&D Division and Sales Division)
- February 2018: Started a social cooperation program with The University of Tokyo
- May 2018: Started a cooperative activity with the accelerator Creww Inc. directed at strengthening the partnerships with venture companies
- August 2018: Established SVIL\* research center in the Silicon Valley in the US
- February 2019: Established the Future Infrastructure Technology Center
- June 2019: Opened the new FunLab®
- June 2020: Established the Digital Innovation Center



SVIL research center (US)



Open laboratory new FunLab®



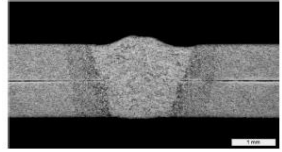
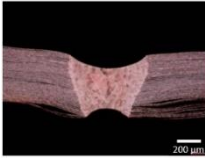
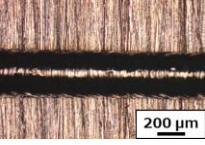


\*SVIL : Silicon Valley Innovation Laboratories

### Main new businesses (announced)

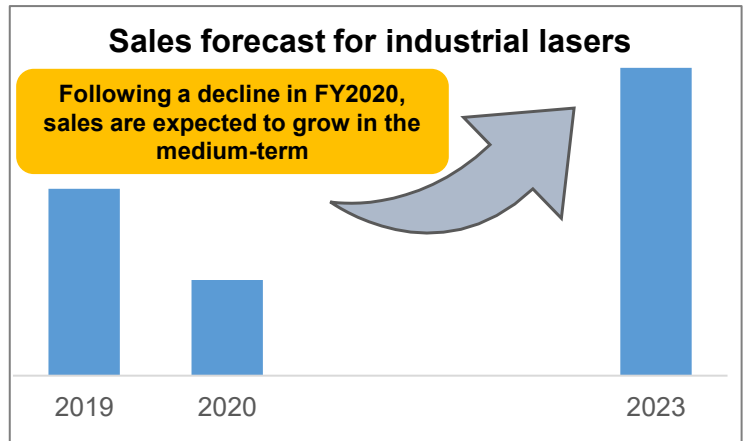
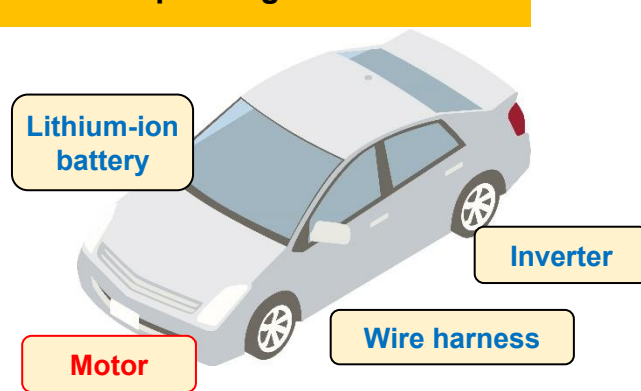
- Solutions business through the use of industrial lasers
- Wireless electrical power transmission systems
- Bipolar storage batteries
- Waste plastic recycling business
- Technology for producing LPG with metal encapsulated zeolite™
- Research into fiber power cable and R&D for satellite power supply (jointly with JAXA)
- Creation of roadway fixture inspection maps using AI (Michiten Snap)

# (2) Accelerate the Creation of New Businesses

Through the fusion of “materials capability” and “laser machining technology”, achieve full-scale commercialization of industrial lasers. Actively promote co-creation and aim to expand the business in the future.










<p>August 2017 Development of copper and fiber laser solutions</p>	<p>December 2017 Pure copper welding (Joint development with Furukawa Co., Ltd.)</p>	<p>April 2018 Galvanized steel plate welding</p>	<p>December 2018 Copper foil welding</p>	<p>June 2020 New laser welding solution (Blue laser x near infrared FL) (Partnership with Nichia Corporation)</p>	<p>December 2020 Commercialize laser welding products (Partnership with NITTOKU CO., LTD.)</p>	<p>January 2021 Release hybrid laser BRACE™- I BRACE™: Trademark of Furukawa Electric (pending)</p>
<p>High strength, stable copper welding for vehicle batteries, motors, etc.</p> 	<p>Contribute to increased performance of power semiconductors</p> <p>Welding pure copper</p> 	<p>Contribute to increased vehicle body strength</p> <p>Welding galvanized steel plates</p> 	<p>Contribute to increased lithium-ion battery capacity</p> <p>Welding copper foil</p> 	<p>Contribute to manufacturing process automation and increased productivity of the main components for xEV</p> <p>Sputterless processing of pure copper</p> 	<p>Laser welding machine for xEV motors</p> 	<p>World's highest level of quality, depth and processing speed for welding copper in the main components for xEV</p> 

Contribute to expanding xEV demand



# (2) Initiatives for ESG Management and the Results

## Full-scale implementation of ESG management directed at achieving the Furukawa Electric Group Vision 2030 and the SDGs.

	2018	2019	2020	2021
<b>ESG overall</b>		<ul style="list-style-type: none"> <li>Formulated Furukawa Electric Group Vision 2030</li> </ul> 	<ul style="list-style-type: none"> <li>Signed the UNGC*</li> </ul> 	<ul style="list-style-type: none"> <li>Issued the first integrate report</li> <li>Identified the materiality</li> </ul> 
<b>Environment</b>		<ul style="list-style-type: none"> <li>Obtained SBT certification</li> </ul> 	<ul style="list-style-type: none"> <li>Expressed support for TCFD recommendations</li> </ul> 	<ul style="list-style-type: none"> <li>Named to the CDP "Climate change A list" in 2020 for the first time</li> <li>Formulated Furukawa Electric Group Environmental Vision 2050</li> </ul>  
<b>Social</b>		<ul style="list-style-type: none"> <li>Formulated Furukawa Electric Group People Vision</li> </ul> 	<ul style="list-style-type: none"> <li>Formulated Furukawa Electric Group human rights policy</li> </ul>	<ul style="list-style-type: none"> <li>Formulated "Furukawa Seven"</li> </ul> 
<b>Governance</b>		<ul style="list-style-type: none"> <li>Outside Directors: Increase independence (Appointed 5 independent directors) and diversity (Appointed a female director)</li> </ul>	<ul style="list-style-type: none"> <li>Outside Audit &amp; Supervisory Board members: Diversity (Appointed a female Audit &amp; Supervisory Board member)</li> </ul>	<ul style="list-style-type: none"> <li>Revised Furukawa Electric Group CSR procurement guidelines</li> </ul>

\*Since 2020, Furukawa Electric Co., Ltd. has been committed to the UN Global Compact corporate responsibility initiative and its principles in the areas of human rights, labour, the environment and anti-corruption.

**Although there are still issues in regards to securing the earnings ability of the businesses, made progress in the key initiatives.**

	Results	Issues / Future actions
(1) Strengthen and transform the businesses	<ul style="list-style-type: none"> <li>• Revised the business portfolio</li> <li>• KPI management using return on operating assets</li> <li>• Established the activities of the Transformation Division (Target businesses: Global Fiber &amp; Cable, Energy Infrastructure, Copper &amp; High Performance Material Products)</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient expansion of the key businesses (Communications Solutions)</li> <li>• Response to low-margin businesses &amp; sites (Continued)</li> <li>• Expand the Transformation Division activities within the group</li> </ul>
(2) Expand Sales in the Global Market	<ul style="list-style-type: none"> <li>• Expanded sales and enhanced the manufacturing sites</li> <li>• Created a foothold for expanding the sales area through the establishment of marketing regional headquarters (in Southeast Asia, China)</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient net sales growth overseas (FY2020 target: JPY 550 billion) (FY2019: JPY 418.8 billion, FY2020: JPY 376.4 billion)</li> <li>• Expand the optical fiber and cable business</li> </ul>
(3) Accelerate the creation of new businesses	<ul style="list-style-type: none"> <li>• Strengthened the frameworks for co-creation Opened FunLab®, Established SVIL in the US</li> <li>• Strengthened the creation of new businesses Established Future Infrastructure Technology Center, Digital Innovation Center</li> <li>• Fostered new businesses through co-creation and sowed the seeds of new businesses Industrial lasers, bipolar storage batteries and metal encapsulated zeolite™</li> </ul>	<ul style="list-style-type: none"> <li>• Clarify the key domains</li> </ul> <p>Going forward, the Social Design &amp; New Business Development Department (newly established in April 2021) will be responsible for execution, and efforts will be made to accelerate the creation of products and businesses under this new organizational framework</p>

**Formulated a vision for 2030, and accelerated the full-scale measures for ESG management**

## 2. Medium-term management issues

**(1) Vision 2030 and the key management issues (materiality)**

**(2) Value creation process**

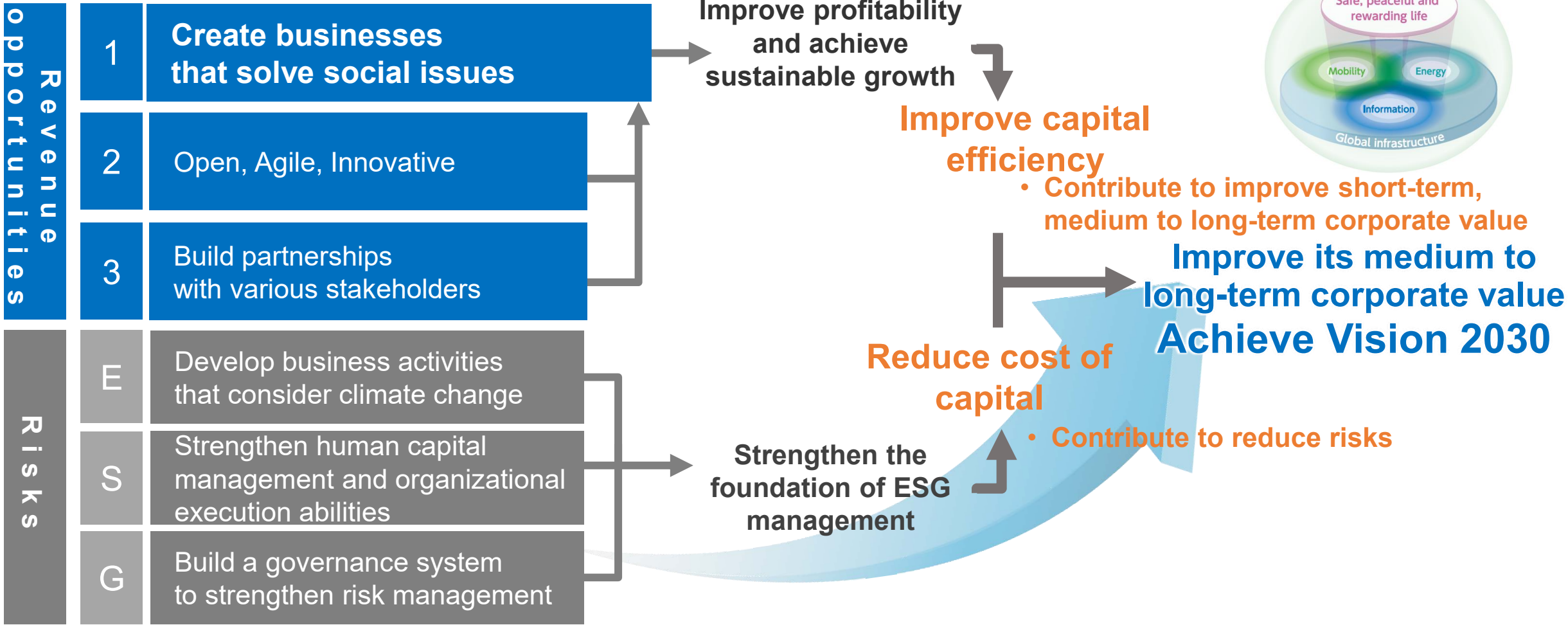
**(3) Directed at the next Medium-term Management Plan (2025 MTMP)**

**(4) Strategies directed at growing the main businesses**

- **Information transmission infrastructure that can handle increased data traffic**
- **Focus on renewable energy related business**
- **Expand and create automotive products that support advances in vehicle electrification and autonomous driving**

Identify the key management issues directed at achieving the Furukawa Electric Group Vision 2030.

**Materiality:** Important management issues for achievement of Vision 2030



# (2) Value Creation Process

**Revenue opportunities materiality: “Create businesses that solve social issues” and create value.**

## Furukawa Electric Group Corporate Philosophy

**Furukawa Electric Group’s business model and strengths**

- 4 core technologies
- Development and proposal capabilities not limited to particular markets
- Trust from customers

**Open, Agile, Innovative**

**Form partnerships with diverse stakeholders**

**New business models, reinforce the strengths**

P10, 24, 28

Industrial lasers business  
Bipolar storage batteries business

**Strengthen and transform businesses with an awareness of capital efficiency** P32, 33

**Strengthen management focus on capital efficiency**

**Growth through the creation of businesses that solve the social issues**

Businesses that support next-generation infrastructure

Environment-friendly businesses

Life science business  
Produce LPG from manure  
P29, 30

**Stabilize earnings in information, energy and mobility and contribute to an integrated society**

High speed, large volume information transmission infrastructure business  
Renewable energy related business  
Automotive products that support advancements in CASE  
P17 ~24

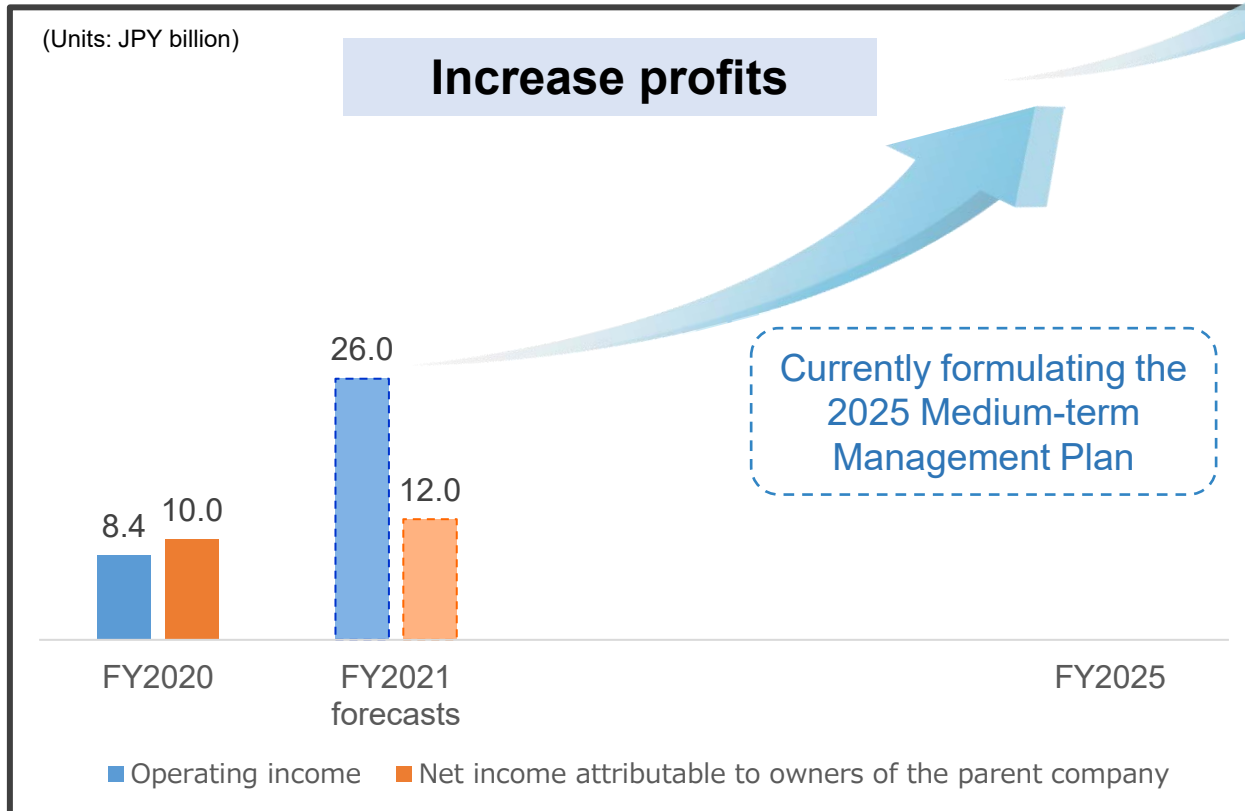
Communications Solutions	Focus
Energy Infrastructure	Focus
Automotive Products	Focus
Electronics Component Materials	Support
Functional Products	Support

**Strengthen the ESG management foundation: Climate change, strengthen human capital management and organization execution abilities, build a governance system**

# (3) Directed at the Next Medium-term Management Plan (2025 MTMP)

## <FY2021 Management policy>

- Transform businesses (continued)
- Establish and foster new businesses
- Strengthen management focus on capital efficiency



## 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.





# (4) Strategies Directed at Growing the Main Businesses

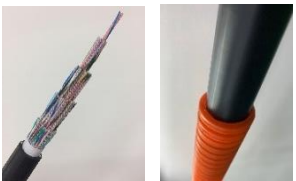
Information Transmission Infrastructure that can Handle Increased Data Traffic

Following advances in 5G, data traffic will increase over the medium to long-term. Support the growth of information transmission infrastructure such as base stations and data centers through a wide range of products.

## Communications Solutions

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

Rollable ribbon cable



- Optical fiber fusion splicer
- Multicore cable connectors



Connection cross section

### Optical devices

Digital coherent communication light sources



## Energy Infrastructure

(Industrial cable & power cable accessories)

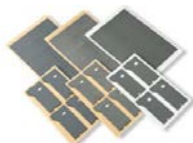
Used at data centers:

### Cable and connectors



Used at data centers:

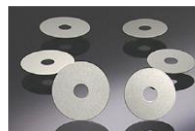
### Heat dissipation sheets



## 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 strips for power semiconductors and submarine optical fiber cable

Oxygen-free copper strips (GOFC)



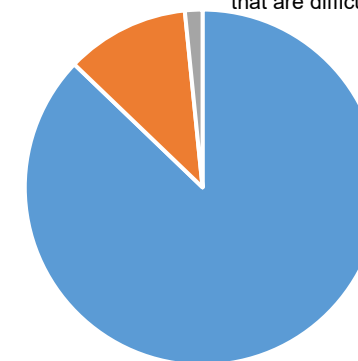
## Social issues

Advances in 5G/B5G, Increased communications traffic



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

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



- Communications Solutions
- Functional Products
- Other

# (4) Strategies Directed at Growing the Main Businesses

Information Transmission Infrastructure that can Handle Increased Data Traffic

## Strengthen the Optical Fiber and Cable Business in Europe and the Americas, and Increase Profits

- Accelerate profit growth in the Americas by securing a local production and sales network and customer base.

⇒ Increase productivity and cost competitiveness

Enhance the product portfolio - High value added products such as rollable ribbon cable

(For data centers, for submarine power cable, for non-telecommunications applications)

Expand the solutions services - Fusion of optical components, connectivity and wireless

Support telecommunications technology and social developments

### Improve optical cable profits in North America

In FY2020, due to decreased attendance caused by COVID-19, it was difficult to improve skill levels and improve productivity at the plant, resulting in an inability to achieve the profit targets.

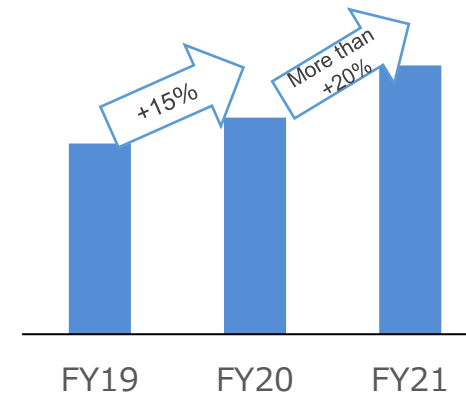


- As vaccinations progress, attendance is expected to improve (Maintain the measures to prevent infection)
- Continue to provide technical support from Japan

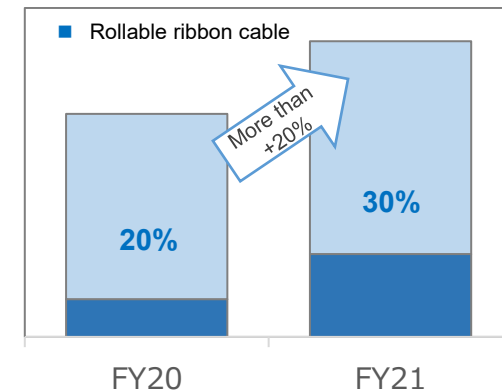
Increase production + Enhance employee training

Sales are forecast to increase more than 20% in FY2021  
Ratio of rollable ribbon products will also increase

North America optical fiber shipment volume forecast



North America optical cable sales forecast

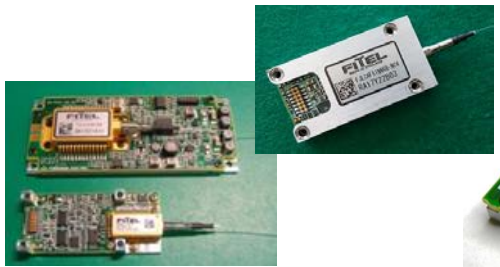


# (4) Strategies Directed at Growing the Main Businesses

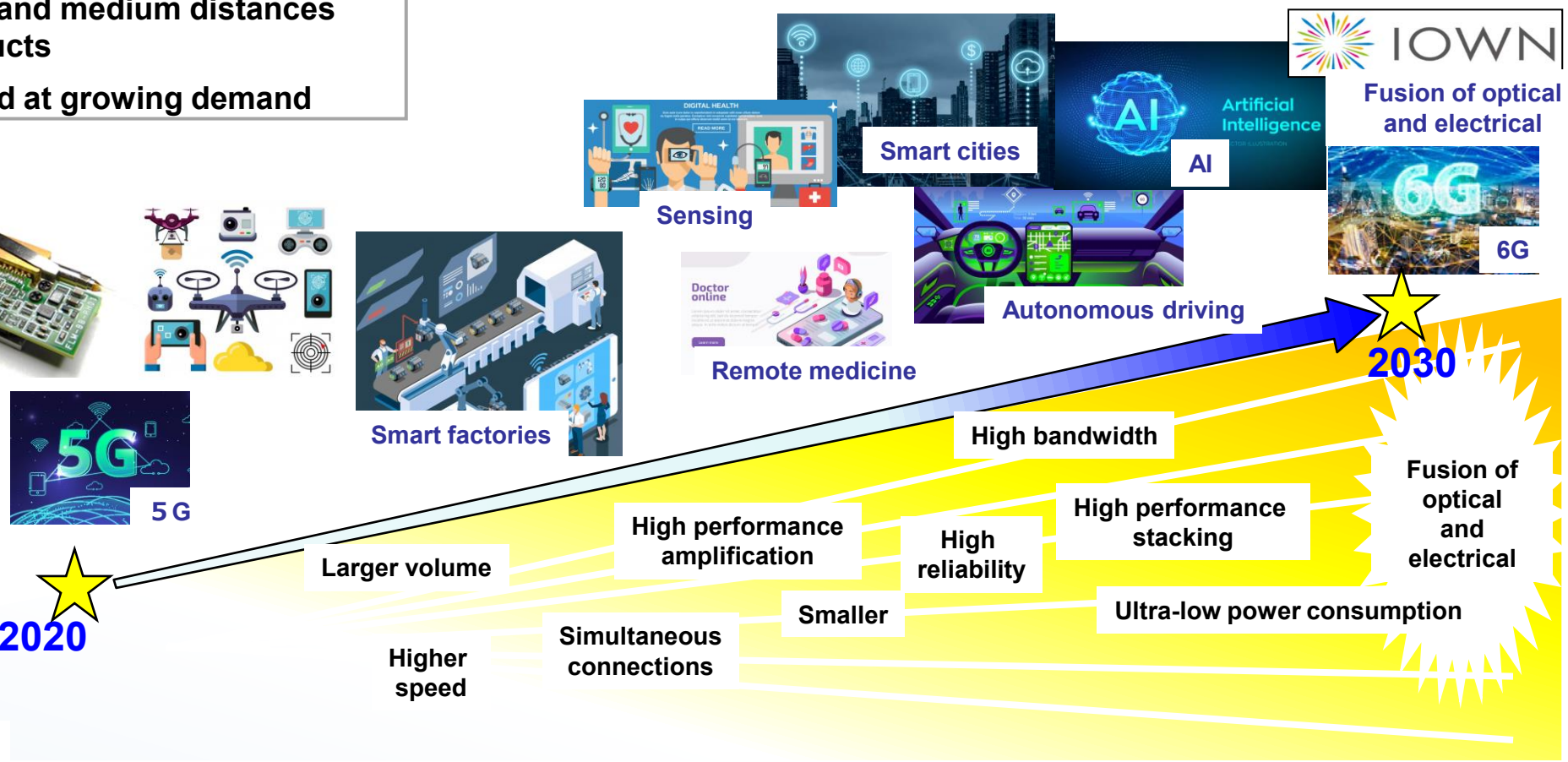
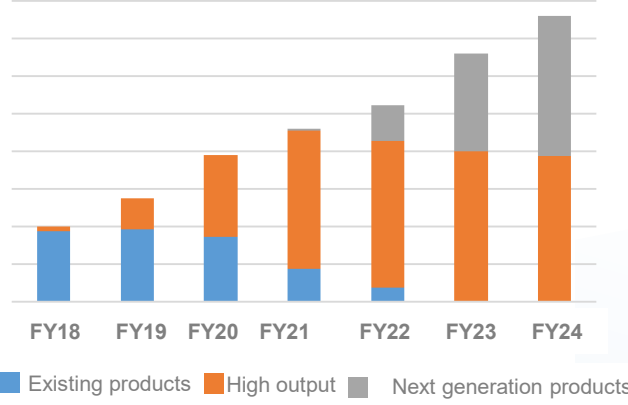
By continuing to launch new optical device products and providing stable supply, support the optical communications infrastructure that is evolving toward a fusion of optical and electrical, and continue to grow the business.

**ITLA (Variable wavelength light source)**

- Develop products for short and medium distances besides long-distance products
- Increase production directed at growing demand



ITLA shipping quantity forecast



# (4) Strategies Directed at Growing the Main Businesses

## Focus on Renewable Energy Related Business

Directed at achieving carbon neutral in 2050, based on a policy of maximizing the use of renewable energy, mainly offshore wind power installation will expand in Japan. Provide a product lineup that supports this growing market, including 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**



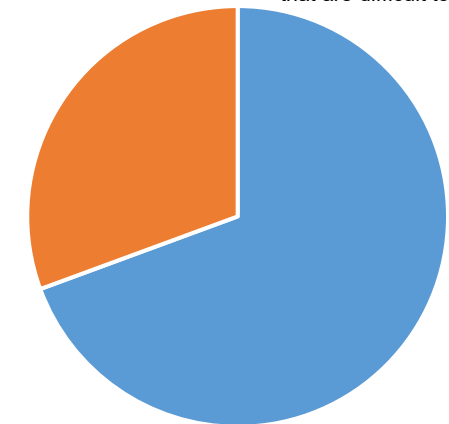
### Social issues:

Realize a carbon-free society, Realize tougher infrastructure



Sales (Estimate)\*  
(FY20: About JPY 10 billion)

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



■ Energy Infrastructure ■ Functional Products, etc.

### 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**

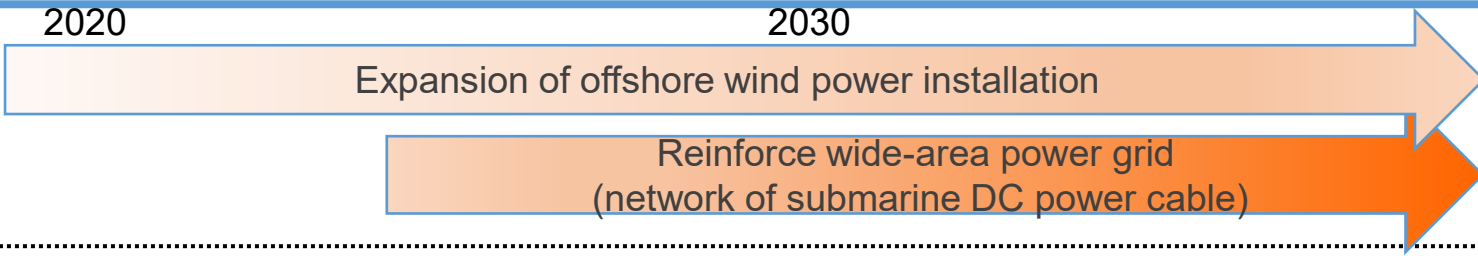


For screen printing of electrodes for solar power panels:  
**Ultra-thin SUS wire**



# (4) Strategies Directed at Growing the Main Businesses Focus on Renewable Energy Related Business

**Directed at the growing power cable demand for offshore wind power, continue to conduct sales activities, expand production and develop technology.**

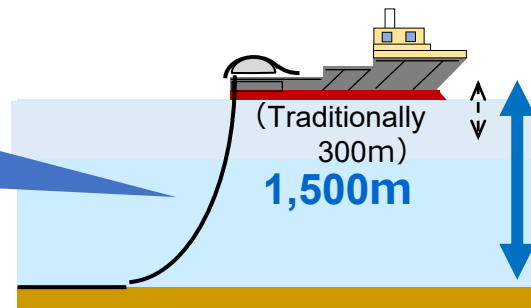


- (Sales activities) Including design cooperation during the design stage, actively promoting sales activities
- (Production capacity) Increasing as planned (already increased about 50%\* in FY20)  
\*Plan to invest about JPY 15 billion between 2018-2025 (8 years)
- (Installation capability) Currently increasing, including enhanced hiring activities and partnerships with associate companies  
(Plan: Double in FY25 compared to FY17)
- (Technology development) Promoting development that includes a response for the medium to long-term growth in submarine power cable demand
  - Increase the voltage of the dynamic cable used for floating offshore wind power
  - Development of direct current deep sea power cable that uses direct current (wide-area power grid)

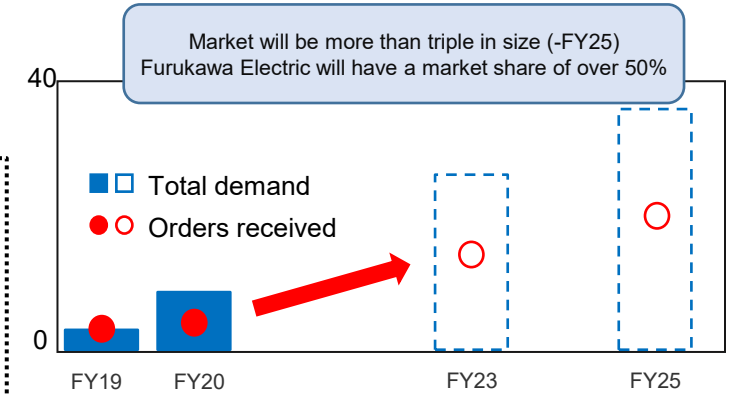


Turntable for winding the cable

**Direct current deep sea power cable**  
Develop lighter weight cable and cable laying technology that can withstand high tensile forces

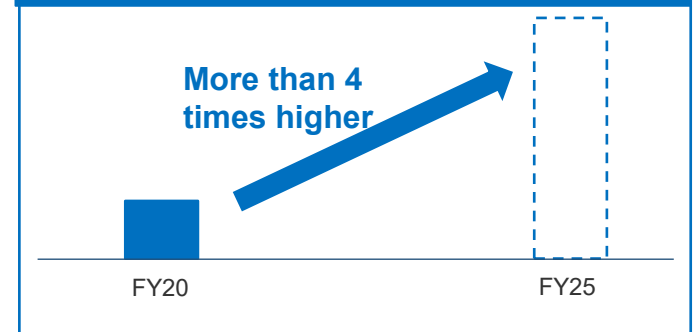


**Forecast of submarine power cable demand for renewable energy in Japan (billion yen)**



**Contribute to renewable energy through power cable for offshore wind power systems**

**Sales forecast of submarine power cable for renewable energy in Japan**

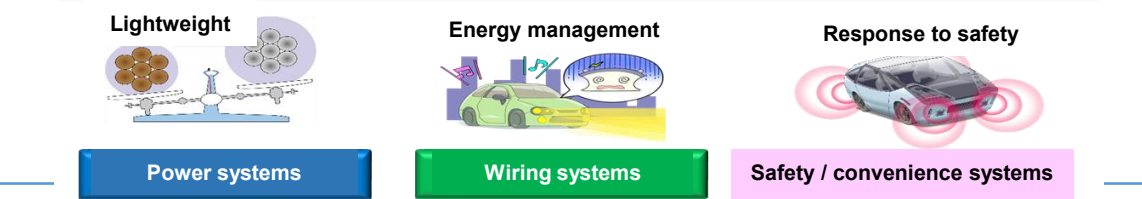


# (4) Strategies Directed at Growing the Main Businesses Expand and Create Automotive Products that Support Advances in Vehicle Electrification and Autonomous Driving

In response to the demands to protect the environment and ensure safety, contribute to lightweight, power supply management and vehicle electrification through product lineups that include materials technology.

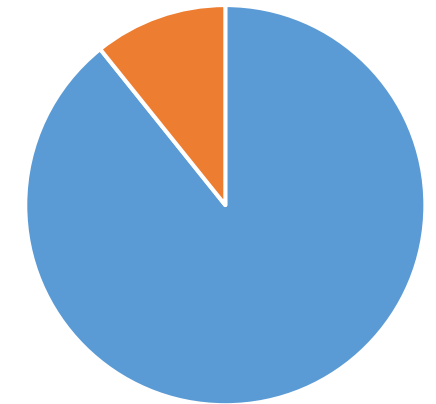


**Social issues:**  
Realize a carbon-free society, Realize tougher traffic infrastructure, Reduce traffic accidents



**Sales (Estimate)\***  
(FY20: About JPY 250 billion)

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



- Automotive Products & Batteries
- Electronics Component Materials, etc.

**Automotive Products**

**Electronics Component Materials**  
(Copper/ aluminum wire, oxygen-free copper, thin copper strips, etc.)

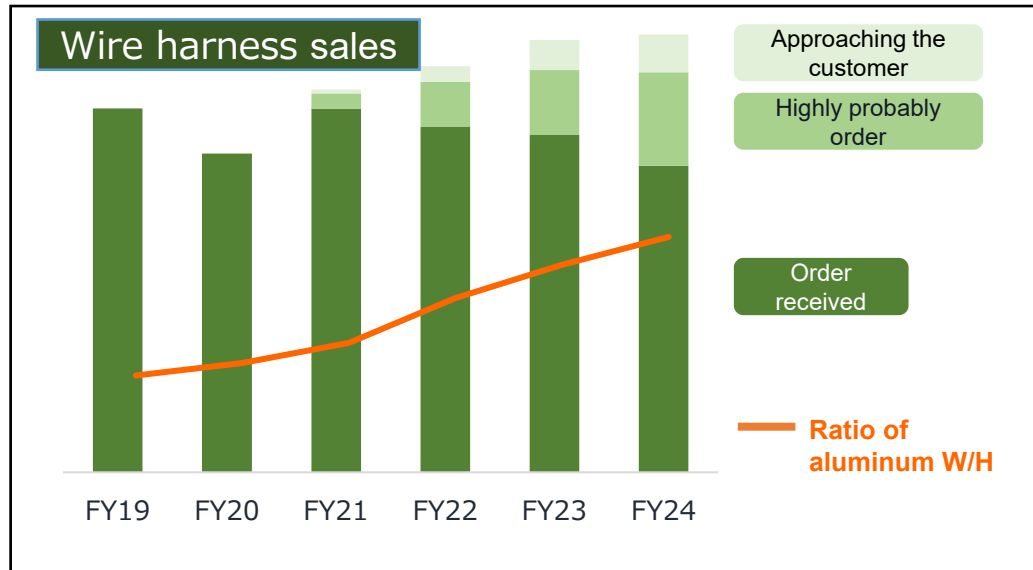
# (4) Strategies Directed at Growing the Main Businesses Expand and Create Automotive Products that Support Advances in Vehicle Electrification and Autonomous Driving

**Increase orders for aluminum wire harnesses that support reduced vehicle weight and develop new applications for peripheral monitoring radar that supports safety.**

## Aluminum wire harnesses



- Steadily accumulating orders. Expect to increase use from 46 vehicle models of 6 manufacturers to 88 models of 8 manufacturers in 2025.
- Ensure BCP by strengthening the supply chain, steadily establish the new site in Vietnam and work to increase earnings by obtaining a return on the investments.



## Peripheral monitoring radar



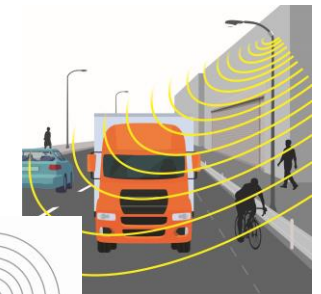
- Leveraging the fact that it is negligibly affected by bad weather (rain, snow, fog), currently working to expand sales for new applications, including agricultural and construction machinery and traffic infrastructure. (Already started deliveries for agricultural and construction machinery from June 2020)
- For vehicle applications, aim to further increase orders through the development of smaller, higher performance products.



Agricultural machinery



Vehicles



Traffic infrastructure (Prevent driving in the wrong direction)

(4) Strategies Directed at Growing the Main Businesses  
 Expand and Create Automotive Products that Support Advances in Vehicle Electrification and Autonomous Driving

**Develop industrial laser technology, and conduct co-creation throughout the value chain  
 Streamline the production process for mobility, and accelerate vehicle electrification and vehicle weight reduction.**

**NICHIA**  
 Blue semiconductor laser

Blue laser diode module

Blue-IR Hybrid laser

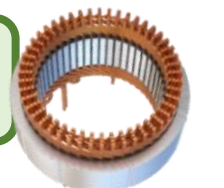
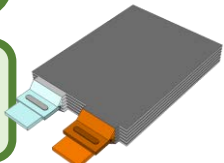
BRACE™

**NITOKU**  
 Laser welding machine for motors

Reduce vehicle weight and improve fuel efficiency by using lightweight harnesses

High capacity lithium-ion batteries

Smaller motors for xEV



Electrolytic copper foil

Copper strips and electric conductor products

Materials capability in copper

Observation surface 1 (laser irradiated surface)

Observation surface 2 (cut surface)

Copper foil coated with active substance

Pure copper foil

Copper electrode tabs cut out by laser (negative)

Lithium-ion battery

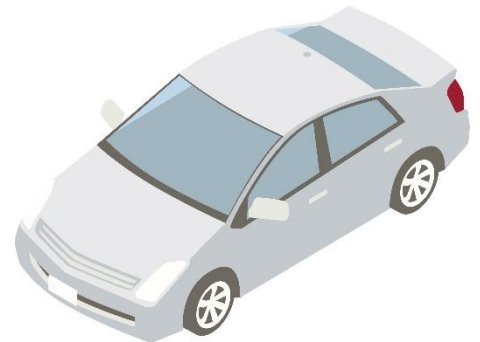
Traction motor

Laser oscillator and laser processing technology

$\alpha$  terminal and aluminum wire harnesses

FAS FURUKAWA AUTOMOTIVE SYSTEMS INC.

Automotive product applications





## **3. FY2021 Management policy**

### **(1) Concept**

### **(2) Transform the businesses (continued)**

### **(3) Establish and foster new businesses**

### **(4) Pursue new business opportunities**

### **(5) Strengthen management focus on capital efficiency**

### **(6) Accelerate the group transformation activities**

### **(7) Accelerate ESG management**

# (1) Concept

## ■ In FY2021, become a stronger company and make definite preparations for the 2025 Medium-term Management Plan

### ● Transform the businesses

Strengthen the key businesses and continue to revise the business portfolio through responses to the low-margin and non-core businesses

### ● Establish and foster new businesses

Create environment-friendly businesses and businesses that solve social issues

### ● Strengthen management focus on capital efficiency

Evolve the “return on operating assets” used as an indicator in the 2020 Medium-term Management Plan, and shift to target management with a focus on capital efficiency and greater awareness of “cost of capital”

## (2) Transform the Businesses (Continued)

**Continue to revise the business portfolio, including responses to low-margin / non-core businesses and partnerships with other companies.**

Response to low-margin / non-core businesses	Establish and foster new business / Strengthen the key businesses
<p><b>&lt;Executed (including planned execution)&gt;</b></p> <ul style="list-style-type: none"> <li>• <b>Power cable business for the construction and wholesalers market</b></li> <li>• <b>Copper tube business</b></li> <li>• <b>Heavy magnet wire business</b></li> <li>• <b>Converted Furukawa Logistics Corp. into an equity method affiliate</b> (Concluded an agreement on April 27,2021 and plan to transfer the shares during 2021)</li> </ul> <p><b>&lt;Under consideration or commenced&gt;</b></p> <ul style="list-style-type: none"> <li>• <b>Project A</b></li> <li>• <b>Project B</b></li> </ul> <p><b>*Also considering / conducting reorganizations to multiple other sites</b></p>	<p><b>&lt;Executed (Including projects in development and preparation stage prior to commercialization)&gt;</b></p> <ul style="list-style-type: none"> <li>• <b>Industrial lasers business</b> (Partnerships with Nichia Corporation and NITTOKU CO., LTD.)</li> <li>• <b>Reinforced plastic business</b> (Partnerships with Tetra Pak and Veolia)</li> <li>• <b>Bipolar storage batteries</b> (Joint development with the Furukawa Battery Co., Ltd.)</li> <li>• <b>Life sciences business</b> (Co-creation with Atonarp Inc.)</li> <li>• <b>Space business</b> (Co-creation with JAXA)</li> <li>• <b>Technology for producing LPG</b></li> </ul> <p><b>&lt;Under consideration or commenced&gt; (M&amp;A directed at strengthening the business)</b></p> <ul style="list-style-type: none"> <li>• <b>Project a</b></li> <li>• <b>Project b</b></li> <li>•</li> <li>•</li> <li>•</li> </ul>

## Commercialize technology that contributes to achieving carbon neutral.

### Industrial lasers

Directed at further market penetration of xEV, aim to be the de facto standard for copper processing through co-creation with Nichia Corporation.

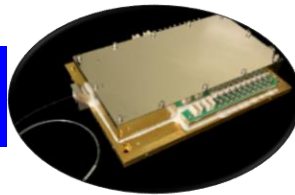
Business alliance: With consideration for a potential JV in the future, consolidate module manufacturing to Tokushima

Joint development: Develop a next generation blue laser diode module

Joint operations: Establish and operate a joint laboratory within the Yokohama Research Center\*

\* Nichia Corporation

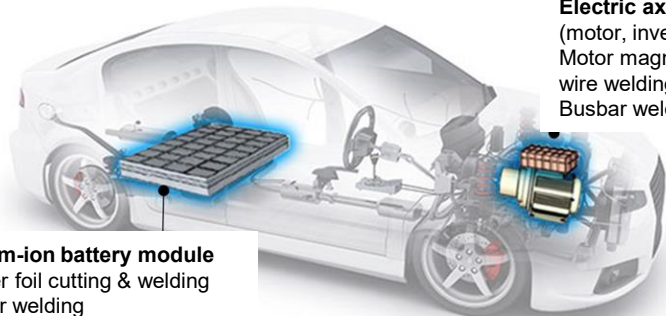
Blue laser diode  
module (LDM)



Electric axle  
(motor, inverter)  
Motor magnet  
wire welding  
Busbar welding



Lithium-ion battery module  
Copper foil cutting & welding  
Busbar welding



### Bipolar storage batteries

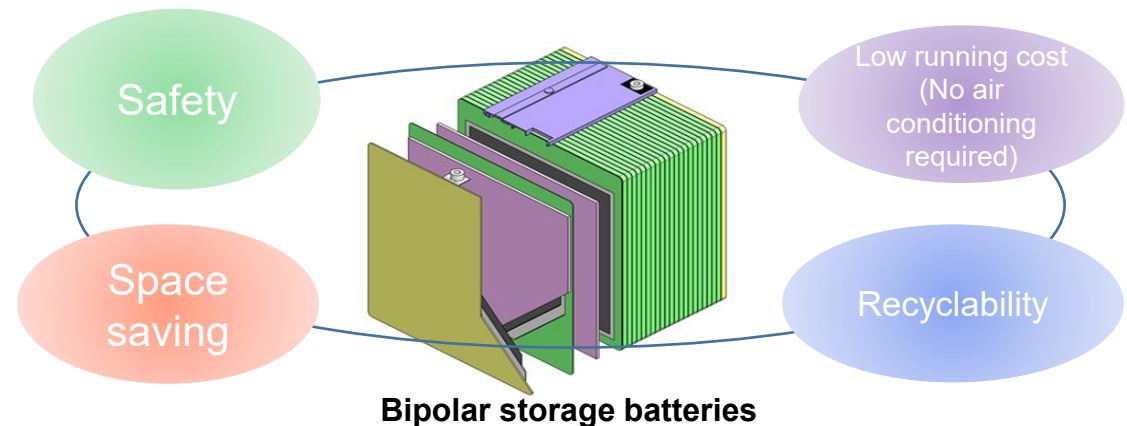
In order to achieve carbon neutral, demand for storage batteries will increase as a key device for the efficient use of renewable energy.

The joint development with the Furukawa Battery Co., Ltd. is progressing according to plan.

Schedule:

FY2021 Start shipping samples

FY2022 Start shipping actual products



## Challenge life sciences businesses directed at “Good Health and Well-being”.

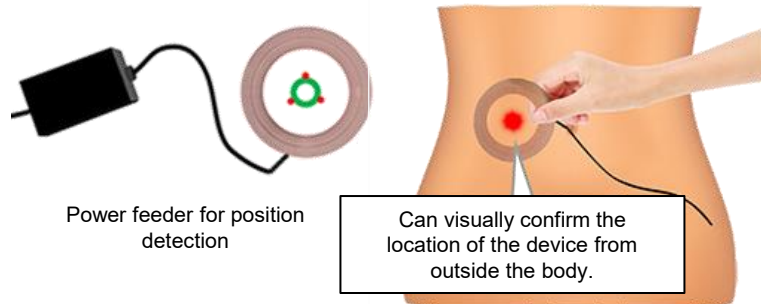
### Life sciences business

In preparation for the era of “100 year life expectancy”, utilize the core technologies to protect human “health”.

- Utilizing **photonics technology**, focus on the three areas of “**Find** using light, **measure** using light and **cauterize** using light”
- Including the partnership with Atonarp Inc., strengthen the co-creation alliances with industry and academia

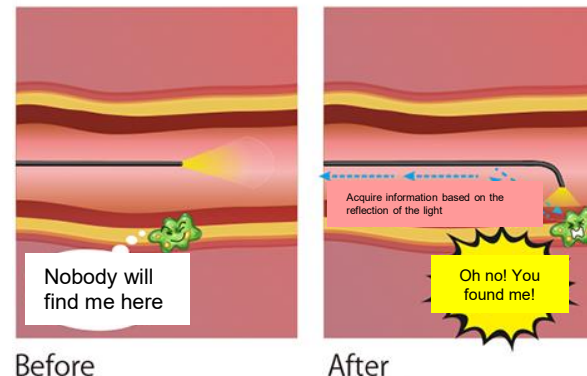
#### Find using light

Medical device for internal detection



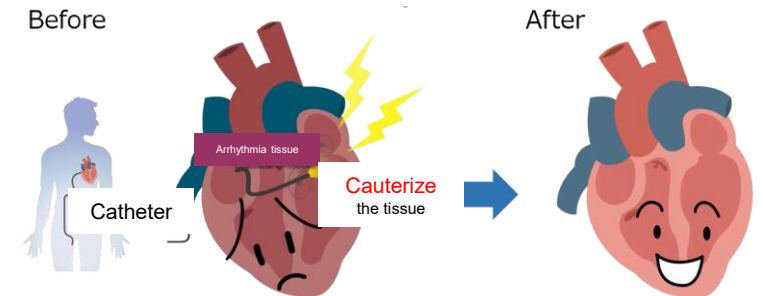
#### Measure using light

OCT (optical coherence tomography)



#### Cauterize using light

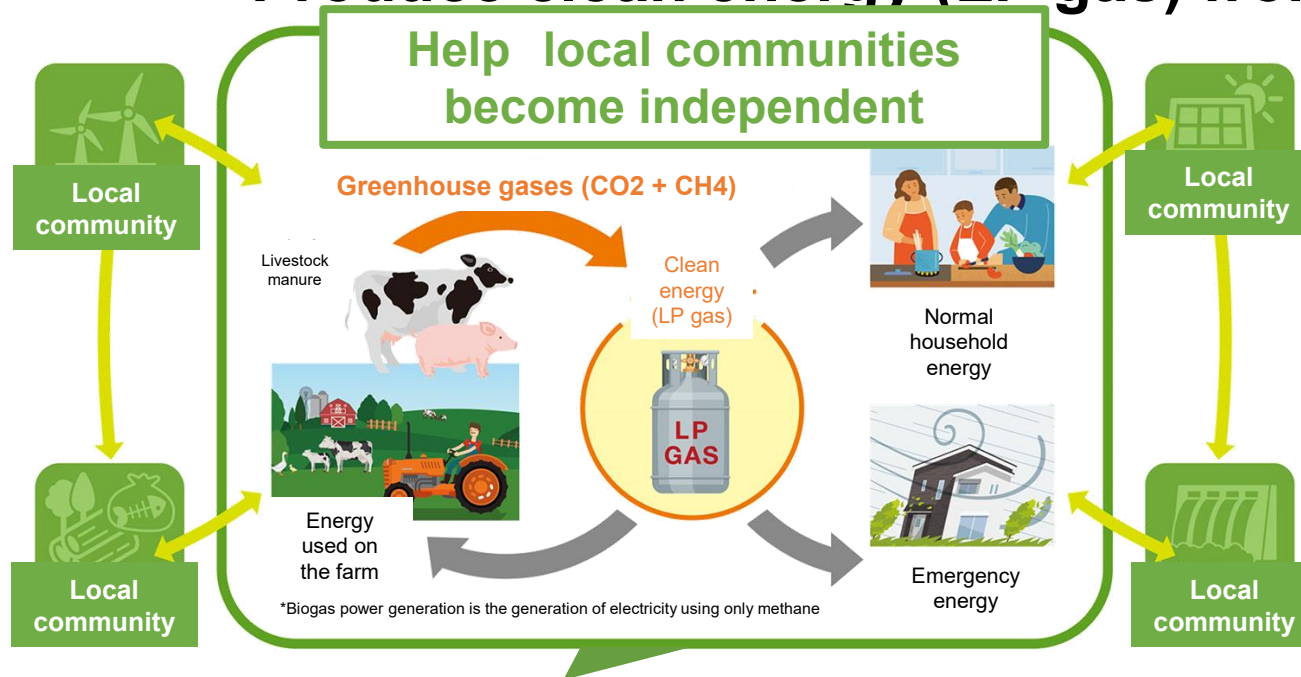
Ablation treatment



# (3) Establish and Foster New Businesses

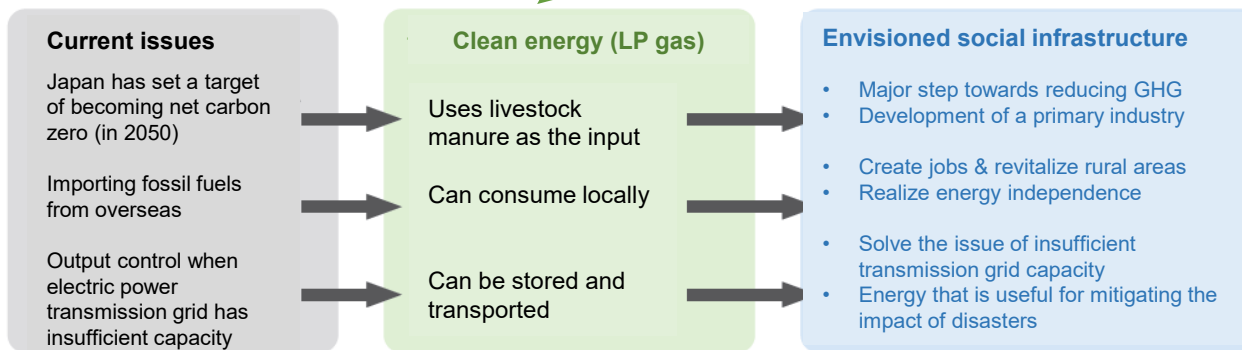
By digging deeper into social issues,  
build new social infrastructure and business models.

## Produce clean energy (LP gas) from livestock manure



Through metal catalyst adhesion technology utilizing the company's core **metal** and **polymer** technology, successfully developed technology for converting biogas into LP gas

- Contribute to realizing a carbon free society
- By producing clean LP gas that can be consumed locally, build a low cost carbon neutral society that uses existing infrastructure
- Provide a fossil fuel that does not rely on foreign sources
- Plan to build an ecosystem with companies that possess existing infrastructure, and commercialize in 2030

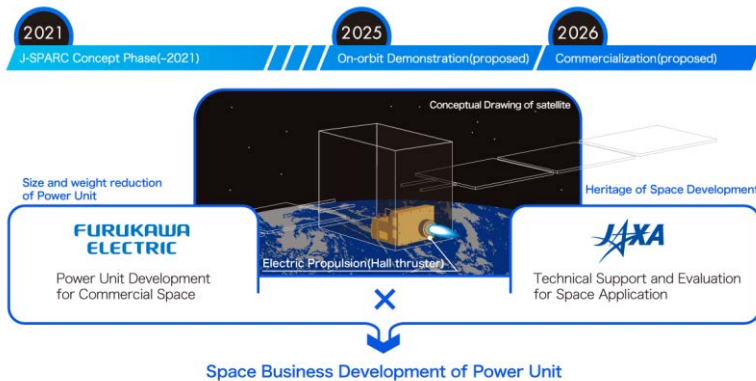


# (4) Pursue new business opportunities

## Create technology that will be used to solve social issues.

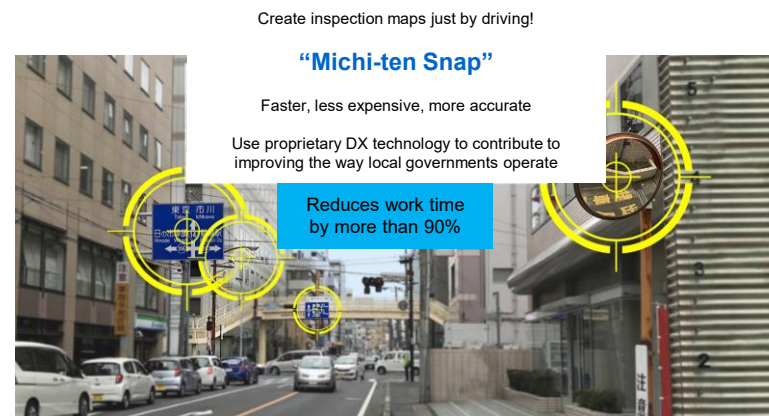
### Pursue technology in the space domain

- Utilize the core technologies developed for land-based infrastructure in space.
- Solve social issues on earth from space.
- Co-creation with JAXA and Interstellar Technologies Inc.



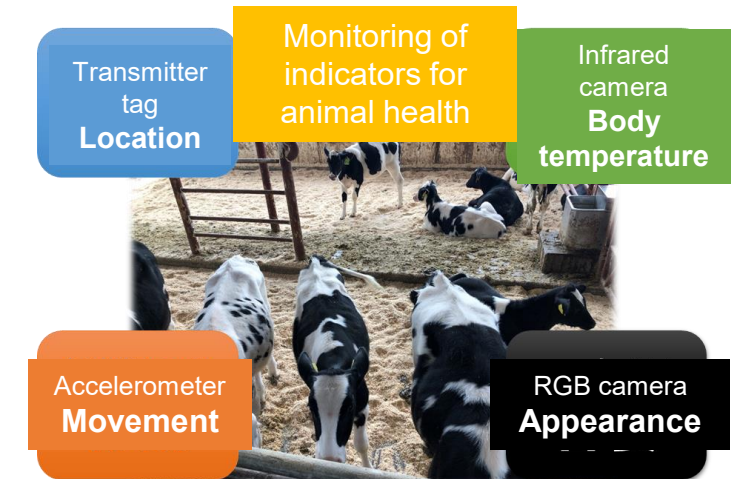
### Use DX to maintain and manage social infrastructure

- Utilizing proprietary image analysis technology, maintain and manage roadway fixtures such as road signs and light poles.
- Pursue additional applications, such as for railroads.



### Promote the use of DX in primary industries

- Utilize image analysis technology and AI to realize smart agriculture.
- As a NARO project, currently developing technology through industry-academia collaboration for simultaneously monitoring a herd of nursing calves.
- Establish a course on creating industries with Hokkaido University.



**Shift to management (ROIC+  $\alpha$ ) that is focused on capital efficiency and has increased awareness of “cost of capital”.**

- ⇒ **By shifting to business PF based on capital efficiency, promote better and faster improvement**
- ⇒ **Work to establish business activities with an awareness of capital efficiency at each division and workplace**

## 2020 MTMP indicator (current)

### Return on operating assets

: Operating income / (Inventory + Non-current assets)

#### Results

- Identify the low-margin businesses
- Follow up in series

#### Issues

- Difficult to compare with cost of capital (WACC)
- Difficult to conduct target management with an awareness of corporate value
- Weak as a reason for shifting to business PF

**ROIC  
+  $\alpha$**   
(From FY2022)

## 2025 MTMP indicator (New indicator: ROIC & Internal management indicator: FVA)

### Return on invested capital (ROIC) & Value added to invested capital (FVA)

: NOPAT  $\div$  Invested capital

: NOPAT – Cost of capital (Invested capital x WACC)

Target management based on cost of capital

Based on WACC targets set for each division, manage performance targets directed at creating corporate value in excess of the cost of capital

Business PF management focused on corporate value

Based on corporate value creation (ROIC spread & FVA), thoroughly manage investment allocation and business PF

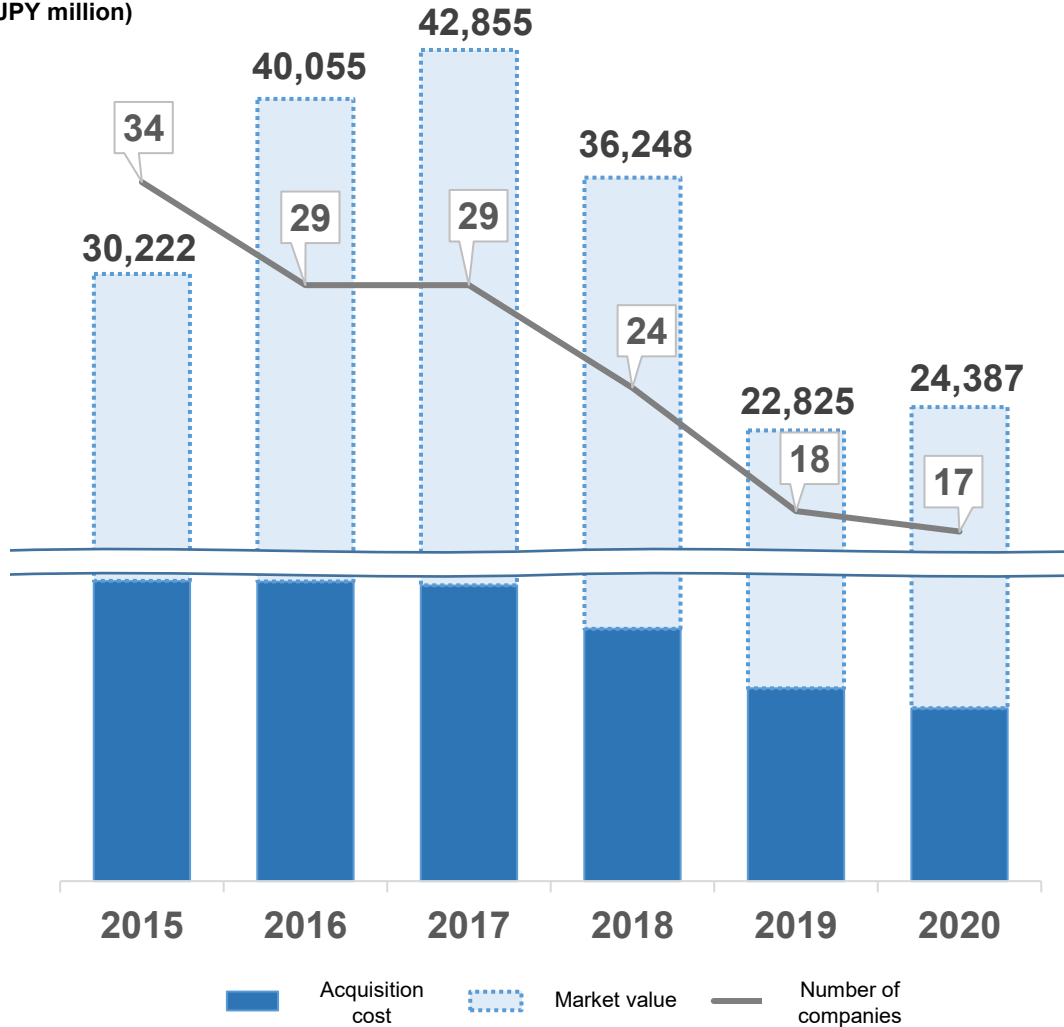
Link division activities and corporate value

Using an “FVA tree”, clarify the links between the division activity indicators and value creation (FVA)



Changes in the balance sheet (BS) value of listed cross-shareholdings and number of companies in which shares are held

(Units: JPY million)



**During the 5 years of the 2020 Medium-term Management plan, reduce listed cross-shareholdings.**

**Going forward, will decide whether or not to continue holding the shares based on factors such as the meaning of and benefits from such shareholdings.**

**\*In FY2020, continued to reduce listed cross-shareholdings.**

**In FY2020, BS value increased due to a rise in stock prices, but shareholdings decreased on an acquisition cost basis.**

# (6) Accelerate the Group Transformation Activities

Actively use the “stronger organizational execution abilities” obtained by reforming the business through the Transformation Division\* activities.

## FY2019-FY2020

### Strengthen the organizational ability

Without fighting alone, address the issues as a team  
Strengthen leadership for challenging to achieve stretched targets  
Teach skills for improving problem solving ability  
Progress management on a weekly basis



### Strengthen the businesses and monozukuri

Increase the productivity of the manufacturing divisions and expand sales  
Link manufacturing & sales and implement global procurement  
Improve the sharing of best practices between businesses and regions



### Strengthen agile management

Frequently revise the opportunities and risks  
Create a priority order based on the level of severity and urgency, and implement responses



## FY2021-

### Expand target businesses / workplaces

Expand to the Automotive Products Division, and expand to new workplaces within the Communications Solutions Division

Also partially apply to the establishment of new businesses

Apply to the new MTMP with a longer time span until achieving the targets

2 years → 4 years (2025MTMP from FY2022)

\*The activities of the Transformation Division have been transferred to the Corporate Strategy & Direction Division newly established in April 2021.

# (7) Accelerate ESG management – Initiatives to address climate change

**Grasp both the “revenue opportunities” and “risks” of the materiality for climate change, and strengthen the initiatives.**

## Materiality

- Changes in the external environment
- Internal awareness

**(Revenue opportunities)  
Create environment-friendly businesses**

- Growing demand for renewable energy
- Changes in the mobility market
- ESG promotion policies in each country
- 4 core technologies
- Proposal and development capabilities not limited to particular markets
- Trust from customers

**(Risk)  
Develop business activities that consider climate change**

- ESG regulations in each country
- Higher GHG emissions reduction targets
- Increasingly severe abnormal weather
- Accelerating differentiation within the market through ESG
- Higher manufacturing and raw materials costs following the introduction of a carbon tax
- Suspended operations due to a natural disaster
- Exclusion from the supply chain or market

## Main actions

- Expand the businesses and products that support achieving carbon neutral (CN)
  - Renewable energy related businesses
  - Products used for vehicle electrification and reducing vehicle weight
  - Environment-friendly products
- Develop and commercialize technology used to achieve CN
  - Technology for producing LPG with metal encapsulated zeolite™
  - Fiber reinforcement technology for waste plastic recycling



- Formulate a roadmap for achieving CN
  - Environmental Vision 2050, and goal of becoming net carbon zero
  - Further introduce and use renewable energy
  - Revise the 2030 environmental targets
- Promote co-creation with stakeholders and information disclosure
  - Reduce GHG emissions throughout the value chain
  - Conduct and disclose the scenario analysis in accordance with TCFD



# (7) Accelerate ESG management – Initiatives to address climate change

Promote initiatives that contribute to reducing CO2 emissions throughout the value chain.

Raw materials

Production

Product uses

Aluminum  
substrate

Aluminum  
drawing stock

Aluminum  
conductor wire

Aluminum wire  
harnesses

Contribute to reducing CO<sub>2</sub>  
through the use of aluminum  
wire harnesses



Raw materials made  
using hydroelectric power  
(Indonesia)

TMS (Indonesia)

FAPV (Vietnam)

FAPV (Vietnam)

Copper  
substrate

Original copper  
alloys

α terminal,  
etc.

Wire harnesses &  
components

Nikko Works

Mie Works

FALP  
(Philippines)

Geothermal  
power

Hydroelectric power  
(Furukawa Nikko Power  
Generation)



Solar power



FURMEX  
(Mexico)

Solar power

FME  
(India)

Solar power

Contribute to reducing CO<sub>2</sub>  
through the use of copper foil  
for lithium-ion batteries

Recycled copper

Electrolytic  
copper foil

Reduce CO<sub>2</sub> through the use of  
recycled material

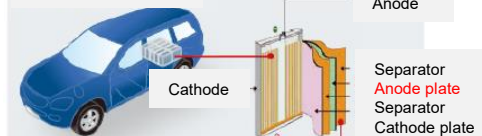
Copper Foil  
Division

Solar power



Contribution of the  
copper foil to the  
electric vehicles

Lithium-ion battery



For lithium-ion batteries NC-WS  
electrolytic copper foil

Value employees  
Value customers  
Value new technology  
and  
Contribute to society



Thank you very much  
for your attention.

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