

# Business Briefing

Communications Solutions Business

June 7, 2023

Furukawa Electric Co., Ltd.

Communications Solutions Division

General Manager Toshihiko Ota

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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.

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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.
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- Changes in assumptions involving financial and managerial matters and the operating environment.
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**FURUKAWA ELECTRIC CO., LTD.**

## 1. Progress of the 2025 Mid-term Plan

- Optical fiber and cable
- Networking systems
- Optical devices
- Industrial lasers
- Broadband solutions
- Directed at the realization of the IOWN concept

## 2. FY2023 forecast

## 3. Initiatives for the SDGs and Vision 2030

## Appendix

# 1. Progress of the 2025 Mid-term Plan

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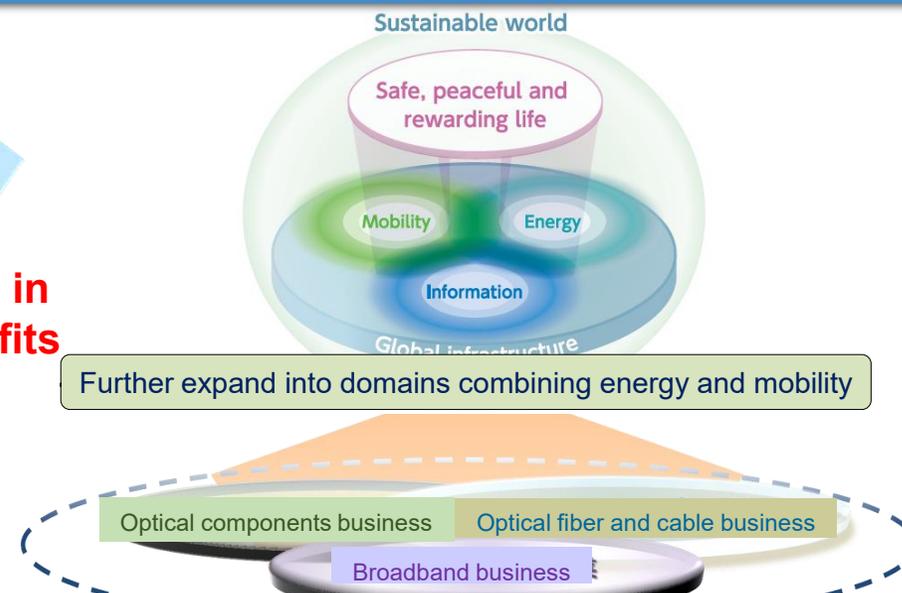
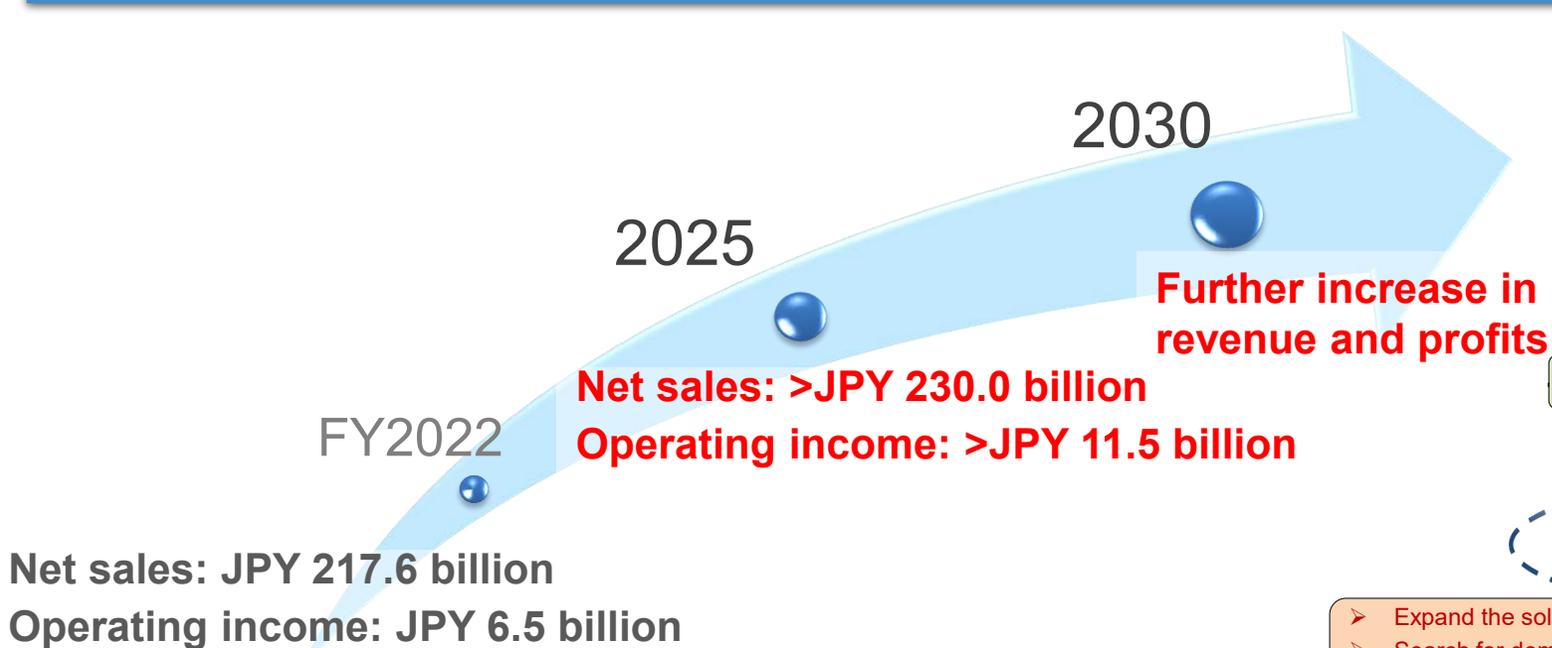
# 1. Progress of the 2025 Mid-term Plan

## Communications Solutions segment targets

Become a business that “supports and leads” the evolution of data transmission and realization of a sustainable society

Contribute to creating “global infrastructure combining information, energy and mobility” set forth in Vision 2030

- In the telecommunications domain, secure a key position in the supply chain directed at the era of IOWN and B5G, and provide around the world high value added products and solutions based on the keyword of “energy saving”
- In the non-telecommunications domain, provide high value added product lineups and services that contribute to the generation, transmission and detection of information and energy and will lead to “increased safety and quality of life”



- Expand the solutions and grow the existing businesses in each business division (individual company)
- Search for domains that combine the strengths of several business divisions + expand the presence in the non-telecommunications domain

# 1. Progress of the 2025 Mid-term Plan

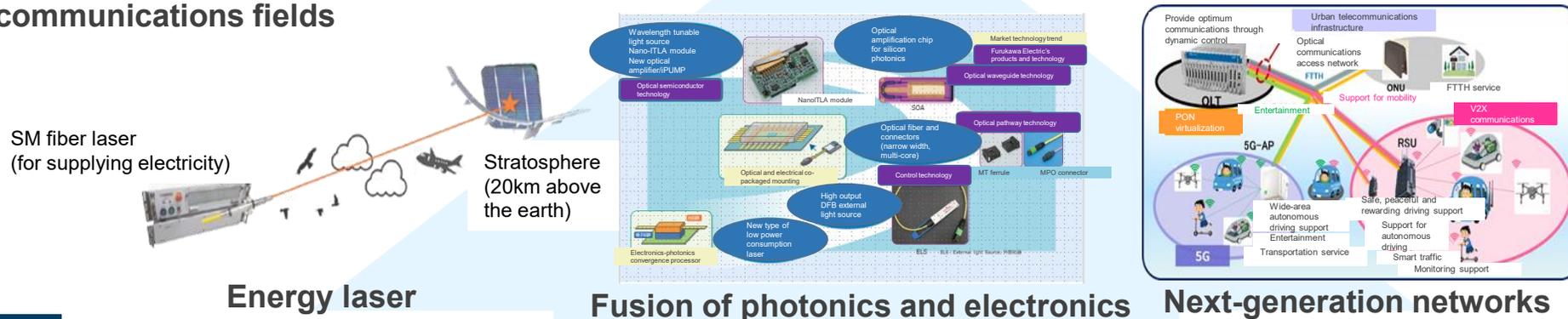
## Directed at 2030, realize a B5G society

Vision  
2030

Increased data traffic following realization of a B5G society  
 ⇔ Support through photonics technology and build social infrastructure

Leap forward through the creation of businesses designed to solve social issues

Telecommunications + Expansion  
into non-telecommunications fields



Realize a B5G society

2025  
Goal

Realize growth by strengthening the businesses designed to solve social issues

Today

Expansion of networking systems (NWS)

Optical fiber, Ultra-high count, multi-core RR cable

Optical semiconductor chips for communications

External light source

ITLA (Semiconductor laser for optical communication)

Next-generation PON (Higher speed, virtual)

Multi-service router

Business developments leveraging photonics and high frequency (wireless) technology

# 1. Progress of the 2025 Mid-term Plan

## Market environment

## Initiatives for achieving the 2025 targets

### Optical fiber & cable/Networking systems (NWS)

(P8 ·P9)

- ✓ Underlying growth trend remains intact despite the temporary demand correction
- ✓ Diversification of customer needs (Low cost, energy saving, high fiber count/high density, increased workability, etc.)

- ✓ Expand the lineup of high value added products
- ✓ Continue the global expansion of NWS (Full-scale rollout to the Americas, Europe and Asia centered on Central and South America)
- ✓ Continue to increase productivity (DX activities, etc.)

### Optical devices

(P10)

- ✓ Despite the current weakness due to inventory adjustments by customers, the long-term outlook is solid
- ✓ Ongoing requirements for ultra-small, high performance and low power consumption

- ✓ Mass production and increased sales of Nano-ITLA and DFB chips
- ✓ Development of next-generation Raman units and pump lasers
- ✓ Develop technology and launch products for the photonics-electronics convergence and integrated components

### Industrial fiber lasers

(P11)

- ✓ Active development projects for xEV

- ✓ Enhance the sales and marketing function (in the field of vehicle electrification)
- ✓ Expand the laboratories and strengthen the activities aimed at increasing adoption on the mass production lines of key customers

### Broadband solutions

(P12)

- ✓ Solid FTTH demand for CATV businesses in Japan
- ✓ Solid IP router demand (for telecommunications carriers and businesses in Japan)
- ✓ Continue to face difficulty procuring semiconductors and higher component prices

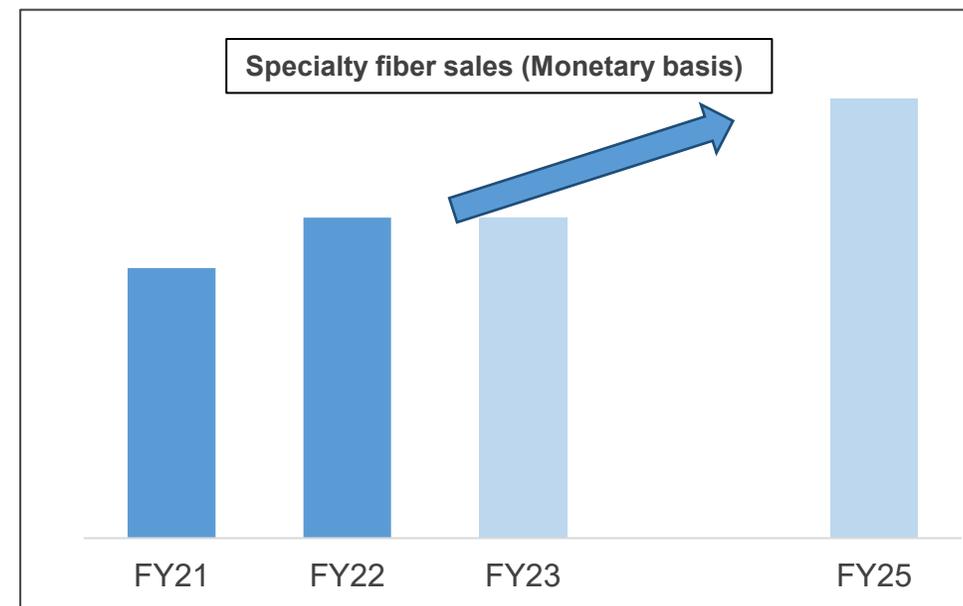
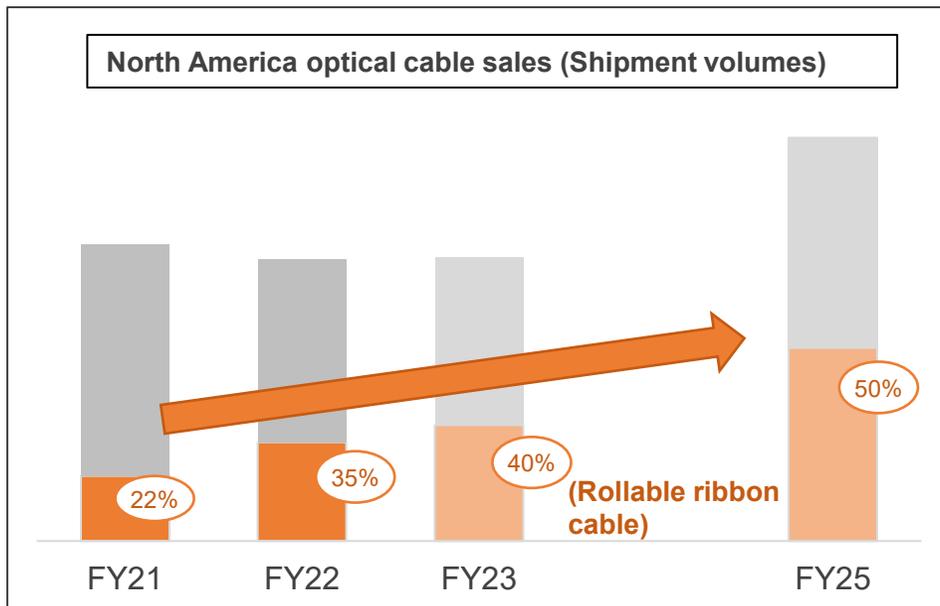
- ✓ Enhance the solutions (FTTH, wireless, local 5G)
- ✓ Increase sales of high performance edge routers and virtual routers
- ✓ Secure profitability by optimizing inventories and adjusting sales prices to appropriate levels
- ✓ Promote the development of next-generation network technology

※ Detailed explanation given on the page indicated in ()

# 1. Progress of the 2025 Mid-term Plan

## Optical fiber and cable

- Leverage the product and technology strengths and the production site in the growing North America market, and increase profits by expanding sales of high value added products  
(Directed at FY2025: Despite the recent temporary demand correction, the market will continue to grow in the medium- to long-term <CAGR+5%, Furukawa Electric estimate> )
- Establish a system for increasing production when demand recovers in FY2023, enhance the product lineup and increase global sales (RR cable)
- Increase sales for submarine power cable, as well as for the energy transmission, sensing, aerospace and medical fields (specialty fiber)
- Continue to increase productivity (Utilize DX, etc.)

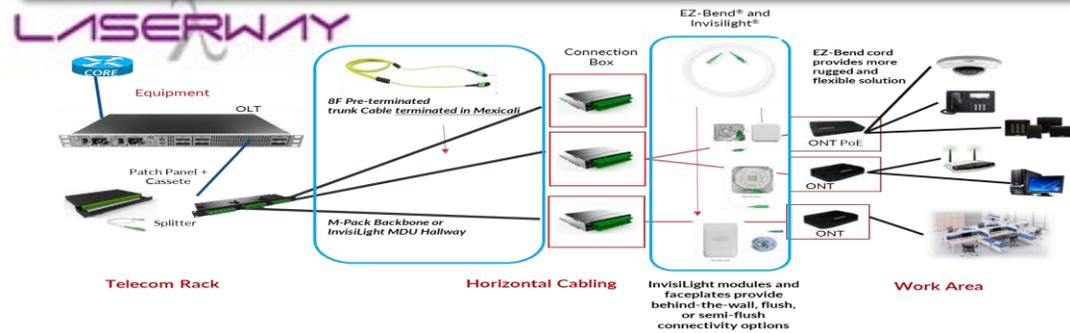


# 1. Progress of the 2025 Mid-term Plan

## Networking systems (NWS)

- Expand to the Americas, Europe and Asia centered on Central and South America
  - Central and South America : FTTH, enterprise market <5G networks, multi-service networks>
  - North America : MDU/SFU\* market
  - Europe/Asia : Hospitality, FTTH market

\* MDU : Multifamily Dwelling Unit  
SFU : Single family Unit



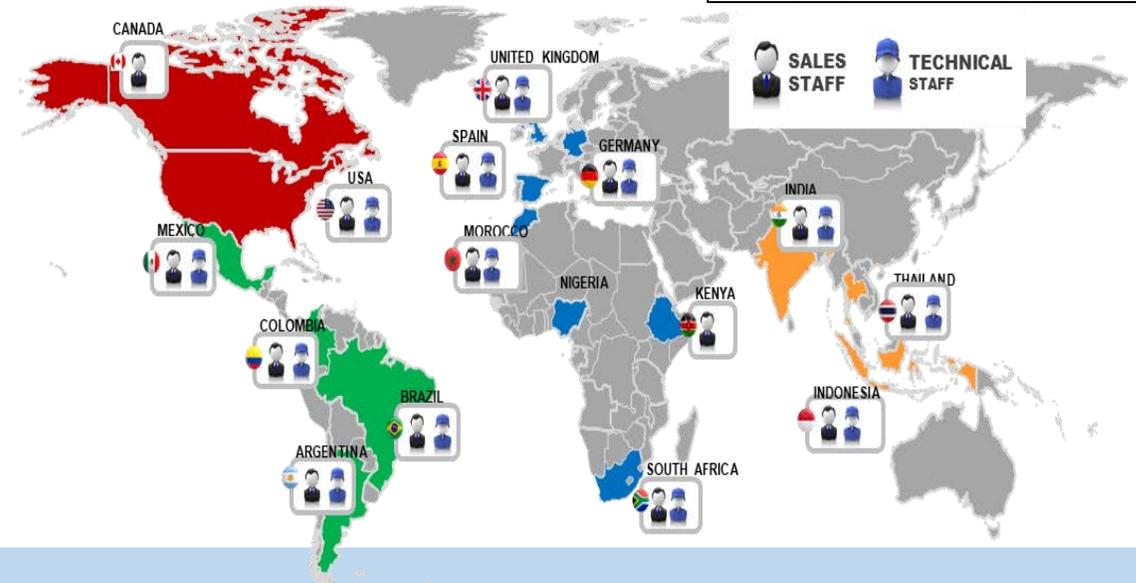
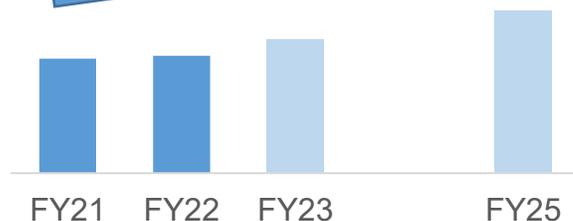
In addition to sales of products such as cable and connectors, provide a total package including design/operational support and after-sales service



InvisiLight  
EZGrow



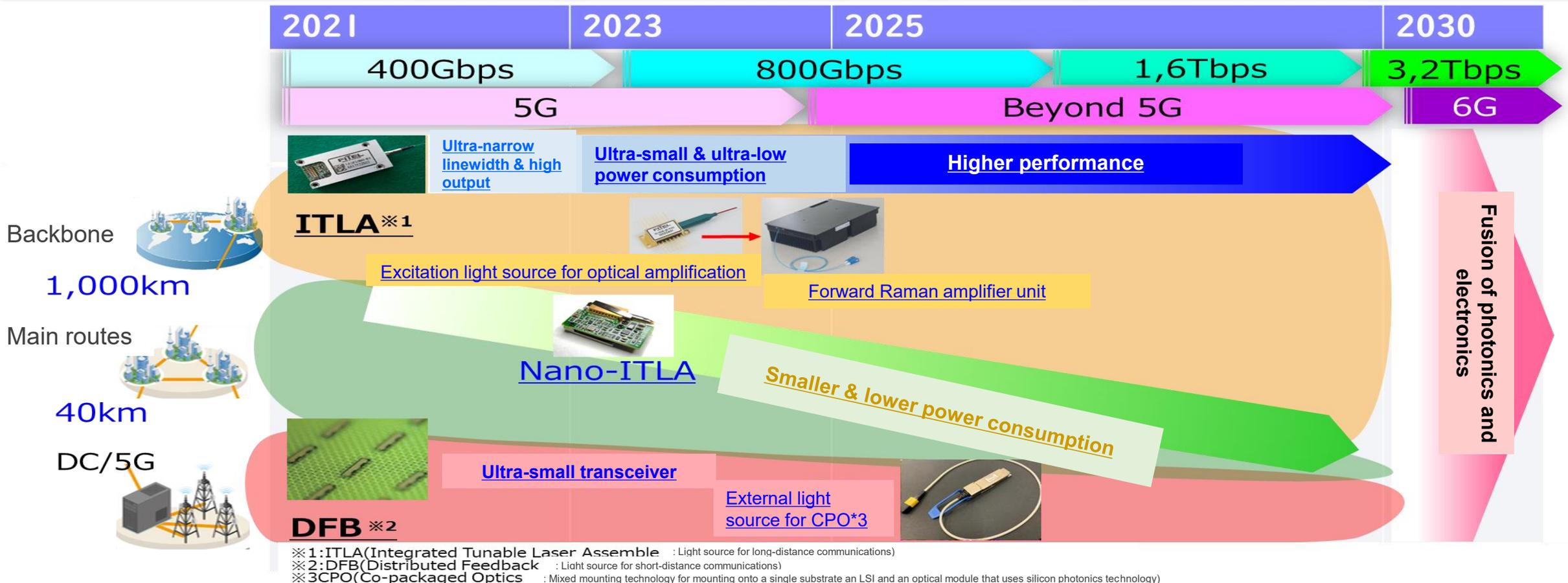
Steady growth toward increasing net sales by 30%



# 1. Progress of the 2025 Mid-term Plan

## Optical devices

- Increase sales of Nano-ITLA, strengthen the manufacturing capabilities and increase sales by raising the basic technological level
- Lead the photonics-electronics convergence (CPO) market through increased output, high efficiency and integration of the light source
- Increase sales of Raman amplifier units that contribute to increasing the quality and distance of data transmission



# 1. Progress of the 2025 Mid-term Plan

## Industrial fiber lasers

- Opened the laser application laboratory CALL\* in the Chubu region
- Through laser solutions developed utilizing BRACE-X and CALL, strengthen the activities aimed at increasing adoption on customers' mass production lines
- Strengthen co-creation with Nichia Corporation

### Laser welding solutions provided by Furukawa Electric



### Laser application laboratory “CALL” located in the Chubu region



Interior view of CALL



Location of CALL

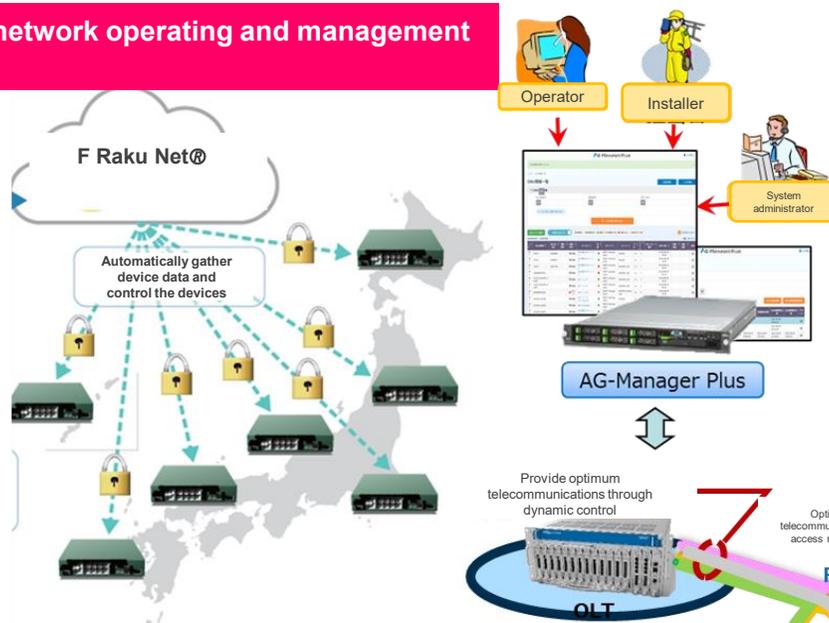
\* CALL : Chubu Advanced Laser processing Laboratory - Opened in November 2022

# 1. Progress of the 2025 Mid-term Plan

## Broadband solutions

Build telecommunications and transmission infrastructure for everything from the backbone to access networks, and create new value centered on IP, optical, high frequency and system engineering

Develop a comprehensive network operating and management system



✳Furukawa Electric is a **Sponsor Member of IOWN Global Forum**. In addition, we are promoting standardization and technology development for various next-generation network technology.



Respond to the diversification of backbone broadcast data transmission

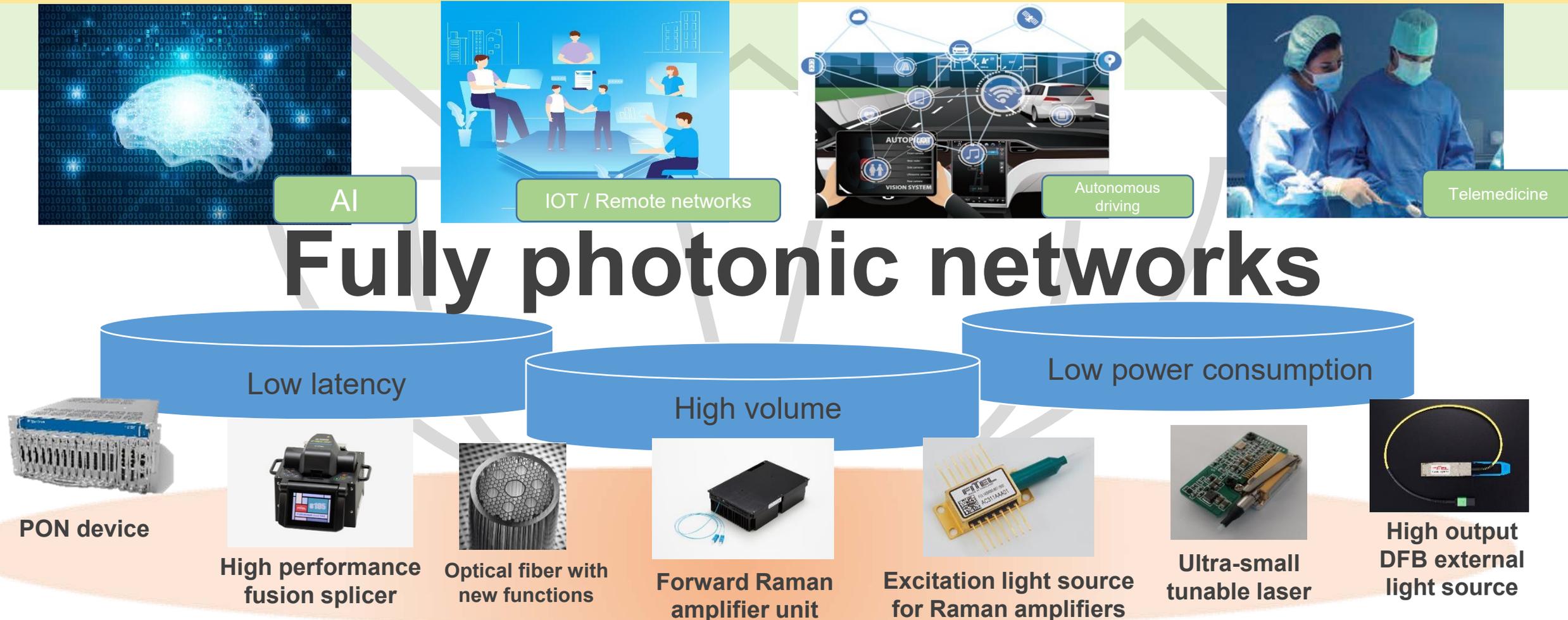
Strengthen the combination of optical access (FTTH) and wireless

# 1. Progress of the 2025 Mid-term Plan

## Directed at realizing the IOWN concept

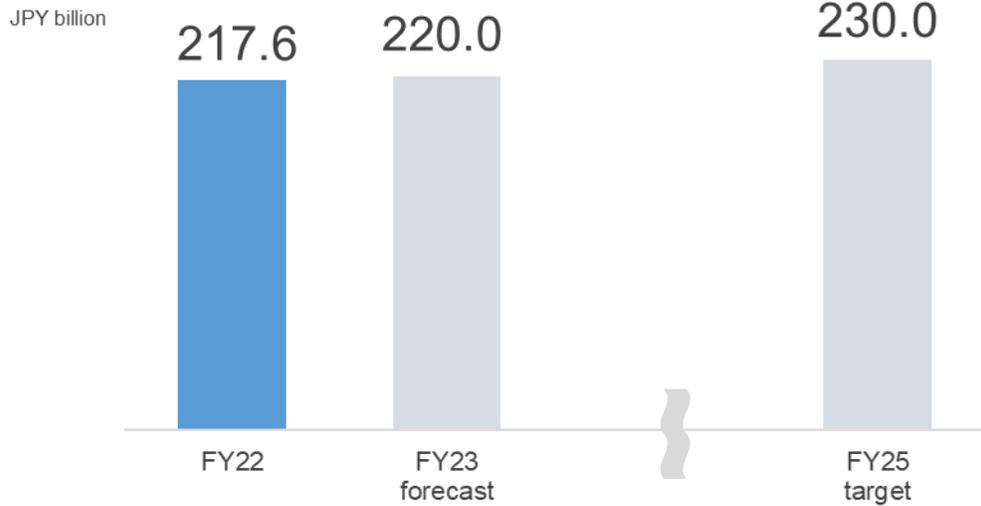
Based on the group's core technologies, contribute to the realization of next-generation networks as an IOWN partner

In April 2022, launched the "Project team for the creation of next-generation photonics businesses" reporting directly to the president

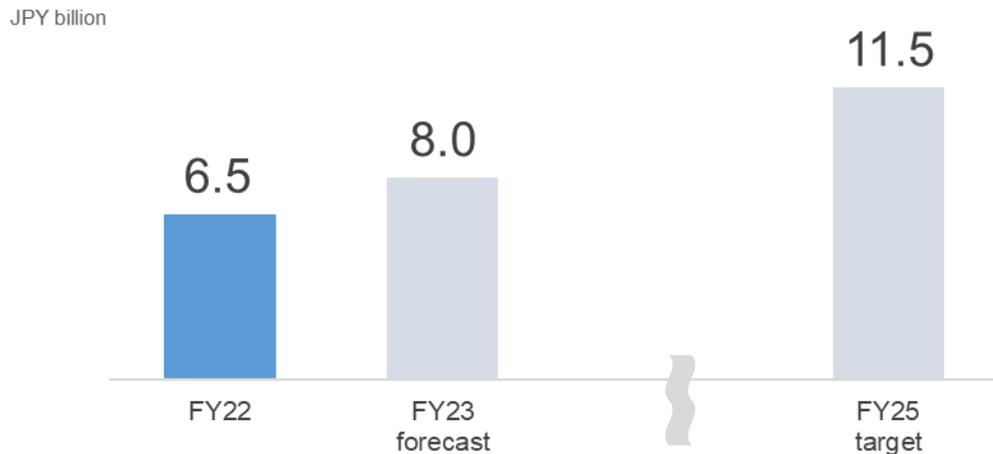


Leverage photonics and wireless technology to "support and utilize simultaneous realization"

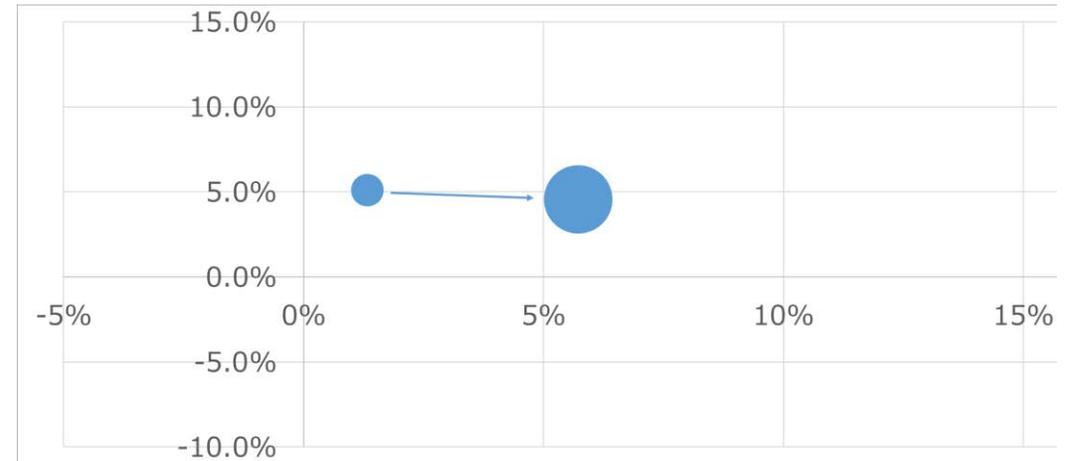
## Net sales



## Operating income



## ROIC (FY22 actual → FY25 target)



Vertical axis : Net sales CAGR (FY18-22→FY22-25)  
 Horizontal axis: ROIC (FY22→25)  
 Bubble : NOPAT (FY22→25)

- ※ Net sales and invested capital in FY24 and FY25 have been adjusted based on the FY23 forecast average market price of copper and average exchange rate
- ※ CAGR: Compound annual growth rate, ROIC: Return on invested capital (after taxes), NOPAT: Calculated as net income + interest expenses after tax in accordance with IFRS

	FY22	FY23 forecast	FY25 target
Average copper price	1,209	1,180	1,085
Average exchange rate	135	130	110

## 2. FY2023 forecast

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## 2. FY2023 forecast

### Awareness of the business environment and envisioned risks

- ✓ **Temporarily weak demand**
  - **Americas telecom and ISP** (※1)  
    <Optical fiber & cable, NWS>
  - **Optical components (Nano ITLA, DFB chip, etc.)**
  
- ✓ **Raw material prices, component prices, energy costs and logistics costs continue to soar**
  
- ✓ **Response to Buy America**

※1 ISP : Internet service provider

### Priority initiatives

- ✓ **Increase sales for the enterprise market in which demand is firm (Data centers, hotels, hospitals, educational institutions, etc.)**
- ✓ **Strengthen the specialty fiber sales resources for industry (lasers, etc.), low latency applications and medical fields**
- ✓ **Thoroughly reduce business expenses, and establish a supply system at each site for when demand recovers**
- ✓ **Continue the activities aimed at reducing costs, including increasing yield and productivity**
  
- ✓ **Adjust sales prices to appropriate levels, reduce procurement and logistics costs and promote the stable procurement of raw materials**
  - Secure multiple suppliers      •Identify and adopt alternative materials
  - Strengthen the cooperation within the group      •Design modifications, etc.
  
- ✓ **Lobbying activities aimed at exemption, and strengthening the sales activities for customers that will be minimally affected**

### **3. Initiatives for the SDGs and Vision 2030**

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# 3. Initiatives for the SDGs and Vision 2030

## Creation of next-generation photonics businesses

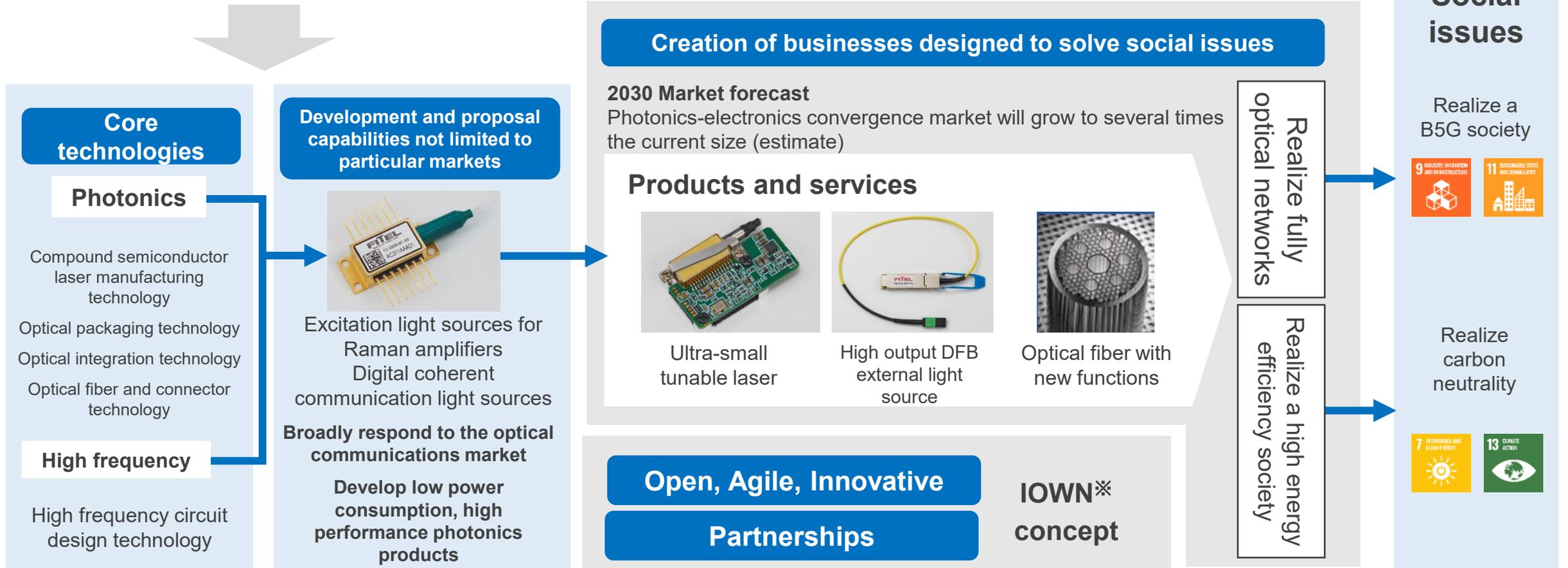
Contribute to the realization of fully optical networks and a highly efficient energy society through the development of high performance photonics products

Factors in the social issues that should be solved

Eliminate or reduce CO<sub>2</sub> emissions by society

Small, high speed, high output, high efficiency light sources

Trust from stakeholders



※ IOWN: Innovative Optical and Wireless Network

**Thank you very much for your attention**

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



【2025 Mid-term Plan (Road To Vision 2030 -Transform and Challenge-) basic policy】  
 Contribute to creating “global infrastructure combining information, energy and mobility” set forth in Vision 2030 by evolving the elemental telecommunications technology accumulated over the years and providing further solutions.

## 【External environment, strengths and issues】

### External environment – Main revenue opportunities

- Increased data traffic worldwide (high speed, large volume, low latency, energy saving)
- Advances in IOT and 5G/B5G/6G
- Changes in workstyles and lifestyles

### Strengths as a division

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

### External environment – Main menaces and risks

- Issues involving Russia & Ukraine and relations between China and the US
- Global supply chain problems
- Soaring personnel expenses due to inflation, energy costs and raw materials expenses
- Global semiconductor shortage

### Issues as a division

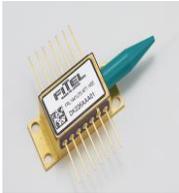
- While taking into consideration the external environment indicated on the left, maximally utilize the global production network to deliver optimum solutions to the market

## 【Main strategy for achieving the 2025 Mid-term Plan】

- Telecommunications domain: Secure a key position in the supply chain and provide high value added products and solutions that contribute to “energy saving” in data transmission
- Non-telecommunications domain: Provide high value added product lineups and services for contributing to the generation, transmission and detection of data and energy that will lead to “increased safety and quality of life”
  - ▶ Increase sales of high value added optical fiber and cable, and accelerate the expansion of the networking systems business
  - ▶ Contribute to building integrated data infrastructure and the evolution of broadband networks through semiconductor lasers, optical fiber and IP network devices and systems



# Appendix - Product overview

	Optical fiber and cable products		FITEL products		Broadband solutions		
							
5G/B5G	●	●	●			●	●
Tougher infrastructure	●	●	●			●	●
Carbon neutral	●	●	●		●		
Main products	<ul style="list-style-type: none"> <li>● Low loss fibers</li> <li>● Low bending loss fiber for building/ residential applications</li> <li>● Specialty fibers</li> </ul>	<ul style="list-style-type: none"> <li>● Optical cable (including rollable ribbon cable)</li> <li>● Optical connection products</li> </ul>	<ul style="list-style-type: none"> <li>● Variable wavelength laser modules (ITLA*2)</li> <li>● Laser excitation modules</li> </ul>	<ul style="list-style-type: none"> <li>● Industrial fiber lasers</li> </ul>	<ul style="list-style-type: none"> <li>● FTTH systems</li> <li>● Wireless systems</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 infrastructure and networks</li> <li>● Video broadcasts</li> <li>● Data centers</li> </ul>	<ul style="list-style-type: none"> <li>● Digital coherent signal light source</li> <li>● Excitation light source for optical signal amplification</li> </ul>	<ul style="list-style-type: none"> <li>● Metal cutting and welding processes</li> </ul>	<ul style="list-style-type: none"> <li>● Telecommunications and broadcast services</li> <li>● Video broadcasts</li> <li>● Wireless infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>● High speed, large volume telecommunications services</li> <li>● VPN services</li> </ul>	
Main customers	<ul style="list-style-type: none"> <li>● Telecommunications carriers</li> <li>● OTT</li> <li>● Telecommunications construction companies</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>● Telecommunications providers</li> <li>● CATV providers</li> <li>● Municipalities</li> </ul>	<ul style="list-style-type: none"> <li>● Telecommunications providers</li> <li>● General companies</li> </ul>	

\*ITLA : Integrable Tunable Laser Assembly