

*Furukawa **G** Plan 2020*
*Group **G**lobal **G**rowth*

Progress of
Mid-term Management Plan

President
Keiichi Kobayashi

May 21, 2018

FURUKAWA ELECTRIC CO., LTD

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 the 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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FURUKAWA ELECTRIC CO., LTD.

- I . 2020 Mid-term Management Plan – New quantitative management targets**
- II . Reform the low-margin businesses and products**
- III . Create value through regional strategies**
- IV . Strengthen and transform the businesses**
 - 1 . Communications Solutions**
 - 2 . Energy Infrastructure**
 - 3 . Automotive Products**
- V . Initiatives to strengthen ESG**
- VI . Profit growth by executing the initiatives in the 2020 Mid-term Management Plan**

2020 Mid-term Management Plan - New quantitative management targets (Revised in May 2018)

Achieve the operating income and net income targets 3 years earlier than planned. Set new quantitative management targets aimed at additional profit growth and improved financial health.

(*JPY billion)	FY2016	FY2017	FY2018 forecast		FY2020 Mid-term Target		Initial forecast* (As the target level for the 2020 Mid-term Management Plan and beyond)
			Initial forecast*	New forecast	Initial forecast*	New forecast	
Operating income ※	38.6	44.8	35.0	43.0	>40.0	>55.0	
Net Income ※	17.6	28.5	—	23.0	>20.0	>30.0	
Net D/E ratio	0.99	0.88	—	0.9	—	<0.8	<0.8
Equity capital ratio	27.6%	29.0%	—	30%	—	>30%	> 30%
ROE	9.3%	12.9%	—	10%	> 8%	>10%	> 10%

Exchange rate assumption for FY2018-FY2020: USD 1 = JPY 105, *Initial forecast (when announcing the mid-term management plan in May 2016) : USD 1 = JPY 110

By introducing the return on operating assets, make the profit targets and timeframe visible for each product and business. Accelerate the improvements to the low-margin businesses and products.

Implementing and continuing improvement measures at each division

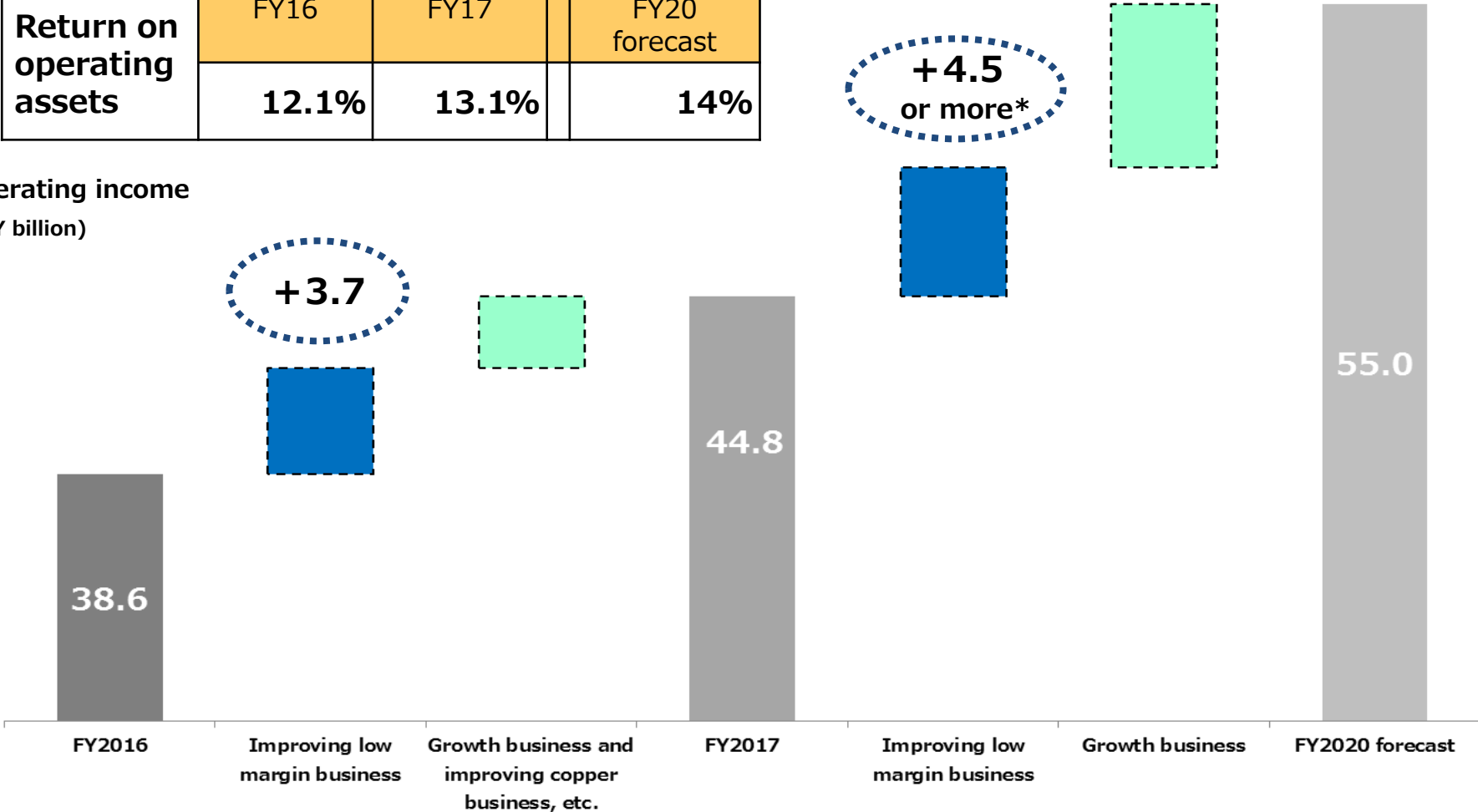
	FY2017 (already implemented)	Details of the key future initiatives
Communications Solutions	<ul style="list-style-type: none"> • Reorganize the Southeast Asia cable sites (Thailand), and start accepting local orders for LAN solutions through the joint cooperation with FEL • Correct the cable prices in Japan • Promote the passive components partnership (Established a joint venture in April 2017) 	<ul style="list-style-type: none"> • Promote the Solutions business in Southeast Asia • Accelerate the acquiring of new demand in relation to connectors, etc. for data centers • Reorganize and downsize the low-margin optical devices
Energy Infrastructure	<ul style="list-style-type: none"> • Power cables – Restructure the Shenyang plant in China • Revise the sales strategy for general power cables for construction and retail sales 	<ul style="list-style-type: none"> • Make the power cable business profitable • Introduce well differentiated products into the construction and retail sales markets
Automotive Products	<ul style="list-style-type: none"> • W/H* – Consolidate the FWSM plants in Mexico (2→1) • W/H – Close the Changchun plant in China (company is being liquidated) 	<ul style="list-style-type: none"> • W/H – Restructure the Chongqing plant in China
Electronics Component Materials	<ul style="list-style-type: none"> • Withdraw from refrigerant pipe business (Okumura Metals) • Revise the prices of low-margin magnet wire products 	<ul style="list-style-type: none"> • Transfer of the Okumura Metals head office to the Copper Tube Division (Amagasaki) • Revise the product mix of copper strip products • Continue discussions on price revisions for low-margin magnet wire products
Functional Products	<ul style="list-style-type: none"> • Downsize the general use copper foil products, and shift to high value added products 	<ul style="list-style-type: none"> • Continue the shift to high value added copper foil products

*W/H : Wire harnesses

With an eye on the profit targets for each business and product, accumulate further results

	FY16	FY17	FY20 forecast
Return on operating assets	12.1%	13.1%	14%

Operating income (JPY billion)



* Includes improvements of Energy Infrastructure (JPY +2.4 billion)

Value added products are steadily being strengthened in line with customer requests

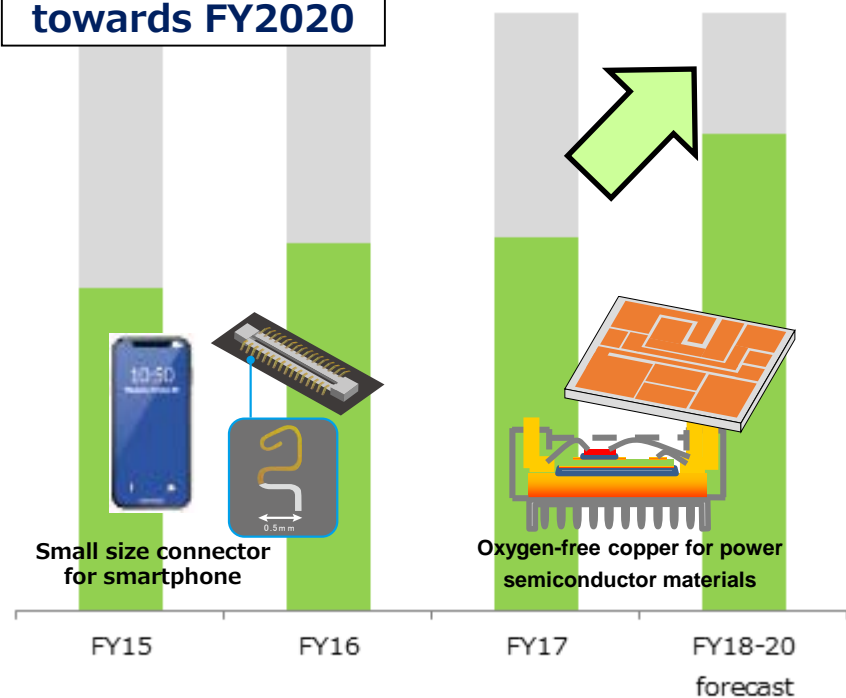
- Copper strip: Continue downsizing and raising prices for “phosphor bronze” and “other low-margin products”

Focus on original high performance materials that contribute to IoT, automotive (CASE), robotics and AI fields

- Copper foil: Focus on “highly functional foil” that contributes to faster transmission and greater storage of information data

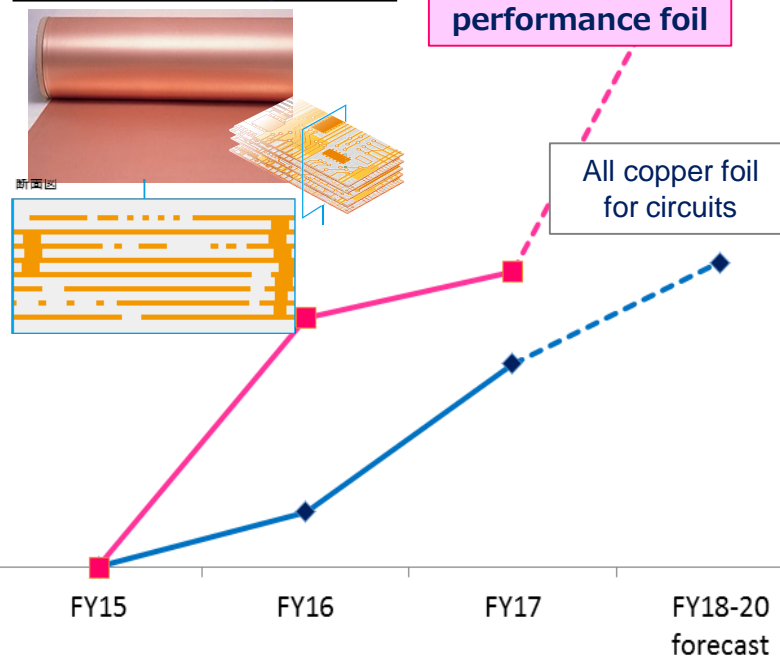
Change in the profit composition ratio of value-added products

Steady increases towards FY2020



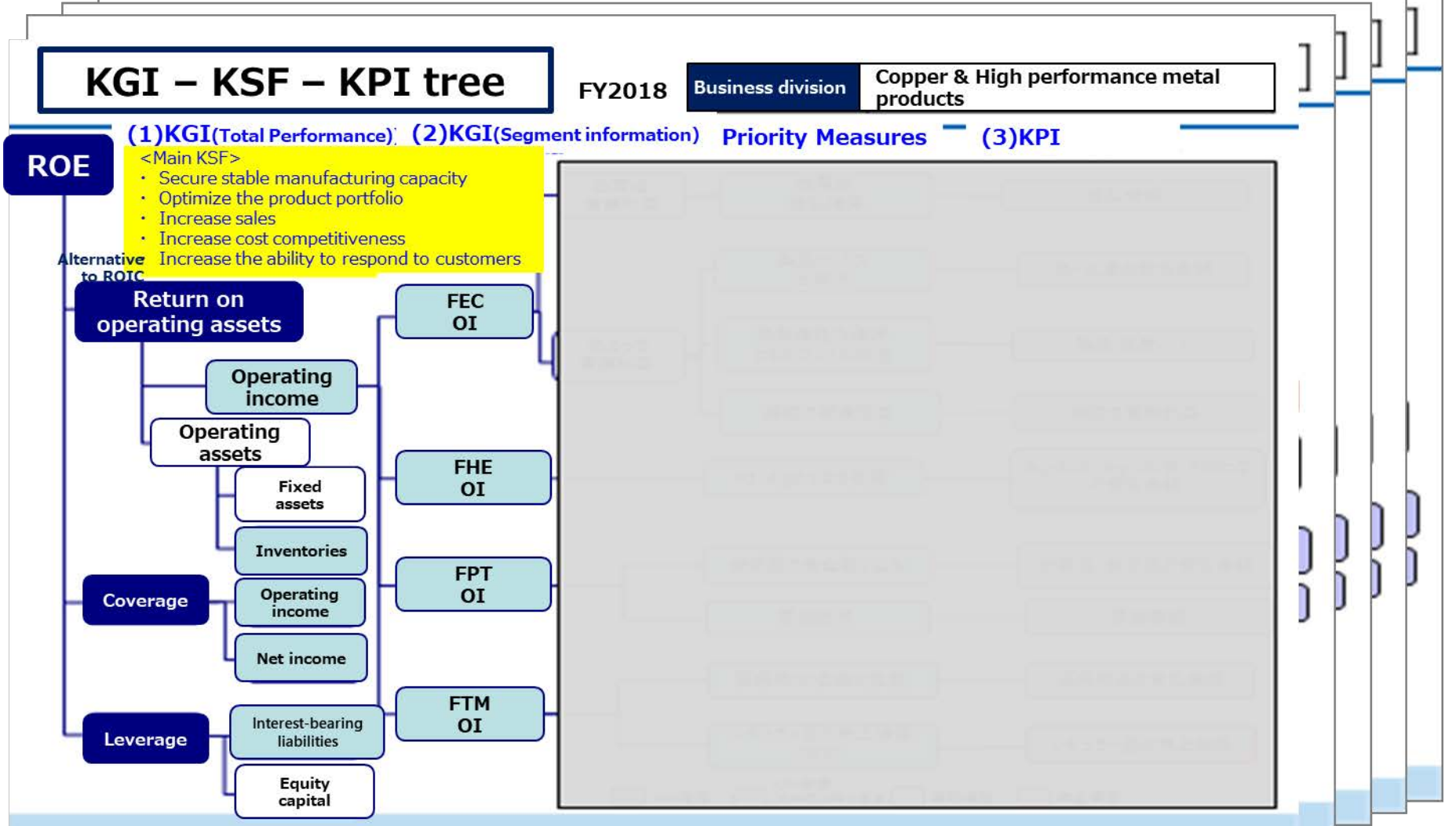
Profit growth (Copper foil for circuits)

Growth of highly functional foil will drive the increase in profits

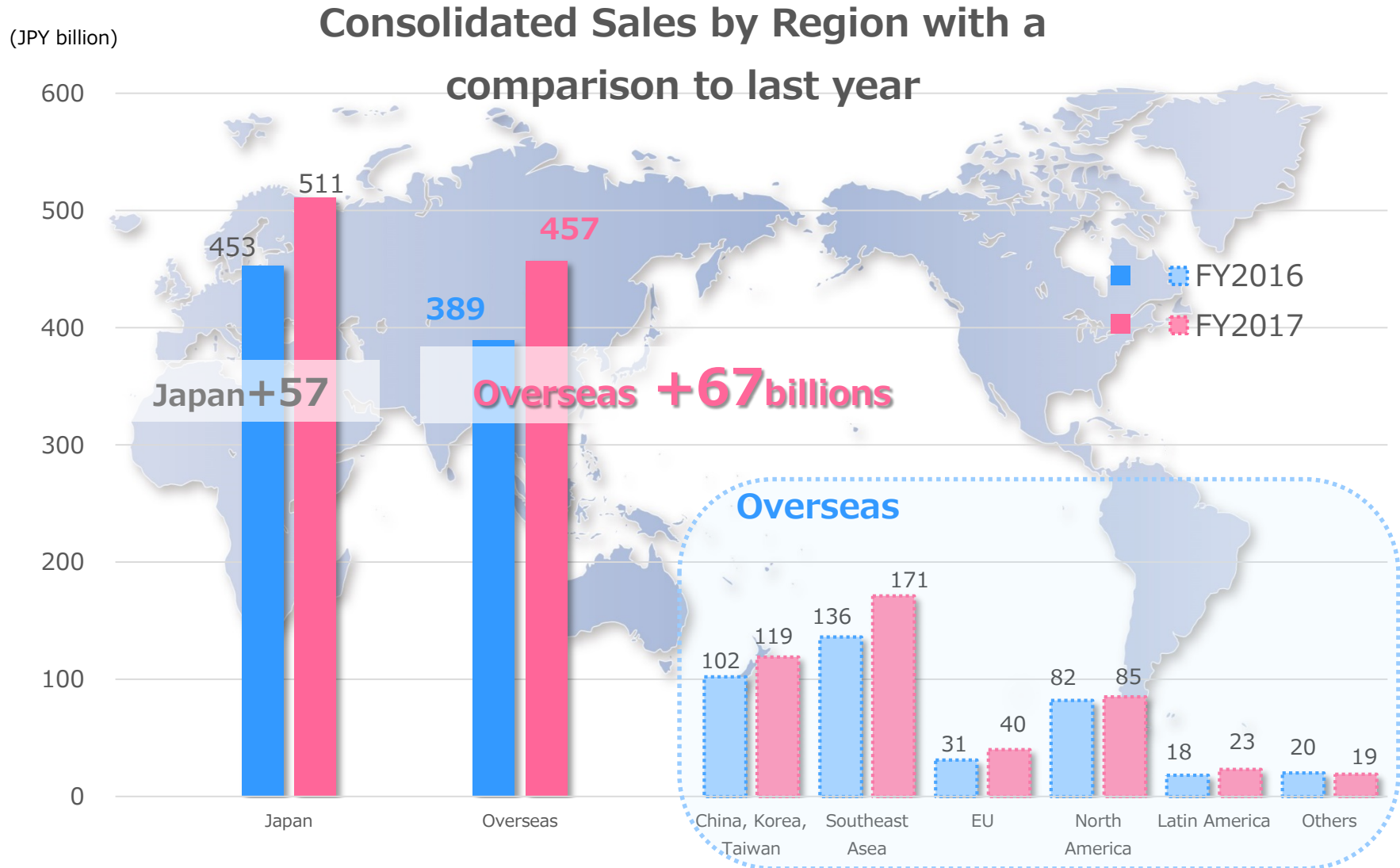


Strengthen management using return on operating assets

Thoroughly conduct KPI management with an awareness of return on operating assets at all business divisions



Consolidated sales by region



Steps to developing "regional strategies"

※From the May 2017 Mid-term Management Plan progress presentation materials

Matrix of strategies/challenges by region for each business division/group

...	CHN, KOR TWN	SEA	North America	Latin America	...
D product					
C product					
B product					
A product					
a product	○		●		
b product		○		●	
c product					
:					

<Successful segment>
Market segment, growth rate, our market share, competitor benchmarks, sales channels, distribution channels, personal connections (customers/industries), KSFs

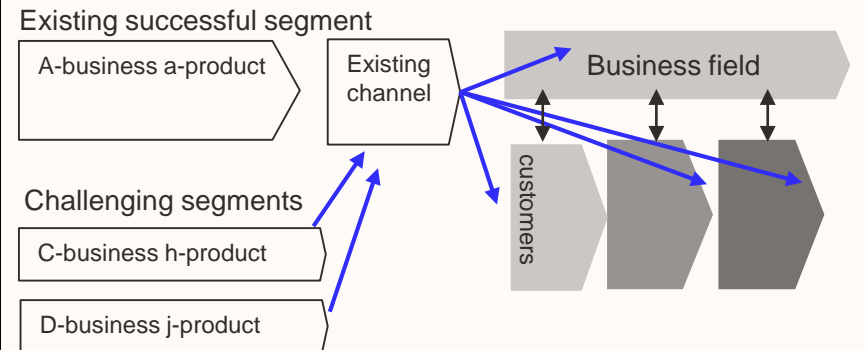
<Underperforming segment>
- Market and growth rate are attractive
- Problem with expanding trade area

- ① Horizontally analyze the strengths and issues by business
- ② View from the perspective of using Group synergies to overcome the high hurdles in each business (vertical line)

Pursue group synergies by each region

	CHN, KOR TWN	SEA	...
Advantages	A-business a-product	A-business b-product B-business d-product
Challenges	C-business h-product D-business j-product ...	D-business k-product
Initiatives	Use A-a channel	Use A-b channel

Ex.) Synergies by value chain & accounts



Key person (Customer·Business field), Supply chain, J V partners ...etc.

Fully utilize the strengths of each region!

What is the regional strategy?

- ✓ With the aim of maximizing Group profits, based on the attributes of each region, utilize the strengths of each business within the Group to construct business models for pursuing synergies and providing mutual support

1 Global account attack model

Targeting customers who have a global value chain, use the existing pipelines to participate in other businesses

2 Customers' competitor's value chain attack model

Expand the value chain participation model for existing customers to the value chains of competitors

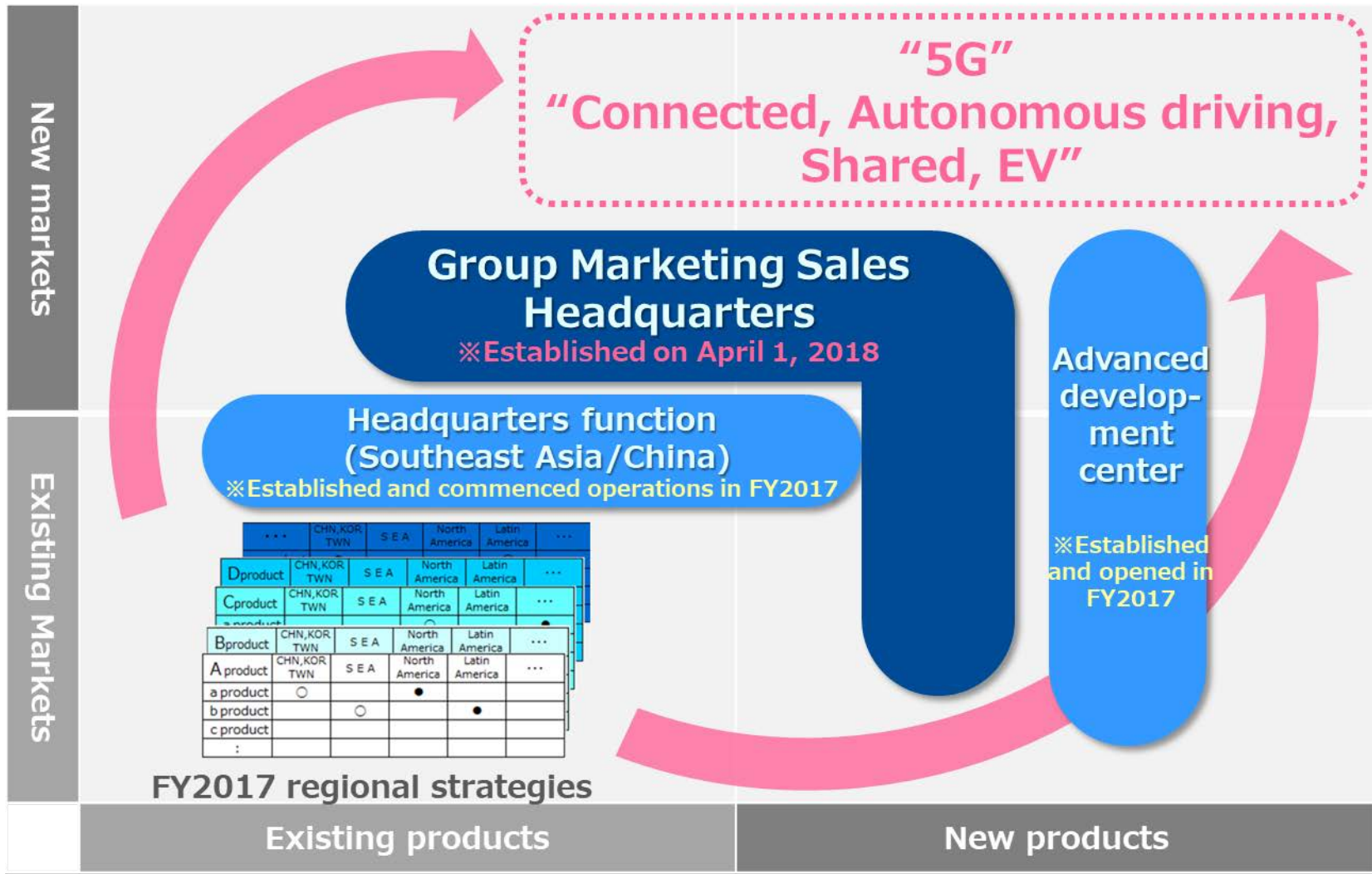
3 Strengthen promising products model

Develop new markets and support increased sales around the world for the promising products of affiliate companies

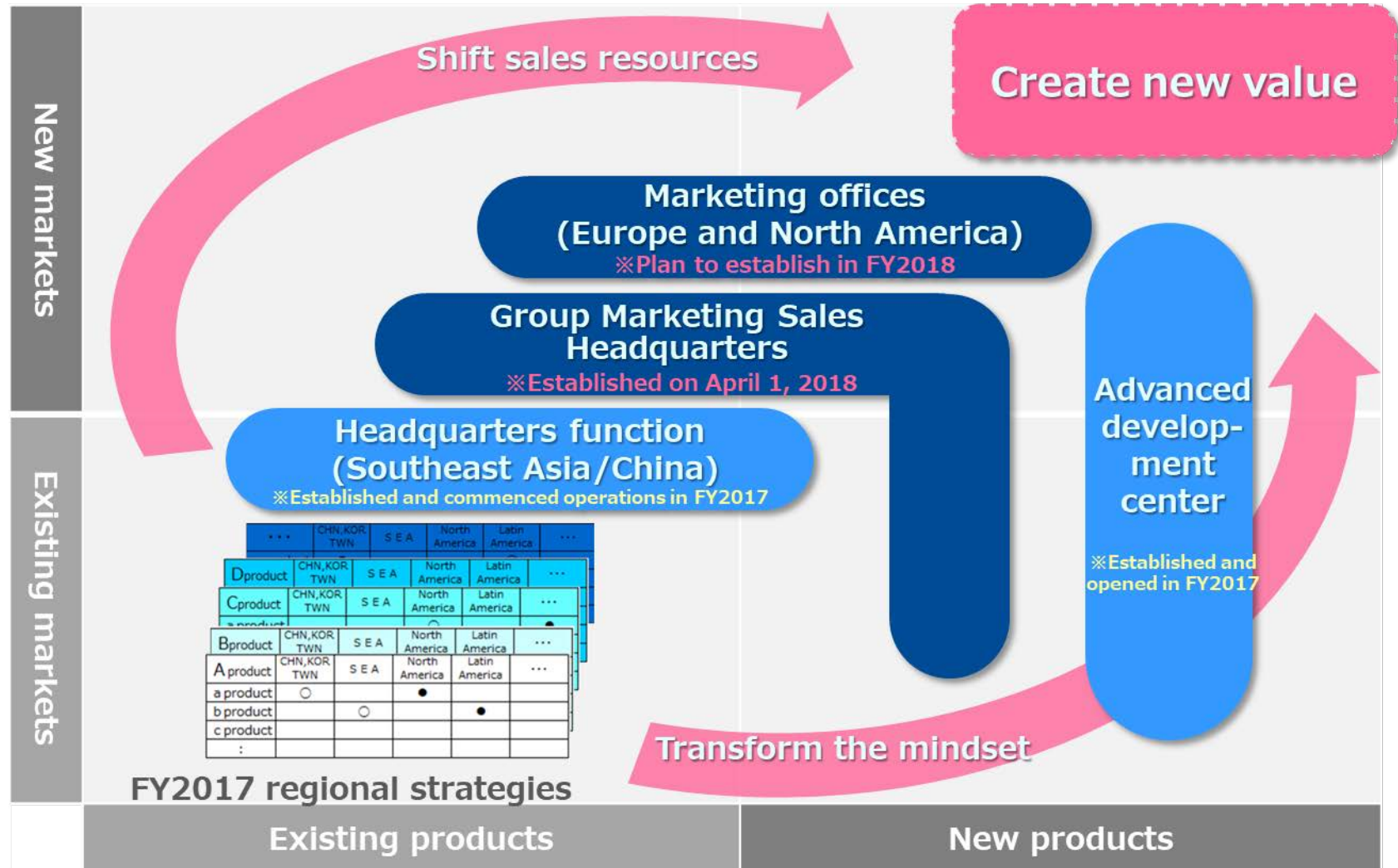
4 Global expansion of the business scheme model

Expand the business schemes that are succeeding in particular regions to other regions

Through “regional characteristics” x “communication, connection and storage” technology, create value in new domains

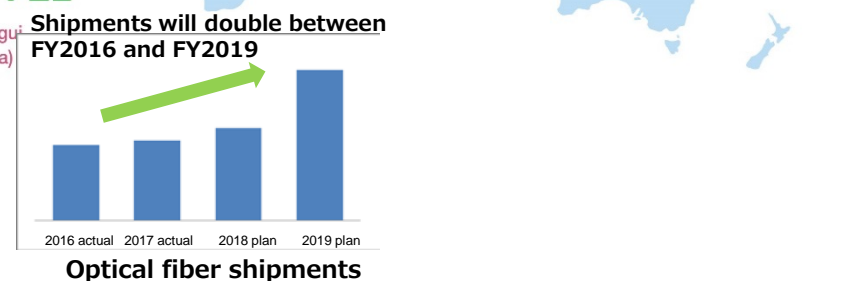
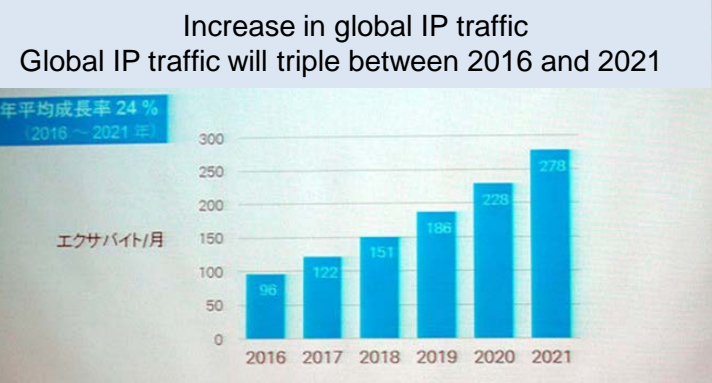
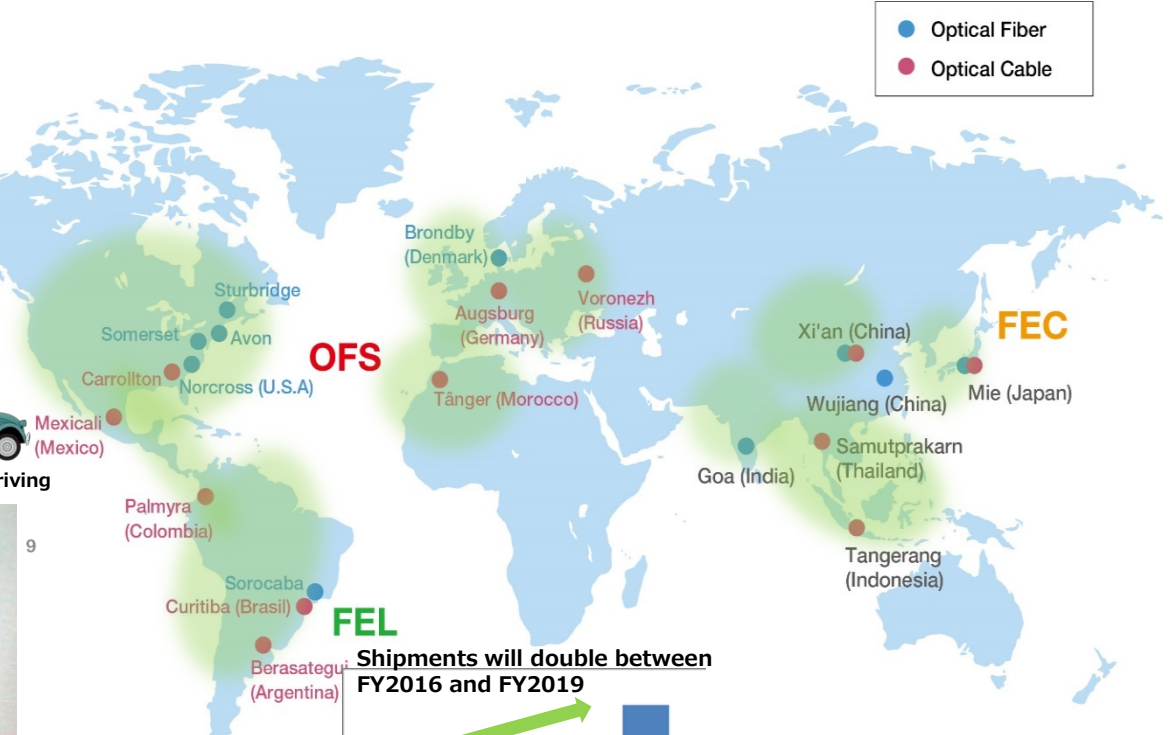
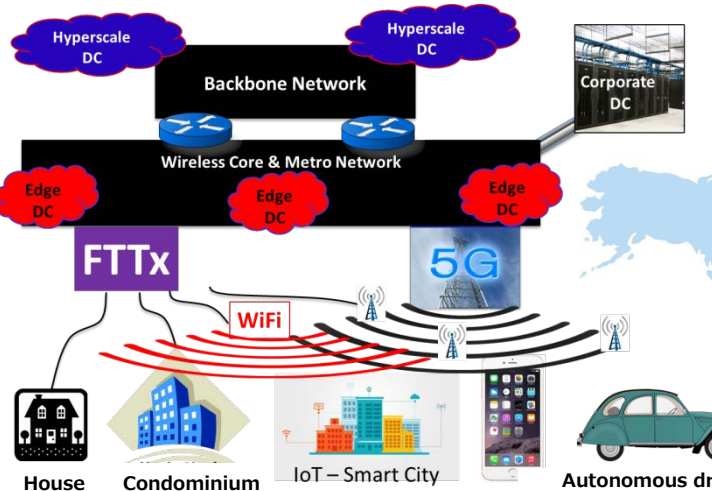


Evolve marketing from “tangible sales” to “intangible sales”



Based on strong relationships with excellent customers, expand the business in line with the robust market growth

*** Clarify the key regions: Particularly focus on North America, Central America, South America, EMEA, India and Southeast Asia**

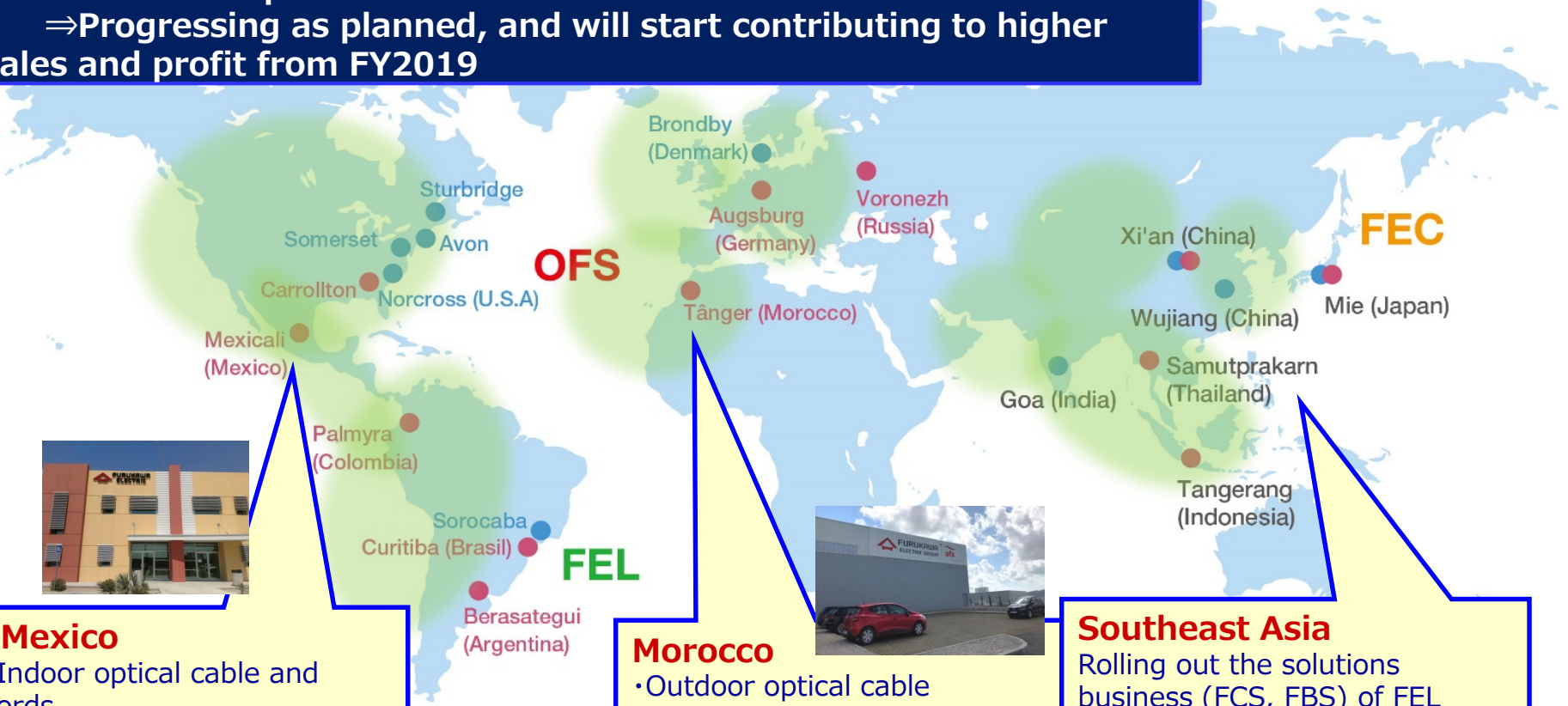


Source : Cisco Visual Networking Index (VNI) Report August 3, 2017

Expand the optical fiber and cable business

◆ Concluded a long-term supply agreement with the US based CommScope
 ◆ Increase the capacity of optical fiber and cable production announced in September 2017
 ⇒ Progressing as planned, and will start contributing to higher sales and profit from FY2019

● Optical Fiber
 ● Optical Cable



Mexico

- Indoor optical cable and cords
- Connectivity

(Start of mass production: October 2017)

Morocco

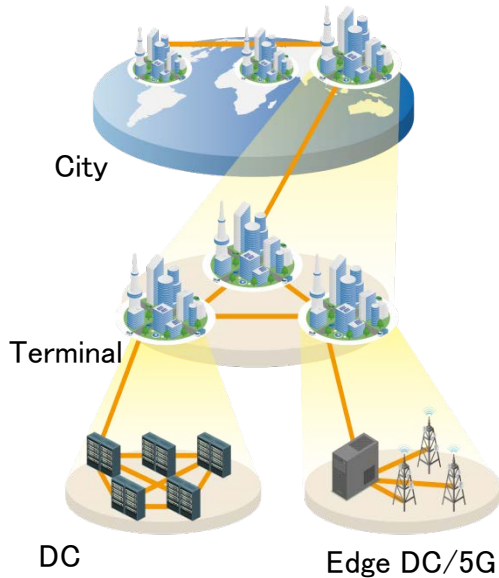
- Outdoor optical cable
- Connectivity

EMEA (Europe, Middle East and Africa)
 (Start of optical cable mass production: April 2018)

Southeast Asia

Rolling out the solutions business (FCS, FBS) of FEL based in Brazil

Market requirements and changes



Long distance: ~1000km

(ITLA/excitation light source)
Expanded bandwidth (C→C+L band)
Higher output

Metro: >80km

(ITLA/excitation light source)
Smaller/denser,
Lower power consumption,
Narrower linewidth

Client: 0.5~80km

(Other light source for communications/ excitation light source)
Smaller, less expensive,
Lower power consumption.
Expanded range of applicable environments

Furukawa Electric

Long distance and Metro

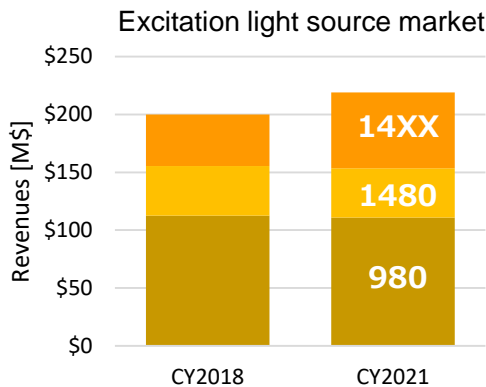
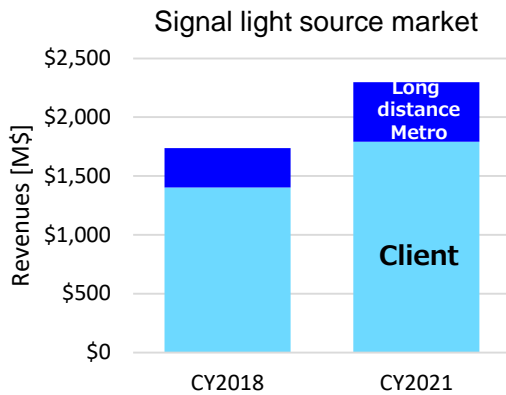
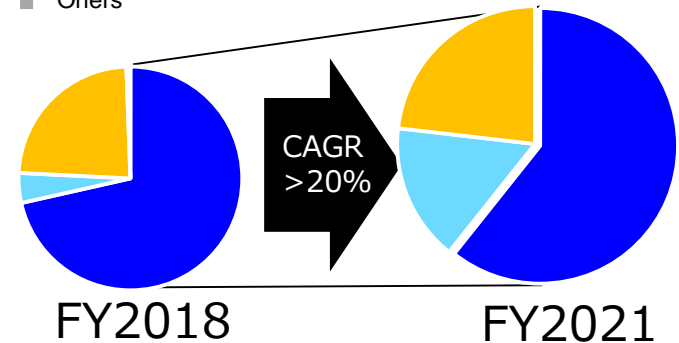
- ✓ Increased demand for 14xx light source for expanding wide bandwidths
- ✓ Increased demand for L bandwidth products
- ✓ Increased demand for small, high performance μITLA

Client

- ✓ Increased demand for products with a wide range of applicable environments

Sales ratio of products for optical communications

- Long distance and Metro
- Client
- Excitation
- Others



Source: Ovum report - Total OC Forecast Spreadsheet: 2016-22

Rollout the solutions business

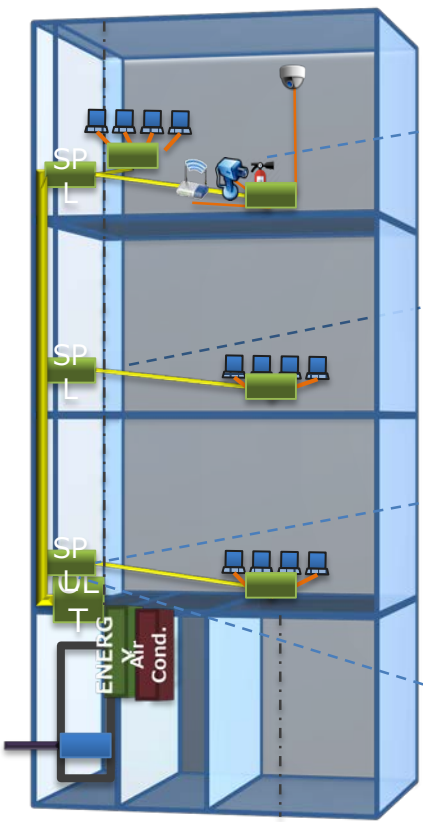
(Comprehensive proposals for building communication networks)

★ Expand the solutions business model of the Brazilian company FEL to Southeast Asia

In addition to cables and other related products, provide various services ⇒ Increase the value to the customer



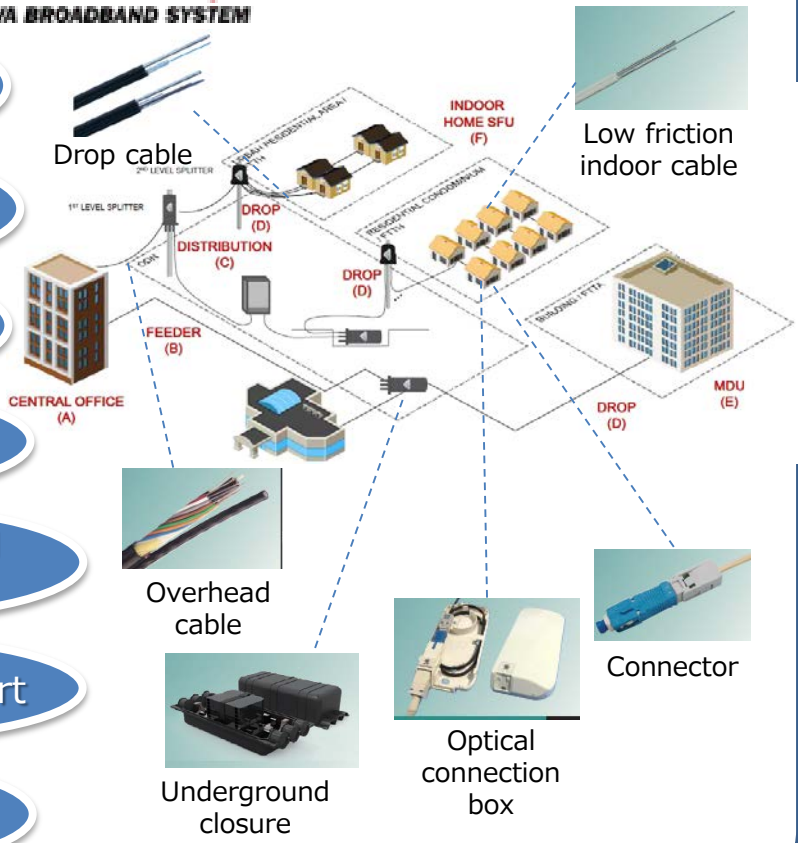
LAN solutions



- Patch cord, connector
- Optical LAN cable
- Splitter
- Terminating device



FTT x solutions

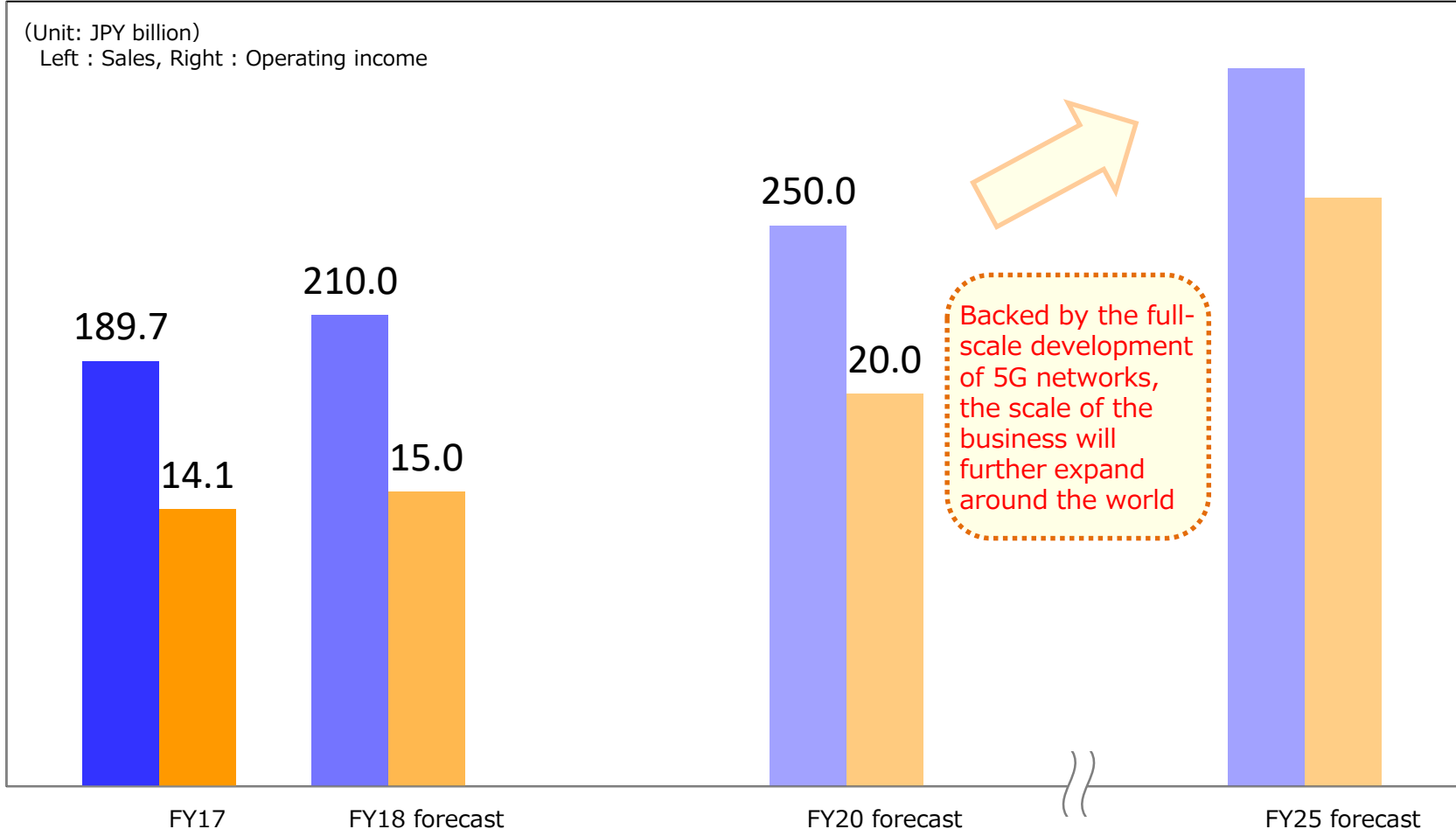


- Drop cable
- Low friction indoor cable
- Overhead cable
- Underground closure
- Connector
- Optical connection box

- Customer training
- Funding
- Factory inventory
- Showroom
- Partner with local sales companies
- Technical support
- Logistics

Communications Solutions – Sales and operating income forecast

From FY2019, realize the benefits of investing in increased production in the optical fiber and cable business, and optical devices (FITEL business) will contribute to the profit growth



Energy Infrastructure – Future image of electric power supply in Japan

Secure the ability to make adjustments in response to the introduction of renewable energy
Moving into an era in which it will be necessary to respond (storage battery, hydrogen, etc.) to decentralized supply

Current

Supply primarily from large scale thermal and nuclear power stations

2030

Renewable energy will become a major source of power

(Component ratio of renewable energy: 22~24%)

2050

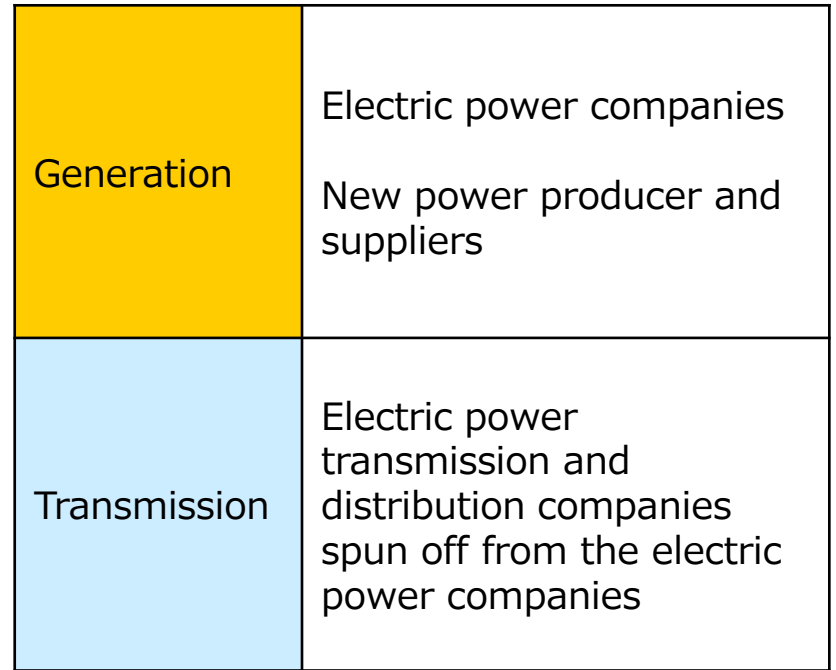
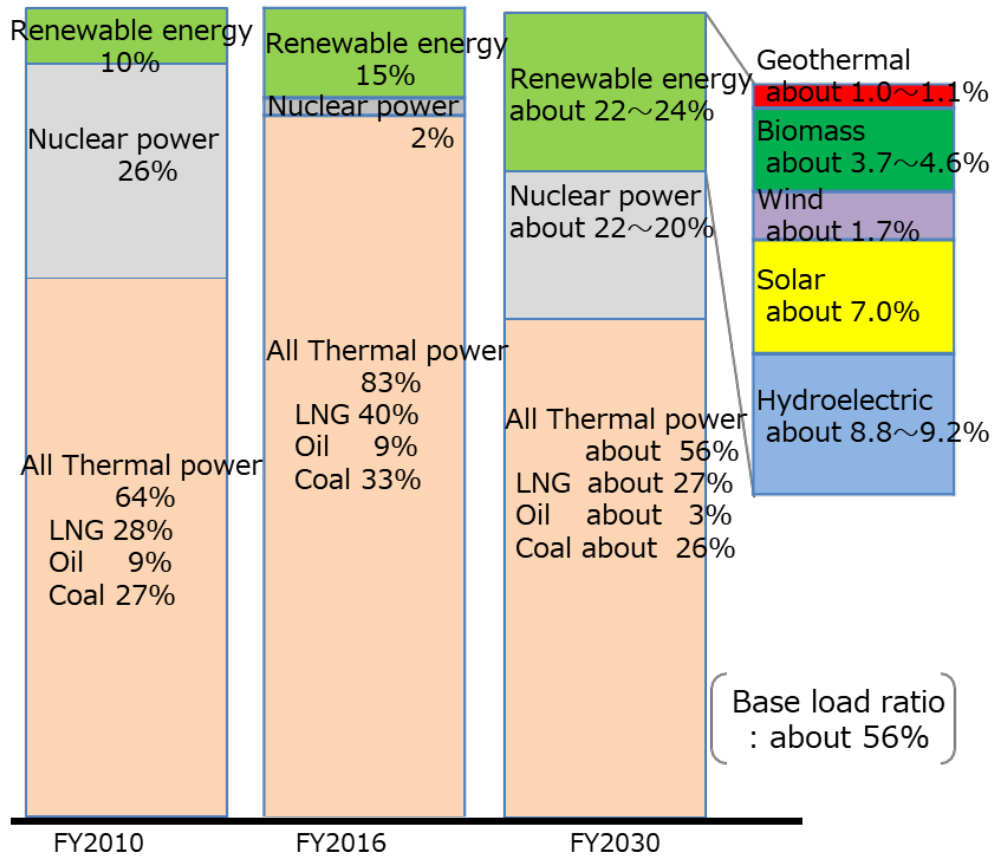
Carbon-free electric power network



Energy Infrastructure – Energy mix in Japan, and separation of power generation and transmission

**Changes in the electric power supply composition will expand nationwide
⇒ Securing the reliability of the transmission network will be an important issue**

<Power generation composition>



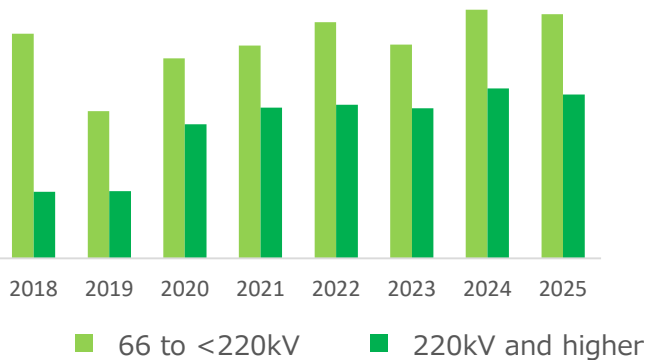
1.065 trillion kwh
(Electricity demand + transmission loss, etc.)

Source: Policy issues and form of the next generation electric power network in the age of large-scale renewable energy use
Agency for Natural Resources and Energy, December 18, 2017

Energy Infrastructure – Power cable demand forecast

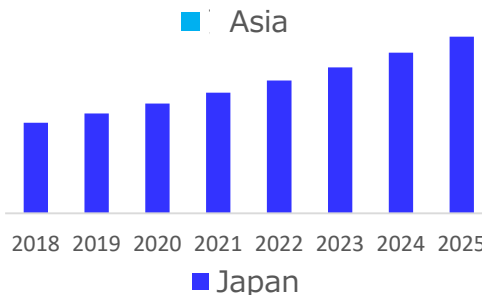
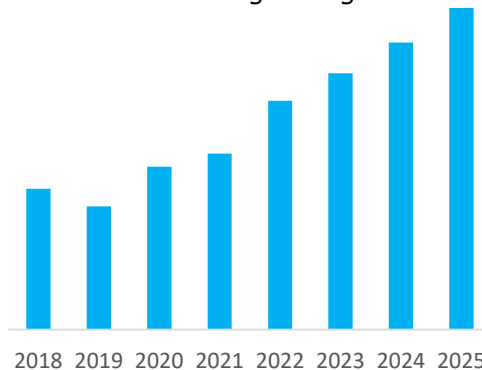
Japan underground cable

- Firm demand will continue over the medium to long-term
- In the ultra high voltage field, too, demand will be strong, including demand for the replacement of OF cable



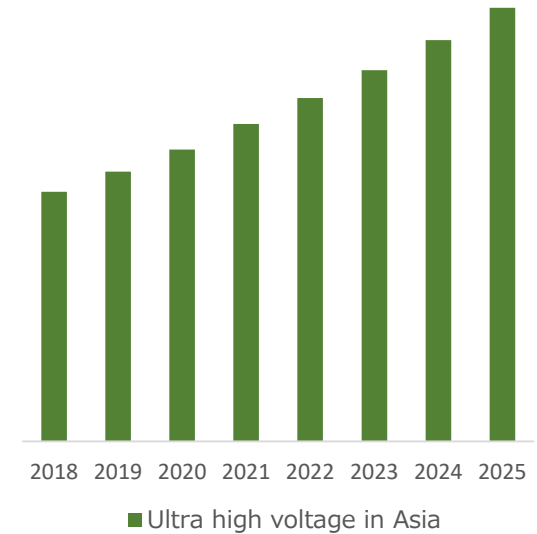
Submarine cable (Asia, Japan)

- Demand will significantly increase, including cable for regional interconnections and offshore wind projects
- In Japan, too, demand will grow at an annual rate of 10%, mainly as a result of offshore wind projects
- ※Currently, a number of offshore wind projects are being planned, and sales activities are being strengthened



Overseas underground cable (ultra high voltage)

- In Asia, backed by robust demand for energy, the demand for underground ultra high voltage cable will grow at an annual rate of 8%



(Our assumption)

Energy Infrastructure

– Power cable business strategy

While demand is expected to increase over the medium to long-term, strengthen the business utilizing the advantage in ultra high voltage cable technology

	Demand trends and our strategy	
Japan underground cable	<ul style="list-style-type: none"> • Among electric power companies, <u>demand for upgrading from OF cable to CV cable</u> (demand will continue until around 2045) • <u>Ultra high voltage cable technology and the ability to perform the construction work</u> are key points 	Secure a stable foundation for the business
Submarine cable (Japan & overseas)	<ul style="list-style-type: none"> • Demand will steadily grow over the medium to long-term • <u>In Asia and Japan</u>, a large number of renewable energy project plans, such as offshore wind power projects, are being advanced • Need to <u>accelerate technological development of long length, high capacity cable and increase manufacturing capacity</u> 	Secure opportunities for future growth
Overseas underground cable	<ul style="list-style-type: none"> • Large market, and we also has <u>experience delivering many ultra high voltage cable shipments to Asia and the Middle East</u> • Need the <u>capability to respond to increasing cost competition</u> Utilizing the sites in China is a key point 	Increase the presence in Asia

Energy Infrastructure

– Power cable business strategy

	FY2025 endpoints as well as current situation and initiatives
Japan underground cable	<p>Share of the ultra high voltage market in Japan– 50% or more</p> <ul style="list-style-type: none"> •Longtime results and reliability as a leading Japanese ultra high voltage cable manufacturer ※Also greatly contributing to emergency situations, such as restoration work •Have received an order for a major project worth about JPY 5 billion and are currently manufacturing the products •Based on expectations to receive large orders worth more than JPY 15 billion for the replacement of OF cable, plan to start manufacturing this fiscal year
Submarine cable (Japan and overseas)	<p>Share of the submarine cable market in Japan – 50% or more</p> <ul style="list-style-type: none"> •Based on current expectations to receive orders totaling over JPY 15 billion for multiple renewable energy projects, plan to start manufacturing this fiscal year •With the aim of acquiring additional orders for future projects, strengthen sales activities from a medium to long-term perspective <p>Share of the submarine cable market in Asia – 30% or more</p> <ul style="list-style-type: none"> •Increase name recognition in Asia through deliveries of ultra high voltage underground cable and submarine cable •With the aim of acquiring orders for renewable energy projects such as offshore wind power that are expected to take shape in the future, strengthen the sales activities

Initiative for strengthening the sales activities (Image)

Category	Customer	Voltage	...	Bid timing	Order probability
Underground cable	○○	400kV		–	Order received
Submarine cable Offshore wind power	○○	66kV		2021	A
...	Medium to long-term order management				

Expand

Working Group
(Sales, manufacturing, construction, technology, research, planning)


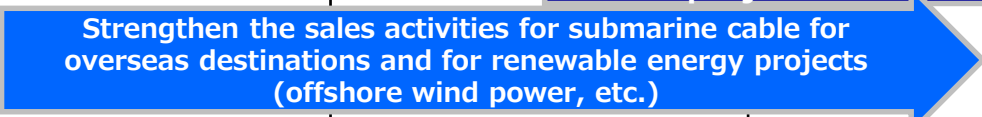


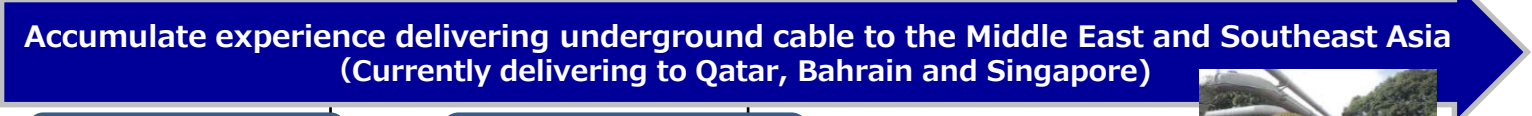

Initiatives for increasing the orders received
 Increase manufacturing capacity⇒ Facilities investment strategy
 Necessary technological development⇒Research and development plan
 Technological appeal⇒Obtain international standards certification

etc.

Energy Infrastructure

– Roadmap for the power cable business


Work to acquire orders, and aim to become the leader in submarine cable in Asia

	FY2017	FY2018-2020	FY2021-2025
Japan underground cable	<p>Establish a production network Upgrade the facilities Secure and educate personnel</p>	<p>Electric power companies – Demand for upgrades to aging facilities</p> 	
Submarine cable (Japan and overseas)	<p>Strengthen the sales activities for submarine cable for overseas destinations and for renewable energy projects (offshore wind power, etc.)</p> 		<p>Deliver submarine cable for renewable energy projects and submarine cable overseas</p>  
Overseas underground cable	<p>Accumulate experience delivering underground cable to the Middle East and Southeast Asia (Currently delivering to Qatar, Bahrain and Singapore)</p> 		
	<p>Restructure the sites in China</p>	<p>Strengthen cost competitiveness (utilize the sites in China)</p>	

In order to respond reliably to the orders received, strengthen the production network and technology development

Capital investment: About JPY 15 billion

Increase the submarine cable manufacturing capacity at the Ichihara Plant (Long length, high capacity cable)



Ichihara Plant (Chiba Prefecture)

<Research and technology development>
Next generation cable materials
Cable manufacturing technology, connector components

Energy Infrastructure – Vision for the power cable business

<Major initiatives>

Increase manufacturing capacity

Aggressive capital investments

Reinforce personnel

Research and technology
development, etc.

<FY2022~2025>

Main player in Asia

**Focus on ultra high voltage in Japan
and on ultra high voltage and
submarine cable in Asia**

[Target endpoint]

**Share of the ultra high voltage market in
Japan – 50% or more**

**Share of the submarine cable market in
Japan – 50% or more**

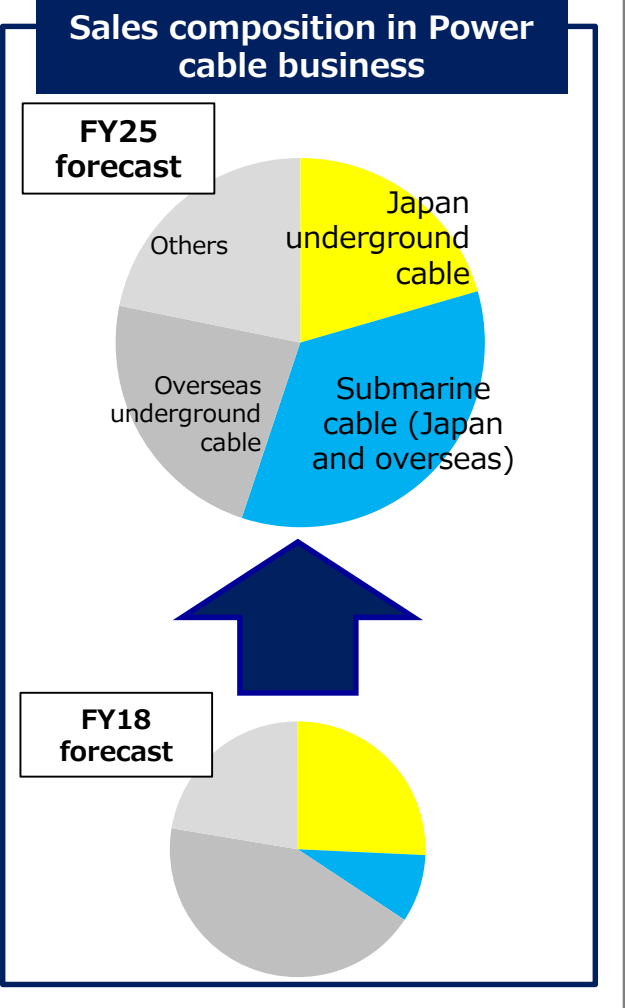
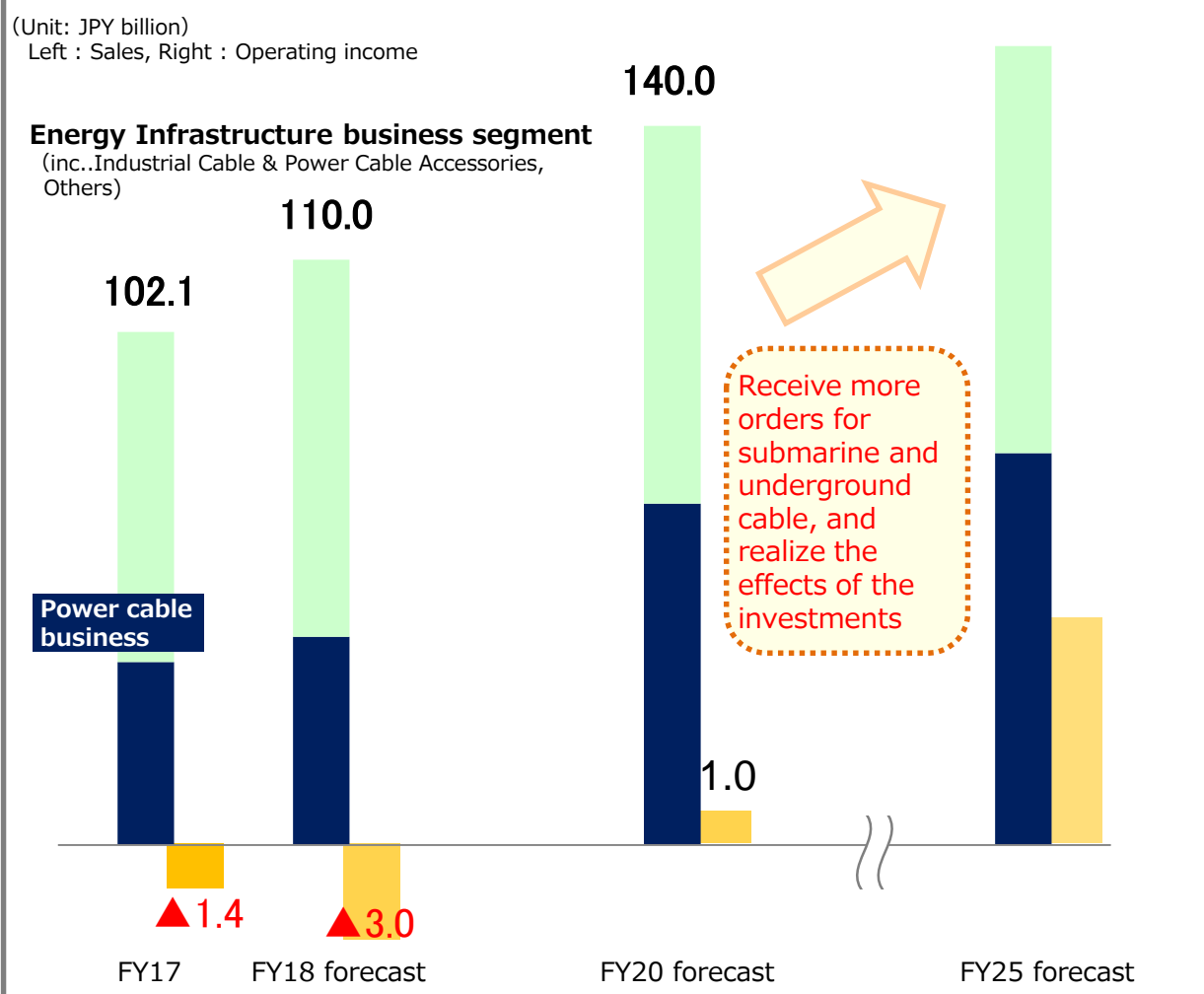
**Share of the submarine cable market in
Asia – 30% or more**

<October 2016>

**Took over the power cable
business from VISCAS**

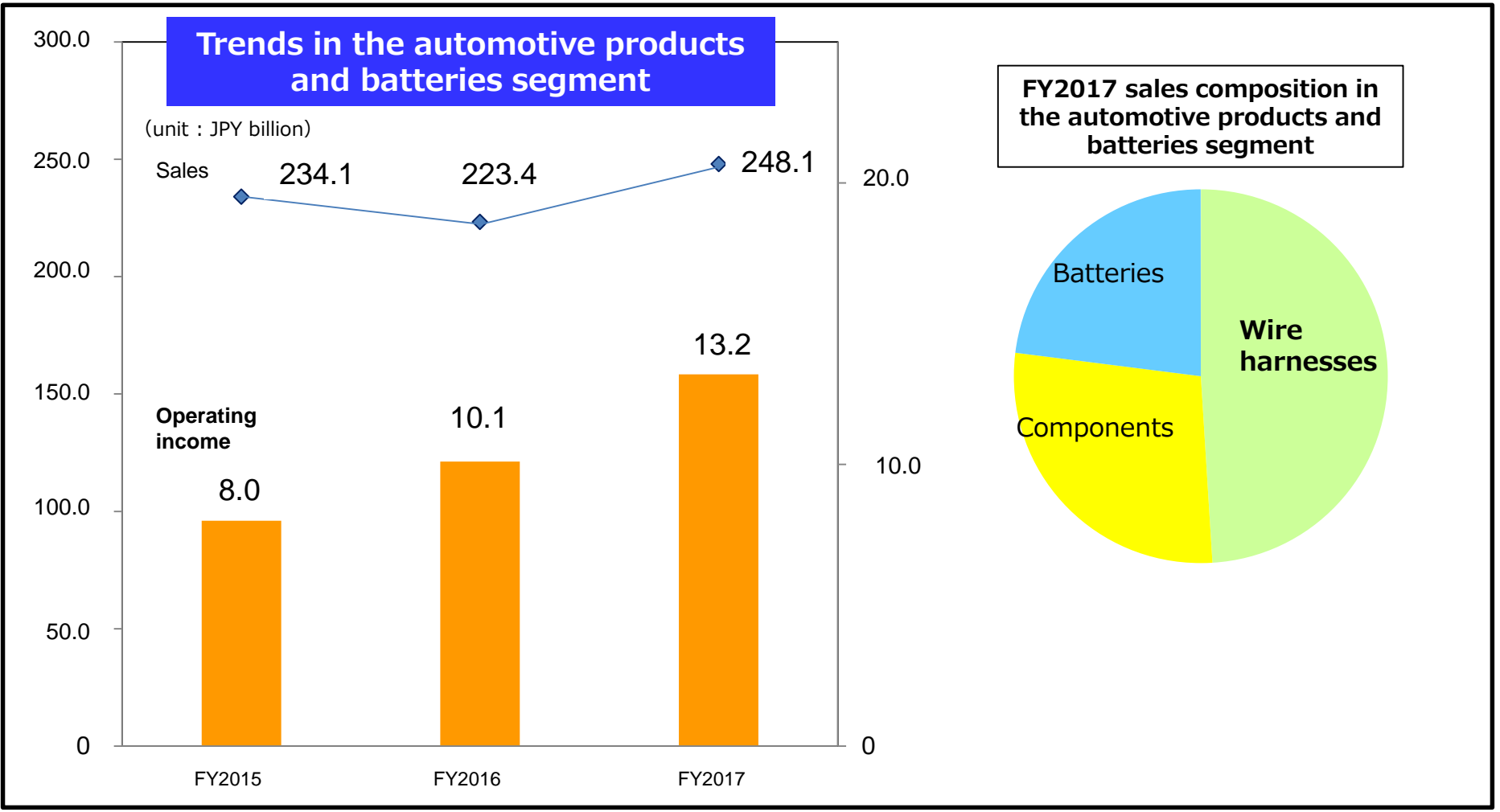
Energy Infrastructure – Sales and operating income forecast

In the power cable business, while basing the business on the supply of underground cable to electric power companies in Japan, work to expand sales of submarine cable and increase profits


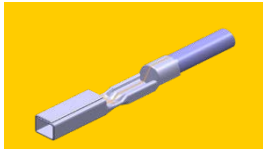



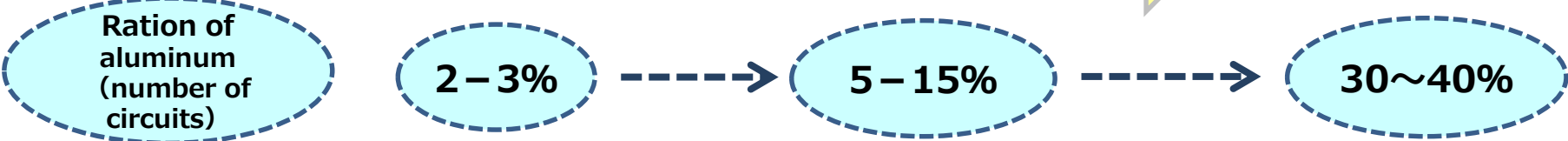
Automotive Products and Batteries – Sales and operating income results

In addition to components and batteries, wire harnesses account for about 50% of sales and are also contributing to increased operating income



Utilize the company's strength in aluminum harnesses to respond to requests for weight reductions, and aim to increase profitability by strengthening harnesses and in-house component production

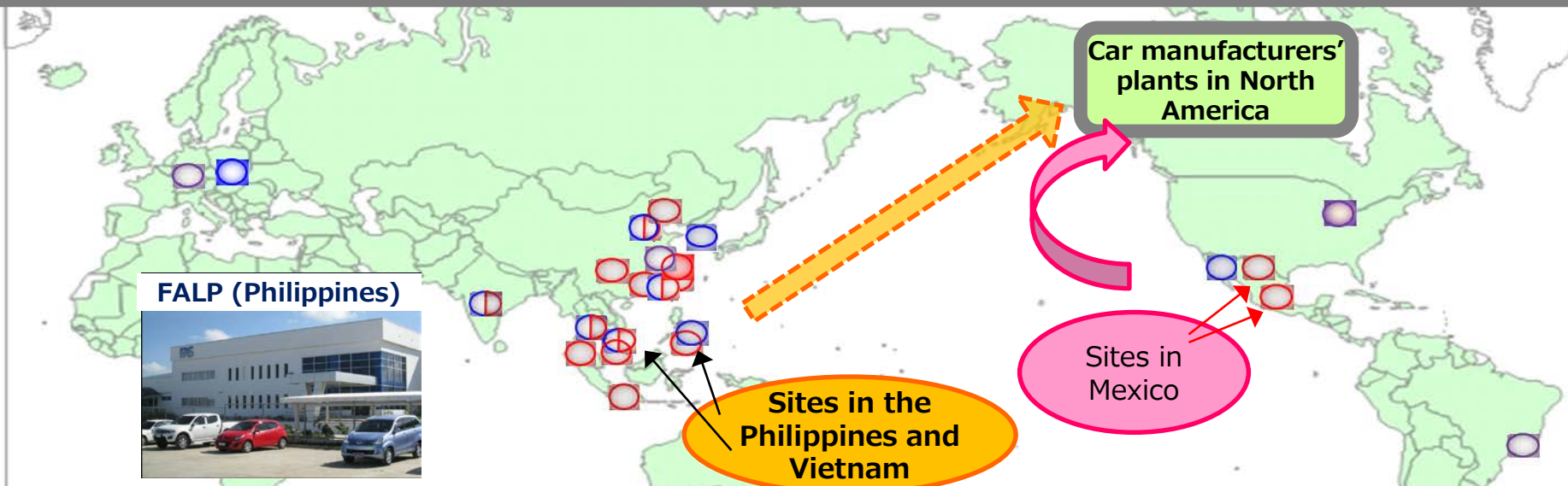
	FY2017	FY2018~2020	FY2021~
Wire harnesses 		<p>Increase sales of aluminum harnesses</p> <p>Strengthen the production network – Expand and increase the capacity of production sites in Asia (Philippines and Vietnam)</p> <p>Increase productivity through the introduction of automation</p>	<p>Full-scale deliveries for global models (Already received orders from 3 companies for 3 models)</p>
α terminal 		<p>Expand the lineup of terminals (2015: 8 products → May 2018: 25 products → 2021: 42 products)</p> <p>Start sales of automatic cutting and crimping machines (to connector and harness manufacturers)</p>	 α terminal cutting and crimping machine



Automotive Products – Strengthen the production network for wire harnesses

Respond to increased orders for global models, and expand the production sites of wire harness for vehicles destined for North America

Contribute to customers by lowering costs and increasing quality as a result of shifting from centralized production in Mexico
 ⇒ **Multi-region production network through the addition of sites in Asia**



Investment plan for the sites in the Philippines

Plan to invest around JPY 10 billion through FY2025 (Including aluminum related investments in Vietnam)

FY2018-2020: About JPY 5 billion

Acquire land, expand the factory building, install manufacturing equipment

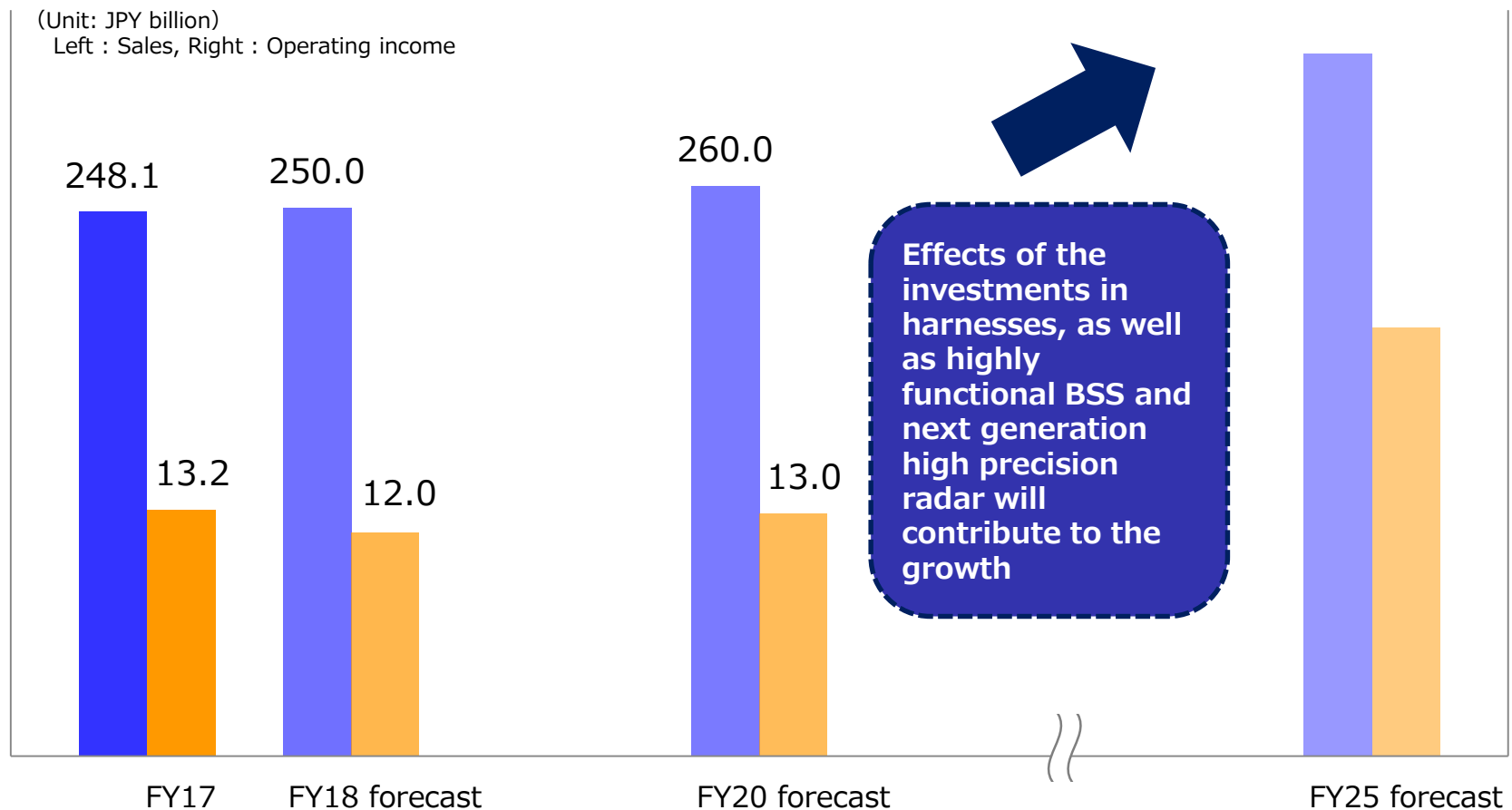
FY2021-2025: About JPY 5 billion

Successively add manufacturing equipment in accordance with the status of orders

Automotive Products and Batteries – Sales and operating income forecast

As a result of advances in vehicle electrification and autonomous driving, customer requests for weight reductions will increase

Demand for next generation radar necessary for advanced driving assist systems will also increase



Promote aggressive initiatives with the aim of increasing corporate value

■ Strengthen corporate governance

– Established the Appointment and Compensation Committee (in 2015)

- By establishing an appointment and selection process for Directors, etc., strengthen the Board of Directors oversight function

– Board of Directors effectiveness evaluation (Conducted every fiscal year since FY2015)

- Verify the level of achievement of the mid-term management plan, discuss improvements for the low-margin businesses
- Streamline deliberation through improvements to how Board of Directors meetings are conducted

■ Reform the workstyles and promote diversity

– Implement various initiatives that contribute to the acceptance of diverse human resources, workstyles and values

- TOPICS
- ✓ Selected as a constituent company in the MSCI Japan Empowering Women Index (WIN) (December 2017)
 - ✓ Designated a “Nadeshiko Brand (Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange)” (March 2018)
 - ✓ Continue to be recognized in the 2018 Certified Health & Productivity Management Outstanding Organizations (White 500)

Initiatives to strengthen ESG(2)

■ Environmental initiatives

■ Expanded use of clean energy

Hydroelectric power

Using the water in Lake Chuzenji, the Nikko Works is currently manufacturing copper strip products with renewable energy.

Energy consumption: 100 million kWh/
year
(15% of energy consumed by Furukawa Electric in Japan)



Solar power

With the aim of producing low carbon automotive products, currently considering solar power at the Mie Works, etc.

Power generation: 2 million kWh/ year
(20% of the energy consumed by the automotive products business at the Mie office)



Fuel conversion

At the Mie Works, currently converting from LPG to the more environmentally friendly LNG.

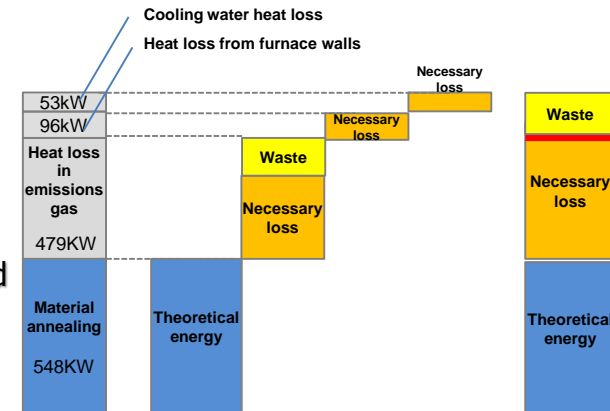
CO2 reduction: ▲4,000 tons/year
(20% of CO2 emissions at the Mie office)



■ Promote energy conservation

Make energy use visible

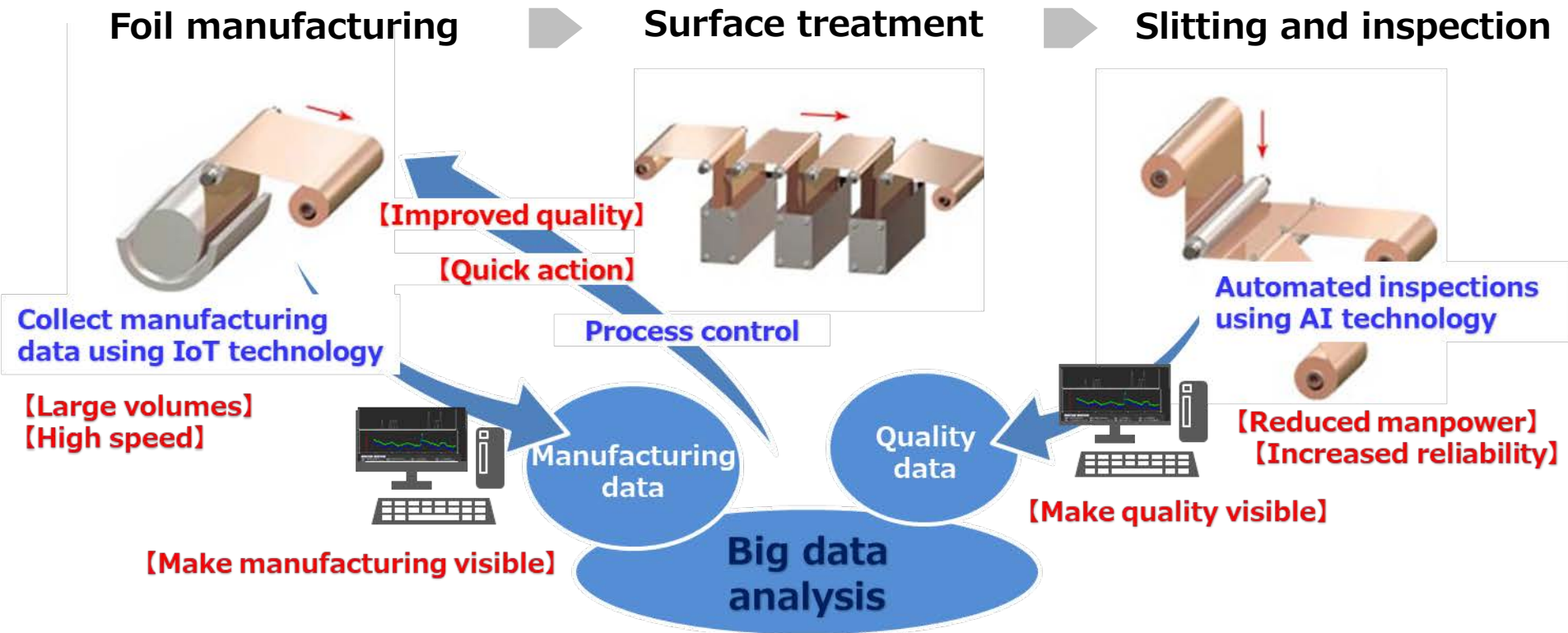
Mainly at the optical fiber, copper foil and magnet wire manufacturing sites, which use a lot of energy, illustrations showing the breakdown of energy consumption are created, and activities are being conducted to make wasted energy use visible.



■ Utilize to improve quality, reduce manpower and energy conservation

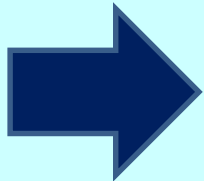
- Using IoT technology, collect manufacturing data and increasingly “make manufacturing visible”.
- Using AI technology, automate the visual inspections, and realize “reduced manpower” at the factories and “increased reliability” of the products.
- Link “manufacturing data” and “quality data”, and improve “monozukuri”.
- Promote “energy conservation activity” by visualized manufacturing energy balance using IoT technology.

■ Example of utilization in a copper foil factory



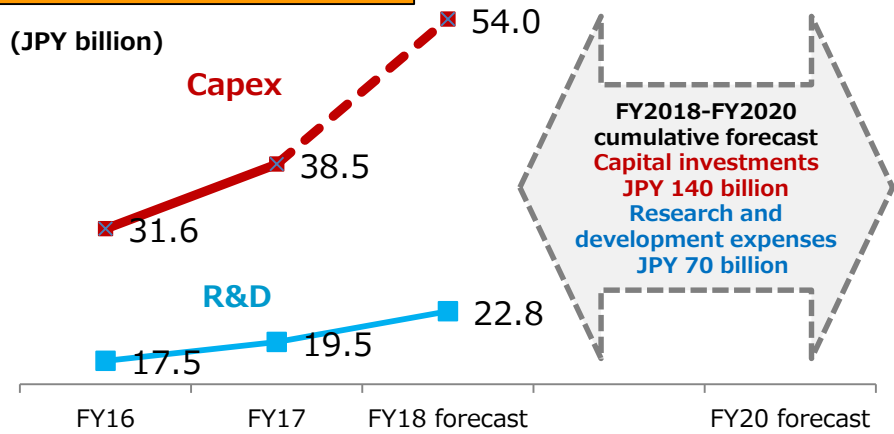
Key initiatives

- Reform low-margin businesses and products
- Create value in new domains through a regional strategy
- Strengthen growth businesses

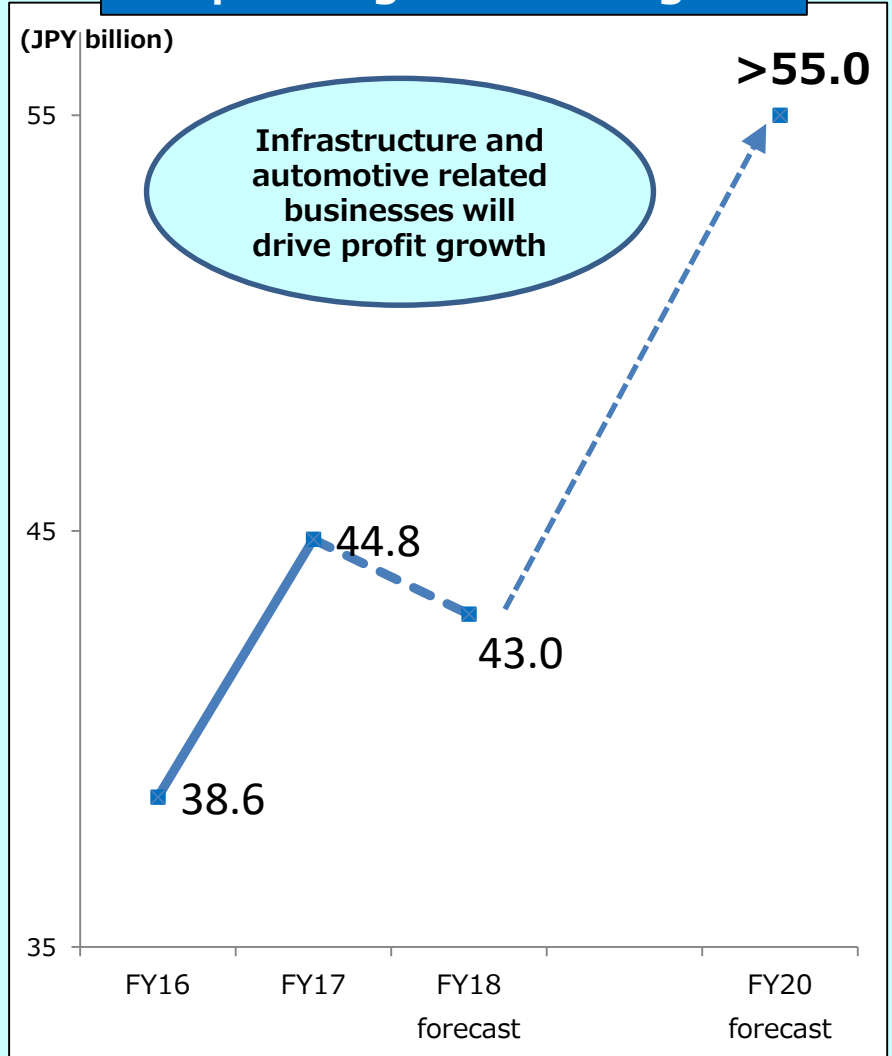


Profit growth

Growth-oriented investments

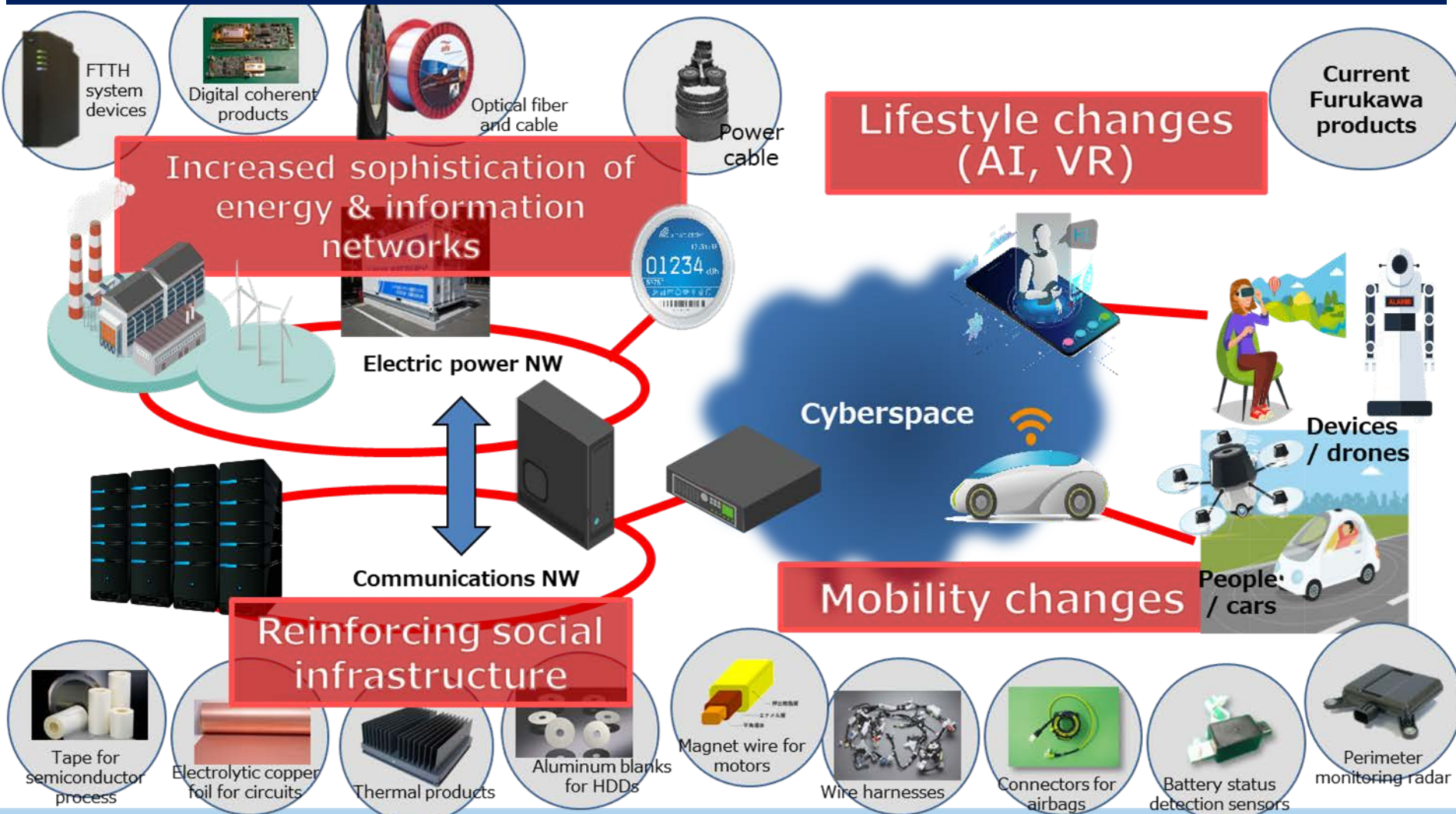


Operating income target



In conclusion

Through the communication, connection and storage of energy, information and heat, Furukawa Electric will contribute to the changes in society mainly in the areas of infrastructure, automotive products and a fusion thereof



Thank you very much
for your attention.



Appendix

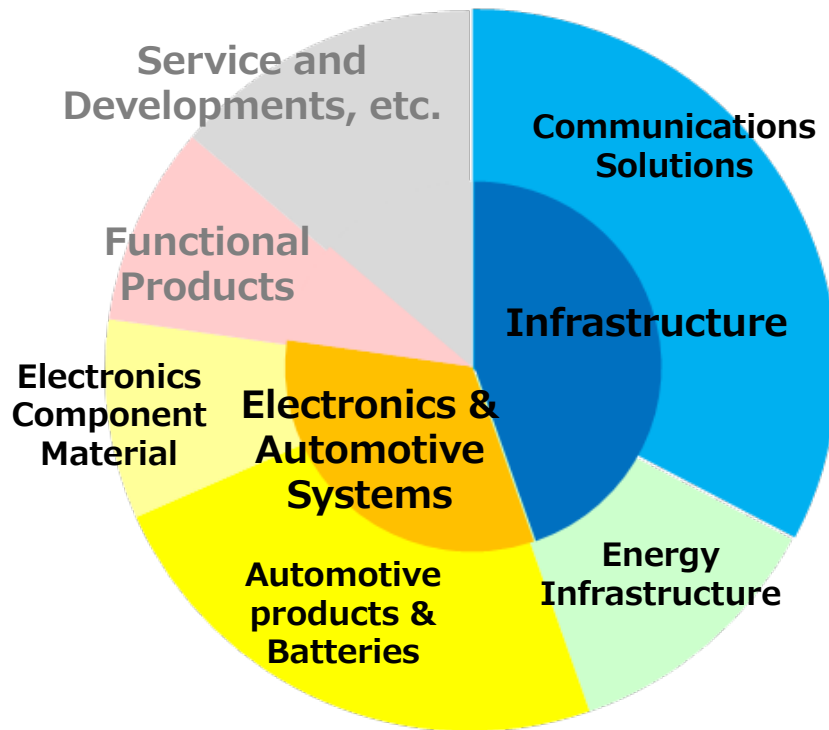
Net Sales and Operating Income by Segment **FURUKAWA ELECTRIC**

(JPY billion)

	FY2017			FY2018 forecast			FY2020 forecast		
	Net Sales	Operating Profit	Operating Margin	Net Sales	Operating Profit	Operating Margin	Net Sales	Operating Profit	Operating Margin
Infrastructure	291.8	12.8	4.4%	320.0	12.0	3.8%	390.0	21.0	5.4%
Communications solutions	189.7	14.1	7.4%	210.0	15.0	7.1%	250.0	20.0	8.0%
Energy infrastructure	102.1	-1.4	-1.4%	110.0	-3.0	-2.7%	140.0	1.0	0.7%
Electronics & Automotive systems	533.8	18.2	3.4%	550.0	17.5	3.2%	560.0	19.5	3.5%
Automotive Products & Batteries	248.1	13.2	5.3%	250.0	12.0	4.8%	260.0	13.0	5.0%
Electronics Component Material	285.6	5.0	1.8%	300.0	5.5	1.8%	300.0	6.5	2.2%
Functional Products	153.1	14.0	9.1%	155.0	13.5	8.7%	170.0	14.5	8.5%
Service and Developments, etc.	-11.4	-0.1	0.9%	-25.0	0.0	0.0%	-20.0	0.0	0.0%
Total	967.3	44.8	4.6%	1,000.0	43.0	4.3%	1,100.0	55.0	5.0%

Proactively invest in the key fields

CAPEX : JPY 140 billion

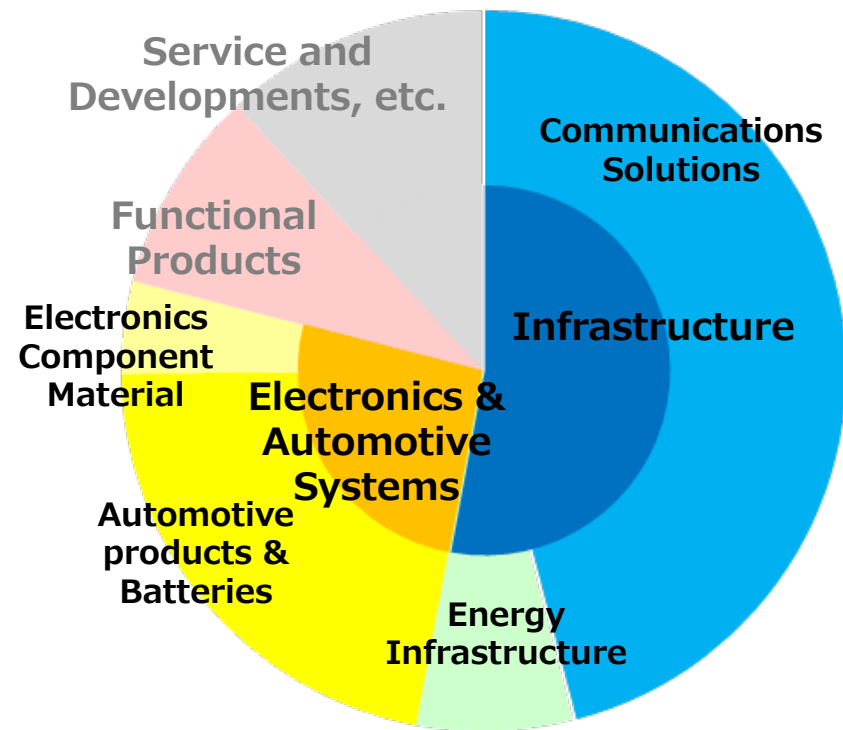


Key fields

Communications Solutions: Increase production of optical fiber and cable

Automotive Products: Increase production of onboard components and harnesses

R&D Expenses : JPY 70 billion



Key fields

Communications Solutions: Optical fiber, ITLA

Automotive Products: Aluminum harnesses, onboard radar, battery sensors