

# Business Briefing Communications Solutions business

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Furukawa Electric Co., Ltd.

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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.

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- 1. Review of the 2020 Medium-term Management Plan**
  - 2. Current status of the optical fiber and cable business and future outlook**
  - 3. Current status of the optical fiber and cable solutions business in Central and South America**
  - 4. Current status of the optical device business and future outlook**
  - 5. Future outlook of the industrial lasers business**
  - 6. Future outlook of the broadband solutions business**
- Appendix**

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

Basic policy in Furukawa G Plan 2020

Develop a global business with an awareness of the advances in 5G

Strengths

- Global production network in growing markets
- Differentiation through high performance products and technology (optical fiber & cable, digital coherent and network technology)



**United States**  
Increase rollable ribbon cable production capacity

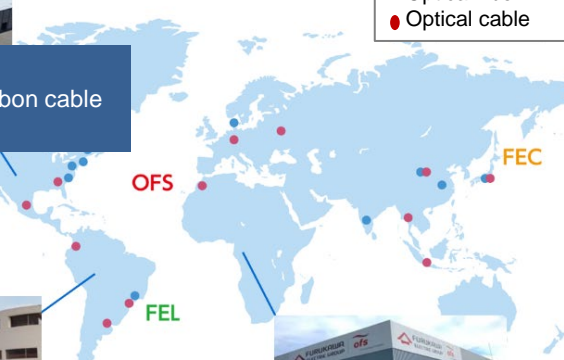


**Colombia**  
Strengthen capabilities for optical cable and connectivity products  
Respond to the izzy telecom project



**Morocco**  
Strengthen capabilities for optical cable and connectivity products

● Optical fiber  
● Optical cable



Business opportunities for Furukawa Electric in the age of 5G



Main points of focus:

- Optical fiber and cable
  - ✓ Increase optical fiber and cable production and sales in North America
  - ✓ Expand the Central and South America solutions business
- FITEL products
  - ✓ Increase ITLA (variable wavelength light source) production
  - ✓ Accelerate the industrial laser business
- Broadband
  - ✓ Enhance the lineup of network products in Japan

Provide basic technology for high speed, large volume communications

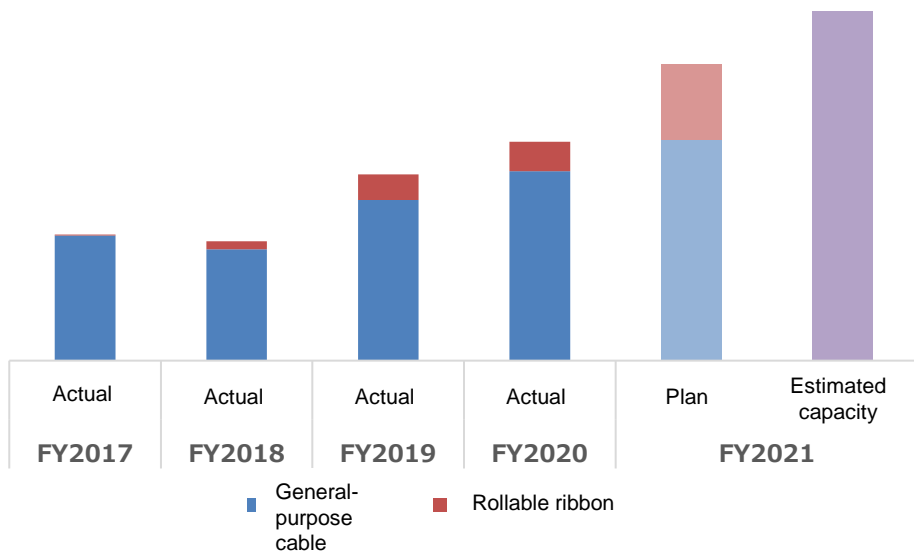


# 1. Review of the 2020 Medium-term Management Plan

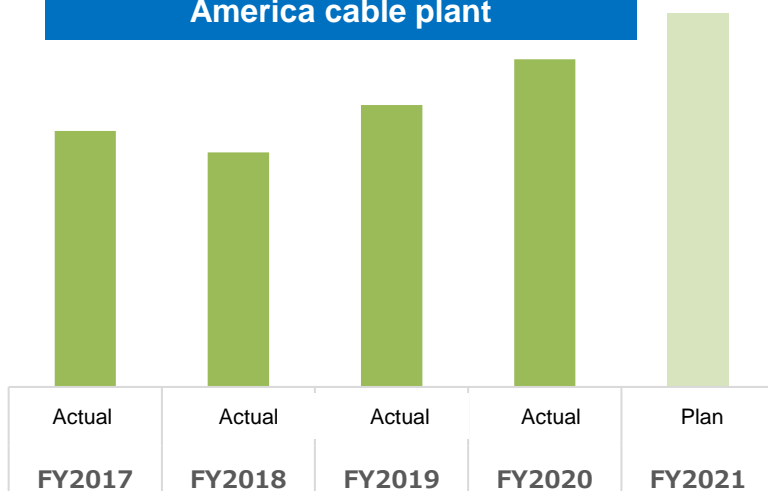
	<b>Main achievements</b>	<b>Issues</b>
<b>Optical fiber and cable</b>	<ul style="list-style-type: none"> <li>✓ Established a framework for increasing optical fiber and cable production in growing regions (Americas, Europe, Africa, India)</li> <li>✓ Expanded rollable ribbon globally</li> <li>✓ Expanded the Central and South America solutions business</li> </ul>	<ul style="list-style-type: none"> <li>✓ Increase optical cable productivity in North America</li> <li>✓ Respond to falling prices of general-purpose fiber and cable</li> <li>✓ Roll out the Central and South America solutions business to other regions</li> </ul>
<b>FITEL products</b>	<ul style="list-style-type: none"> <li>✓ Increased ITLA (variable wavelength light source) production</li> <li>✓ Full-scale commercialization of industrial lasers (develop through co-creation with partners)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Reduce ITLA costs</li> <li>✓ Quickly launch next generation ITLA products</li> <li>✓ Increase sales of industrial lasers</li> </ul>
<b>Broadband solutions</b>	<ul style="list-style-type: none"> <li>✓ Maintained the No. 1 share of FTTH systems for CATV in Japan</li> <li>✓ Developed and launched products for responding to digital terrestrial television, broadcasting high definition images and routing virtualization</li> </ul>	<ul style="list-style-type: none"> <li>✓ Develop and launch new products and systems that respond to the advances in broadband infrastructure (FTTH advances, fusion of optical &amp; wireless)</li> </ul>

## 2. Current status of the optical fiber and cable business and future outlook

### North America optical cable sales volume



### Personnel figures at the North America cable plant



### <Background>

- From FY17 H2 through FY18, orders declined and the product mix changed
  - ✓ Revised the production expansion plan (timing, facilities specifications)
  - ✓ Reduced personnel
  - ✓ Worked to increase the component ratio of rollable ribbon
- Orders rapidly recovered in FY19
  - ✓ Personnel were urgently hired, but there was difficulty in increasing capabilities of manufacturing
  - ✓ In FY20, absences increased due to COVID-19, and training of new personnel did not progress smoothly

### <Responses>

- Implement thorough measures against COVID-19 in the factory (expect increased vaccinations to improve the situation)
  - Promote new hiring and provide training
  - Through increased support from Japan, continue to improve the processes and quality
- ⇒ Productivity is increasing
- In FY21, sales volume is planned to increase by more than 20% from last year
- Component ratio of rollable ribbon products is also rising

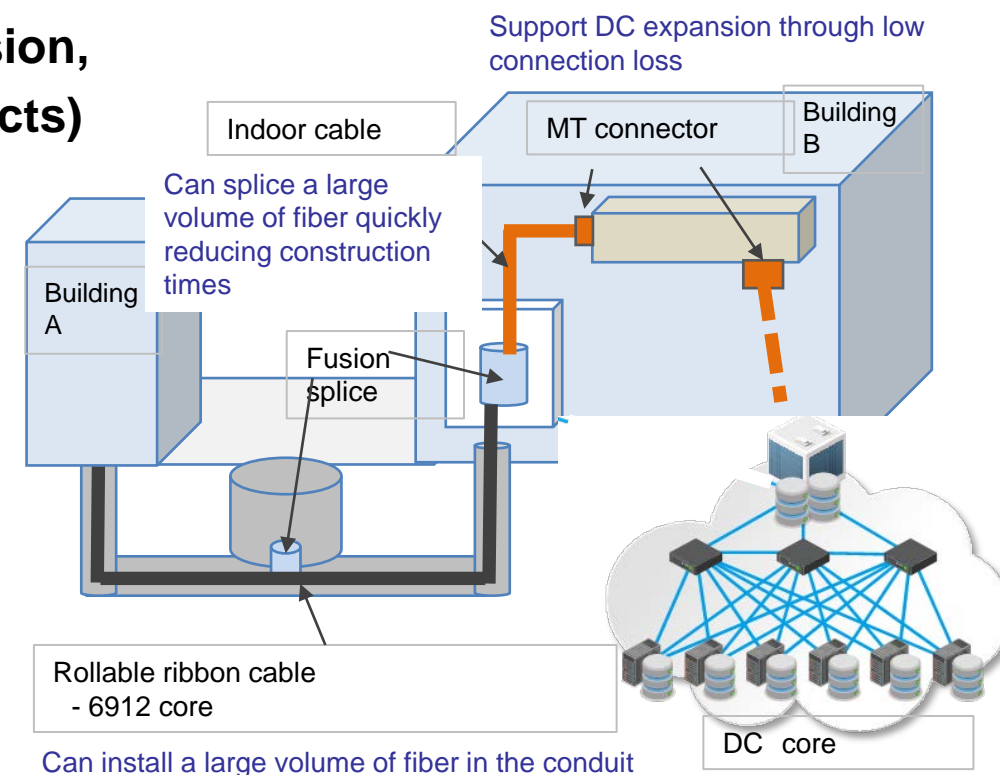
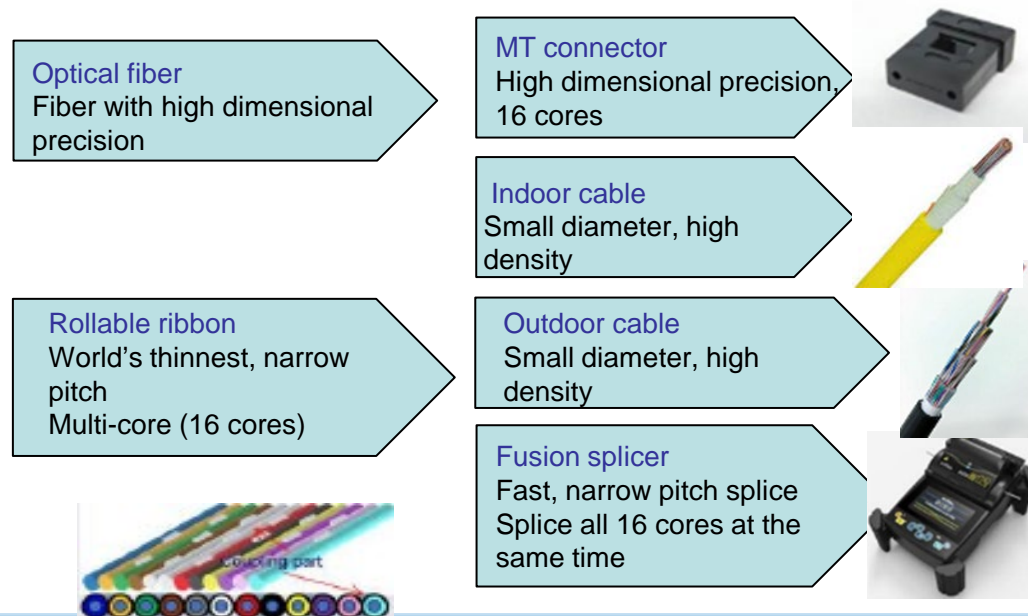
## 2. Current status of the optical fiber and cable business and future outlook

~Response to the data center (DC) market~

**Main point of differentiation (efficient space use, shorter time requirements, energy saving)**

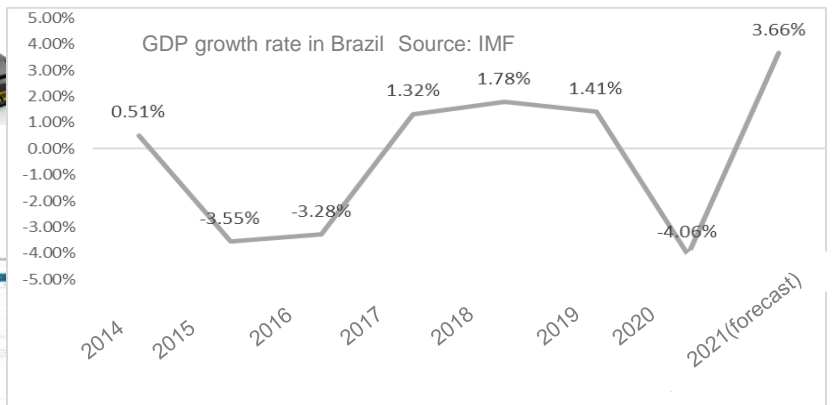
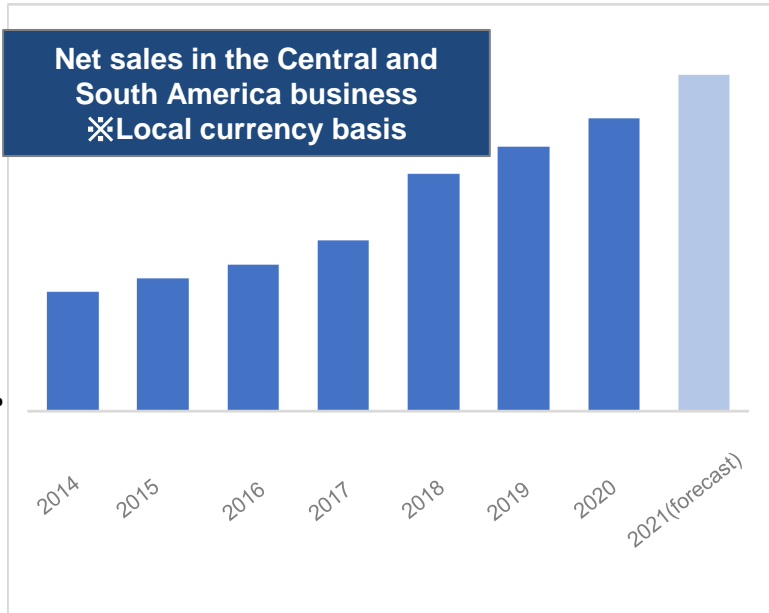
- Through small diameter cable using thin, narrow pitch rollable ribbon, realize higher fiber density (2 times more fibers compared to existing products)
- Through longer lengths, reduce the number of connections and fusion splicing workload (5 locations ⇒ 3 locations over 18km)
- Through fiber and connectors with high dimensional precision, realize low connection loss (15% lower than existing products)

Efficient use of space through small diameter and lightweight, and easier to install



# 3. Current status of the optical fiber and cable solutions business in Central and South America

Realize growth through development of the solutions business in Central and South America



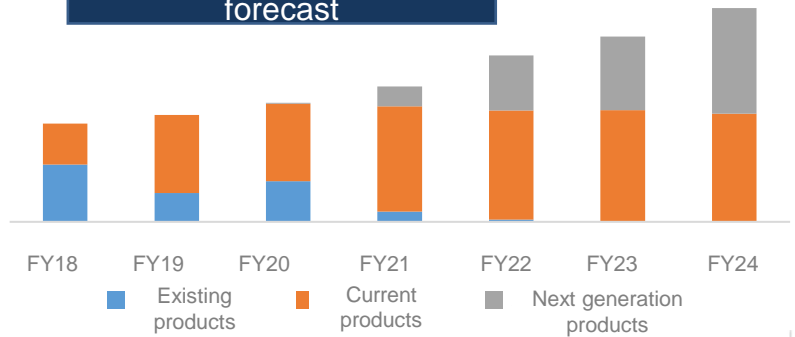
Efficient use of space through small diameter and lightweight, and easier to install



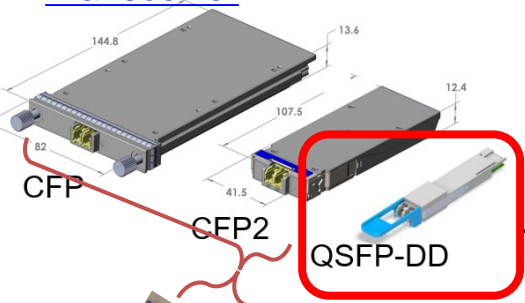


# 4. Current status of the optical device business and future outlook

ITLA shipping quantity forecast



Transceiver



Backbone

1,000km

Trunk line

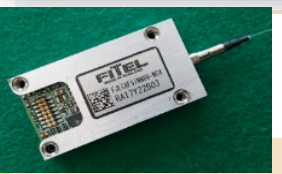
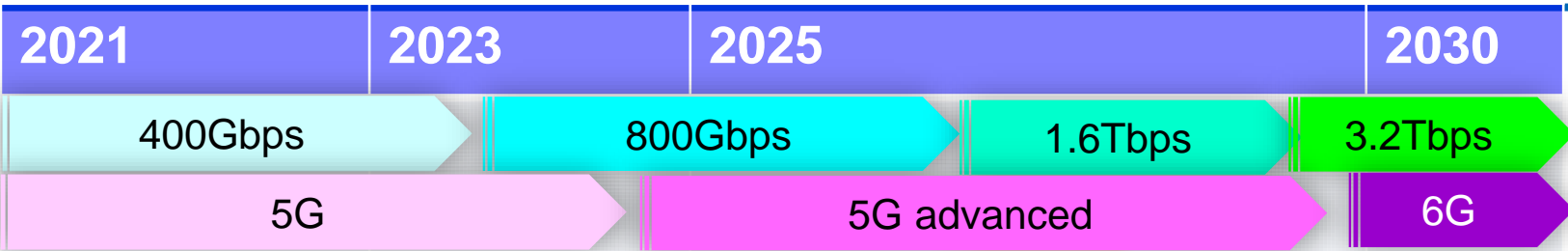
40km

DC/5G

Smaller ITLA

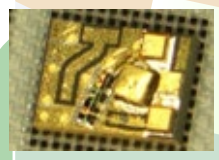
Nano-ITLA

Low power consumption, large volume communications



ITLA※1

Ultra-narrow linewidth & high output  
Higher performance



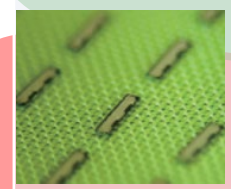
EML※2

Ultra-small & ultra-low power consumption

Nano-ITLA

Integrated light source, modulator and receiver

Smaller & lower power consumption



DFB※3

Ultra-small transceiver

Co-Package

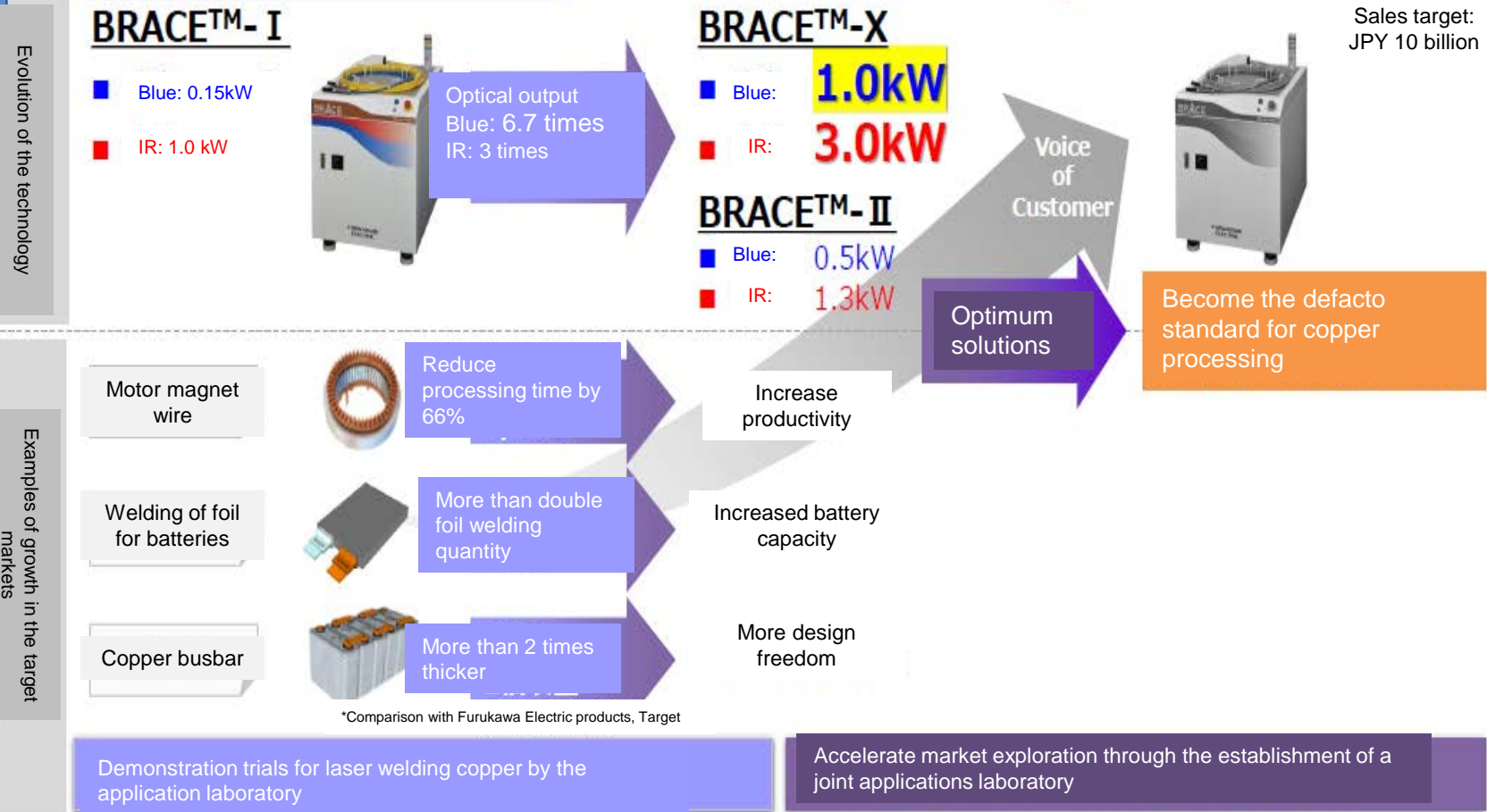
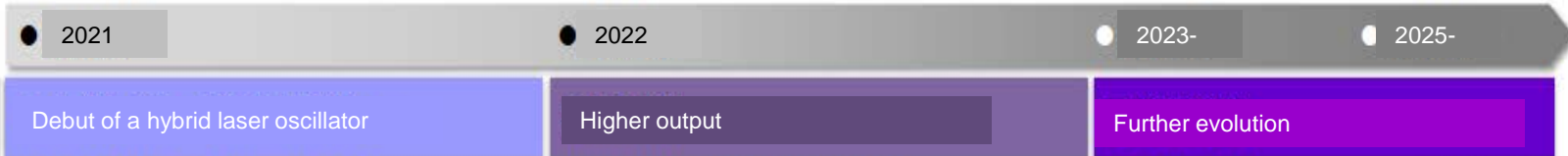
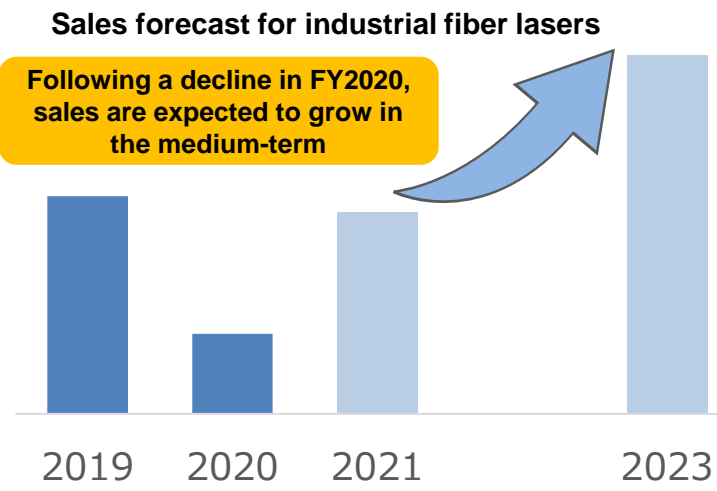
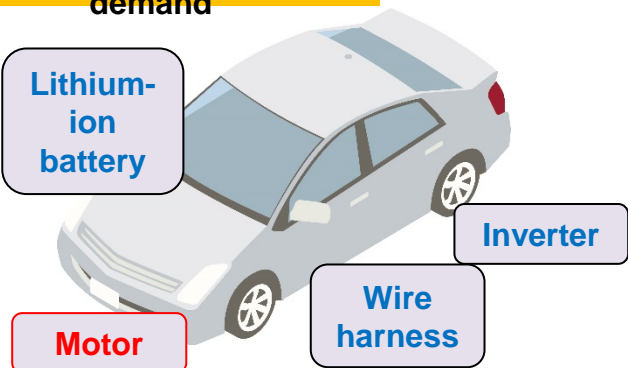
Fusion of optical and electrical

※1:ITLA (Integrated Tunable Laser Assembly: Light source for long-distance communications)  
 ※2:EML (Electro-absorption Modulator integrated with DFB Laser: Light source for medium-distance communications)  
 ※3:DFB (Distributed Feedback (Distributed feedback laser): Light source for short-distance communications)

# 5. Future outlook of the industrial lasers business

- Higher net sales following the recovery in the xEV market
- Expand the laser processing business through co-creation

Contribute to expanding xEV demand



Contribute to advances in xEV that reduce greenhouse gas emissions



# 6. Future outlook of the broadband solutions business

## <Broadband solutions>

➤ By introducing new device and system products aimed at advancing the broadband infrastructure, work to recover business performance and respond to the demand from:

- Government policy of promoting conversion to FTTH and faster speed (10Gb/s)
- More FTTH users following the shift to working from home

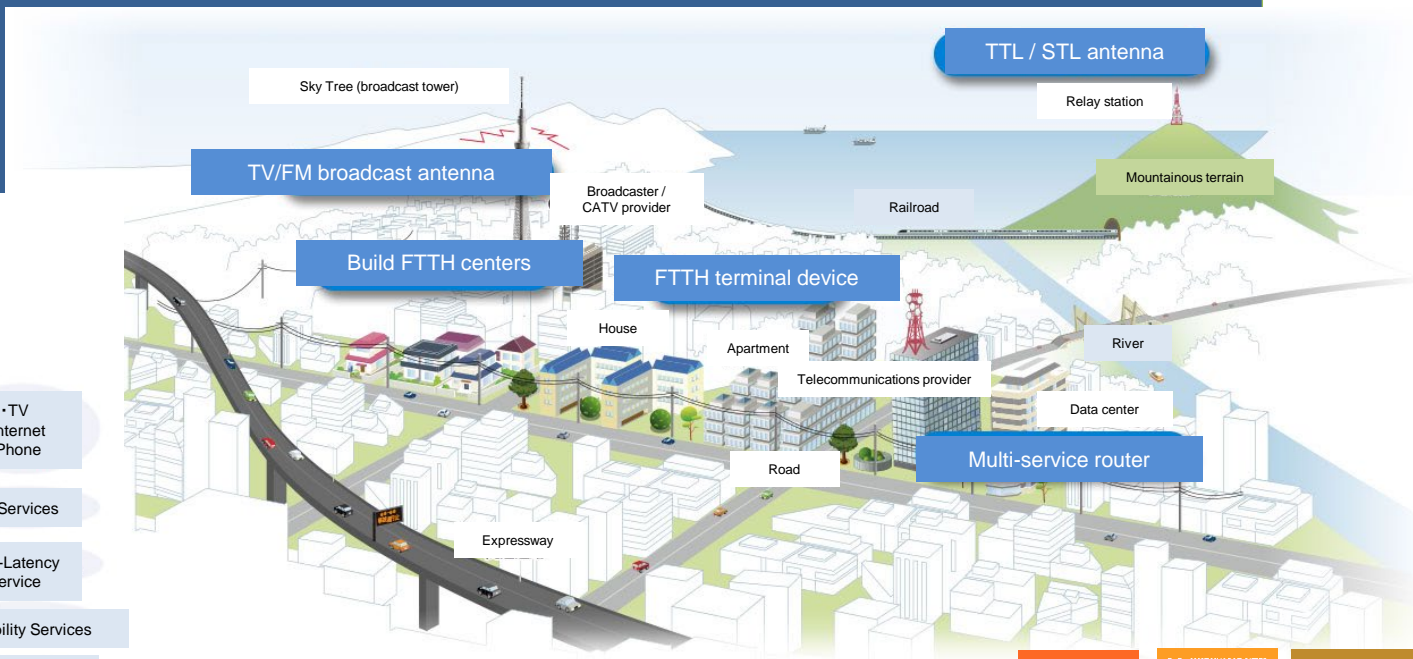
<https://www.furukawa.co.jp/broadband/solution/>

➤ Continue to invest in development directed toward Society 5.0 and next generation network architecture that fuses optical and wireless

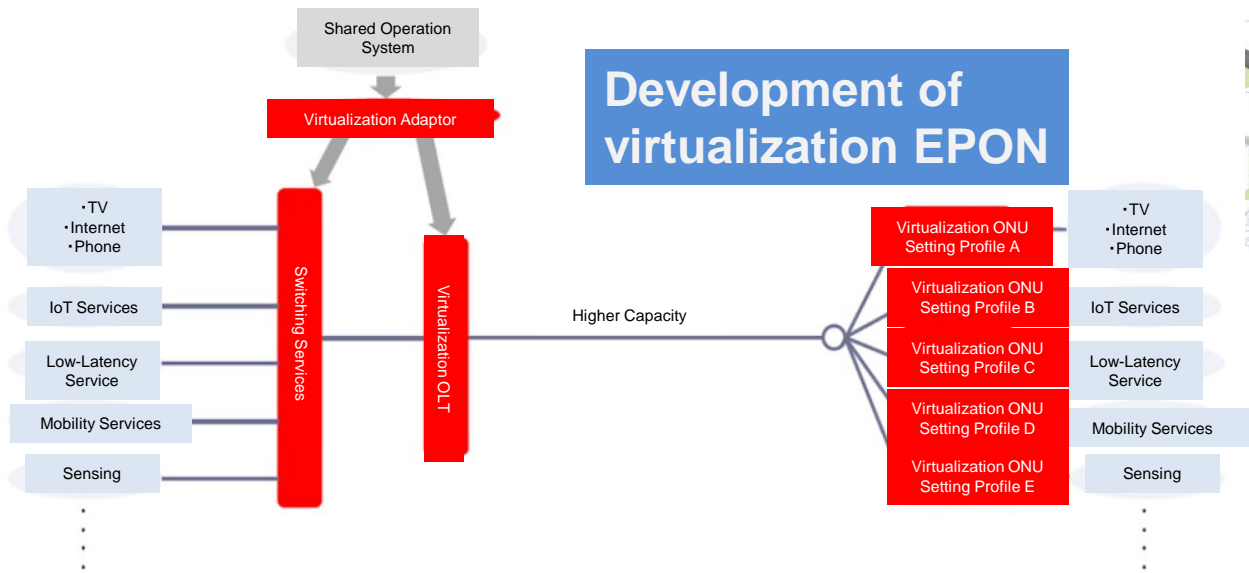
- Development of virtualization EPON
- Start sales of vFX-R virtual route reflector

[https://www.furukawa.co.jp/en/release/2021/comm\\_20210115.html](https://www.furukawa.co.jp/en/release/2021/comm_20210115.html)

[https://www.furukawa.co.jp/release/2021/comm\\_20210331.html](https://www.furukawa.co.jp/release/2021/comm_20210331.html)



## Development of virtualization EPON



Secure redundancy that is effective during disasters

Strengthen data security through encryption

9 INDUSTRY INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

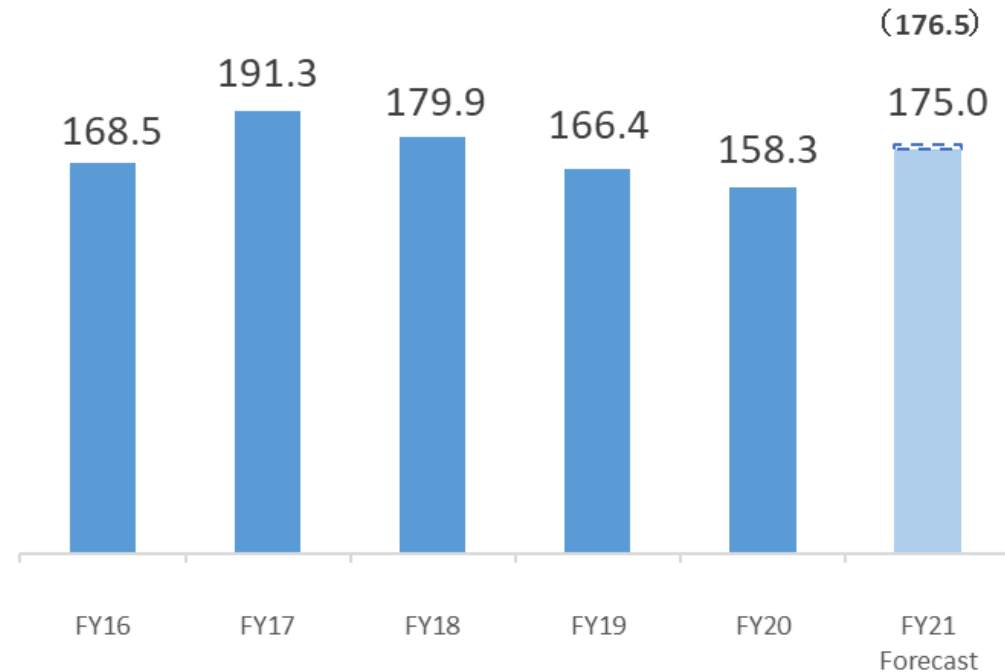
Thank you very much  
for your attention.

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

## Net sales

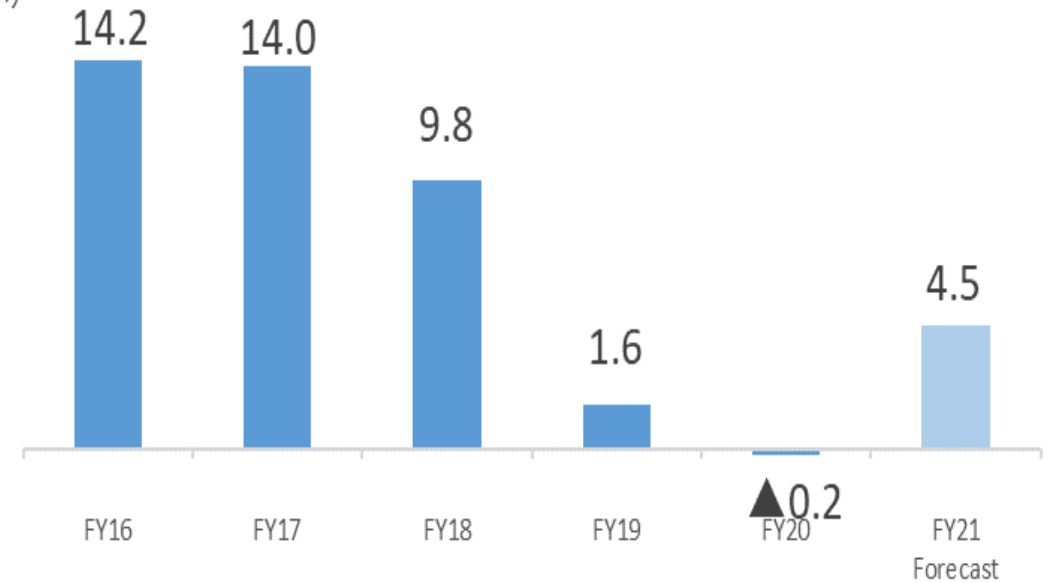
(JPY billion)

(Based on the old accounting standards)



## Operating income

(JPY billion)





## 【FY2021 (Year zero of the 2025 Medium-term Management Plan) basic policy (directed toward achieving Vision 2030)】

Contribute to realizing safe, peaceful and rewarding daily life in a society that combines information, energy and mobility by evolving the elemental telecommunications technology accumulated to date and providing additional solutions.

### 【Strengths as a division】

- Global production network in growing markets
- Differentiation through high performance products and technology (optical fiber & cable, digital coherent and network technology)

### 【External environment – Main revenue opportunities】

- Increased communications traffic worldwide
- Advances in 5G and IoT
- Changes in the social environment caused by COVID-19

### 【Issues and initiatives】

- In response to falling general-purpose product prices, reduce the cost of manufacturing through increased productivity
- Promote the development of next generation products

### 【External environment – Main risks】

- Trade friction between the US and China
- Decoupling
- High raw material prices and difficulty in procuring
- Semiconductor shortage

### 【Future outlook】

In a 5G society, “high speed, large volume”, “low latency” and “simultaneous connection of multiple terminals” are required. We will continue to develop and sell products and services that meet these needs of society.



	Optical fiber and cable products		FITEL products		Broadband solutions	
Main products	<ul style="list-style-type: none"> <li>• Low loss fibers for submarine power cable and long distance</li> <li>• Low bending loss fiber for building/residential applications</li> </ul>	<ul style="list-style-type: none"> <li>• Rollable ribbon cable</li> </ul>	<ul style="list-style-type: none"> <li>• Variable wavelength laser modules (ITLA*)</li> </ul>	<ul style="list-style-type: none"> <li>• Industrial lasers</li> </ul>	<ul style="list-style-type: none"> <li>• FTTH system devices</li> </ul>	<ul style="list-style-type: none"> <li>• Network routers</li> </ul>
Main applications	<ul style="list-style-type: none"> <li>• Telecommunications business</li> <li>• Video broadcasts</li> <li>• Data centers</li> </ul>	<ul style="list-style-type: none"> <li>• Telecommunications business</li> <li>• Video broadcasts</li> <li>• Data centers</li> </ul>	<ul style="list-style-type: none"> <li>• Digital coherent signal light source</li> </ul>	<ul style="list-style-type: none"> <li>• Cutting and welding process, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Telecommunications and broadcast service</li> <li>• Design and installation</li> </ul>	<ul style="list-style-type: none"> <li>• High speed, large capacity telecommunications service</li> <li>• Establish VPN</li> </ul>
Main customers	<ul style="list-style-type: none"> <li>• Telecommunications carriers</li> <li>• CATV providers</li> <li>• OTT</li> </ul>		<ul style="list-style-type: none"> <li>• System vendors</li> <li>• Transmission device manufacturers</li> </ul>	<ul style="list-style-type: none"> <li>• Industrial processing manufacturers</li> </ul>	<ul style="list-style-type: none"> <li>• CATV providers</li> <li>• Municipalities</li> <li>• Telecommunications providers</li> </ul>	<ul style="list-style-type: none"> <li>• Telecommunications providers</li> <li>• General companies</li> </ul>

\*ITLA : Integrable Tunable Laser Assembly