

Yokogawa Electric Corporation

# Financial Results for 1<sup>st</sup> Half of Fiscal Year 2020 (April 1 - September 30, 2020)

Nov. 4, 2020

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**Junichi Anabuki**

Director, Executive Vice President  
Corporate Administration Headquarters

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~ Transform and achieve further growth ~  
(Special Feature: Yokogawa's DX)

**Hitoshi Nara**

President and Chief Executive Officer

Yokogawa Electric Corporation

# Financial Results for 1<sup>st</sup> Half of Fiscal Year 2020 and FY20 Forecast

**Junichi Anabuki**

Director, Executive Vice President  
Corporate Administration Headquarters

# Key Points

## ■ FY20 1H results: Sales and operating income declined year on year.

- Summary: Sales declined due to COVID-19 and the impact of the exchange rate. Operating income declined due to decreased sales. Profit attributable to owners of parent was at about the same level as the previous year.
- Segments:  
Control: Sales and operating income were down. Excluding the impact of the exchange rate and the transfer of a subsidiary's shares, orders declined 17.1%, sales declined 4.9%, and operating income rose 3.9% year on year.  
Measurement: Sales were up, but operating income declined.  
Aviation and Other: Sales declined and the operating loss increased.
- Regions: Although conditions in all regions were harsh, orders rose in Central and South America, and sales in China were strong.
- Industries: Energy-related industries all were adversely impacted by the COVID-19 crisis, and large project orders were down from the previous year.

## ■ FY20 earnings forecast: Sales and operating income are expected to decline. → Change from Aug 12, 2020

- In an uncertain business environment, where people continue to search for the right balance between measures to prevent the spread of COVID-19 and efforts to resume normal business activities, there have been no significant changes to the company's sentiment that the macro economy will recover at a gradual pace toward the end of the fiscal year. However, we have revised the forecast based on 1H results.

## ■ FY20 dividend forecast: Total annual dividend of ¥34 <No change>

# Summary of FY20 1H Results

- ◆ Orders decreased (excluding impact of exchange rate and transfer of subsidiary's shares: -15.8% year on year).
- ◆ Sales decreased (excluding impact of exchange rate and transfer of a subsidiary's shares: -5.3% year on year).
- ◆ Operating income was down due to decreased sales.
- ◆ Profit attributable to owners of parent was at about the same level as the previous year.

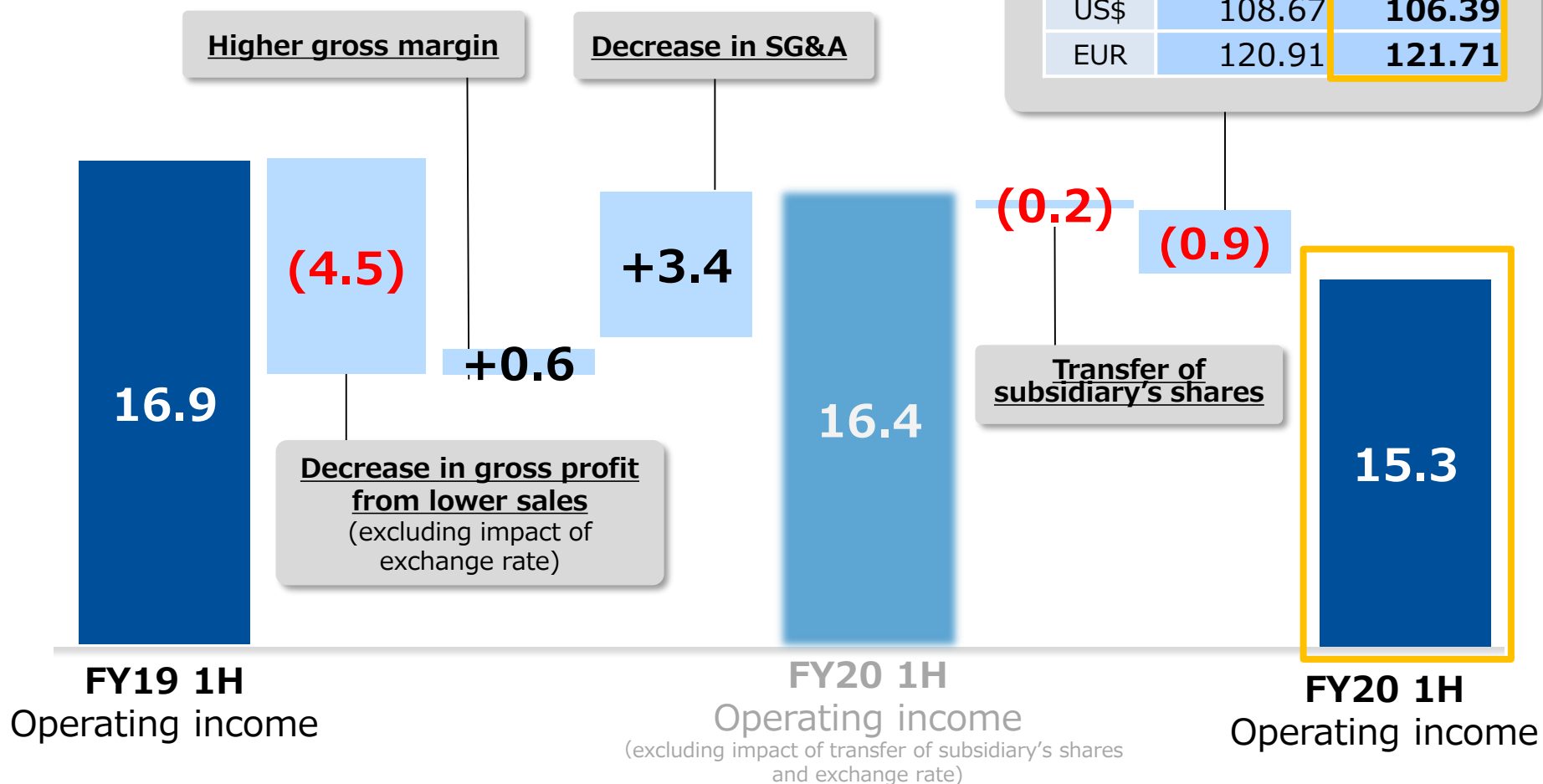
(Billion ¥)

	FY19 1H	FY20 1H	Difference	Growth rate	Impact of exchange rate and transfer of subsidiary's shares
Orders	209.8	169.0	(40.8)	(19.4%)	(8.1)
Sales	191.4	174.4	(17.0)	(8.9%)	(7.0)
Operating income	16.9	15.3	(1.6)	(9.0%)	(1.1)
ROS (%)	8.8	8.8	▲0.0 pts	—	—
Ordinary income	17.0	16.3	(0.7)	(4.4%)	(1.1)
Profit attributable to owners of parent	9.9	9.8	(0.1)	(0.8%)	(1.0)
EPS	36.94	36.65	(0.29)	(0.8%)	
Exchange rate	1\$ = ¥108.67	¥106.39	(2.28)	—	—

# Analysis of Operating Income (FY19 1H/FY20 1H comparison)

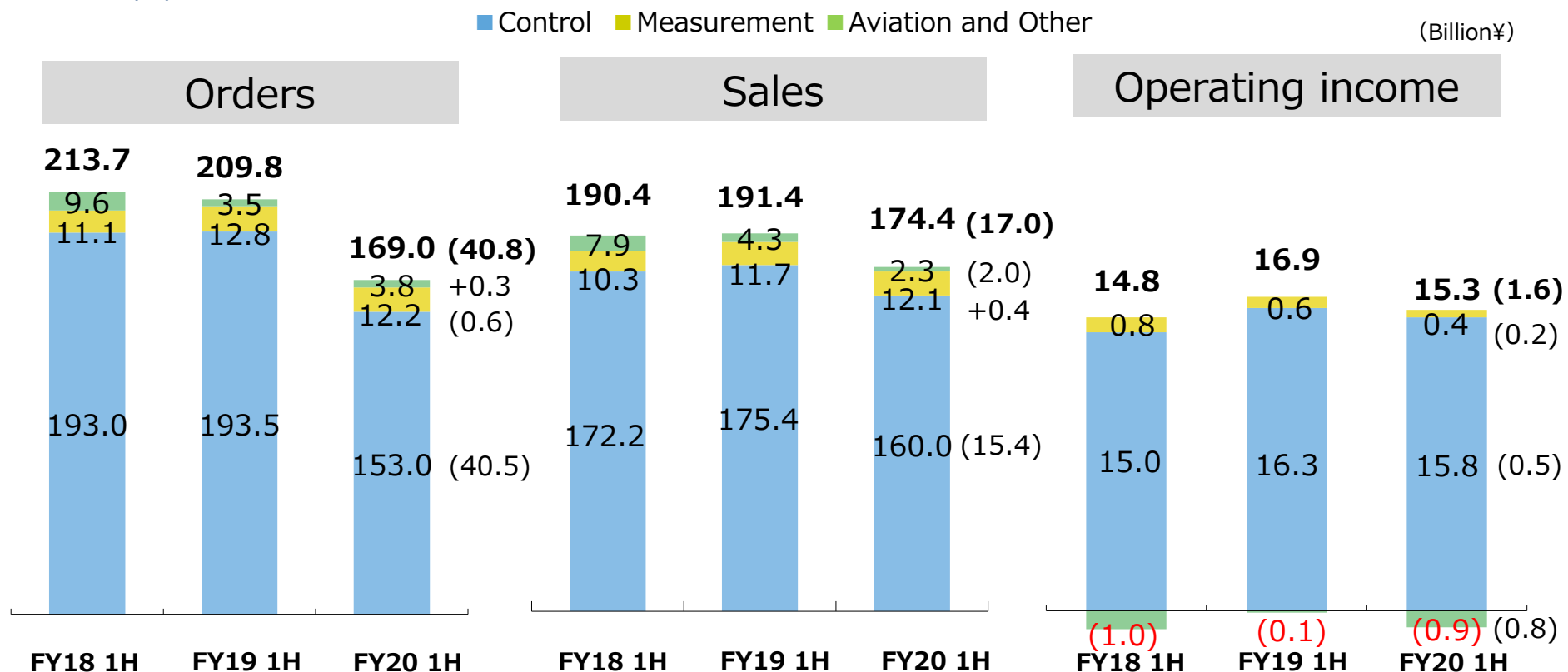
(Billion¥)

◆ Although operating income was affected by the decrease in sales, the decrease in profits was limited due to a reduction in SG&A.



# FY19 1H/FY20 1H Comparison for Orders, Sales, and Operating income by Segment

- ◆ Control: Orders and sales declined due to COVID-19 and the impact of the exchange rate (excluding the impact of exchange rate and transfer of subsidiary's shares: orders -17.1%, sales -4.9% year on year). Operating income was down due to decreased sales (excluding the impact of exchange rate and transfer of subsidiary's shares: +¥0.6 billion/+3.9% year on year).
- ◆ Measurement: While sales remained strong, operating income was down due to upfront investments in the life innovation business etc.
- ◆ Aviation and Other: Sales declined and the operating loss increased mainly due to sluggish demand for aviation-related equipment.



# Orders and Sales by Region in Control Segment

- ◆ Orders were down overall due to the impact of COVID-19 and the exchange rate, but were up in Central and South America (excluding the impact of exchange rate and transfer of subsidiary's shares: -¥32.6 billion/-17.1% year on year).
- ◆ Sales were also down overall for the same reasons, but were strong in China (excluding the impact of exchange rate and transfer of subsidiary's shares: -¥8.6 billion/-4.9% year on year).

(Billion¥)

Orders	FY19 1H (A)	FY20 1H (B)	Difference (B-A)
Japan	57.3	51.2	(6.1)
Asia	63.1	52.9	(10.2)
(South-eastern Asia and Far East)	30.6	26.6	(4.0)
(China)	23.9	21.5	(2.4)
(India)	8.6	4.8	(3.8)
Europe and CIS	24.1	17.2	(6.9)
Middle East and Africa	28.5	17.8	(10.7)
North America	15.3	8.4	(6.9)
Central and South America	5.2	5.5	0.3
Outside Japan	136.2	101.8	(34.4)
Consolidated	193.5	153.0	(40.5)
Exchange rate 1\$ =	¥108.67	¥106.39	(¥2.28)

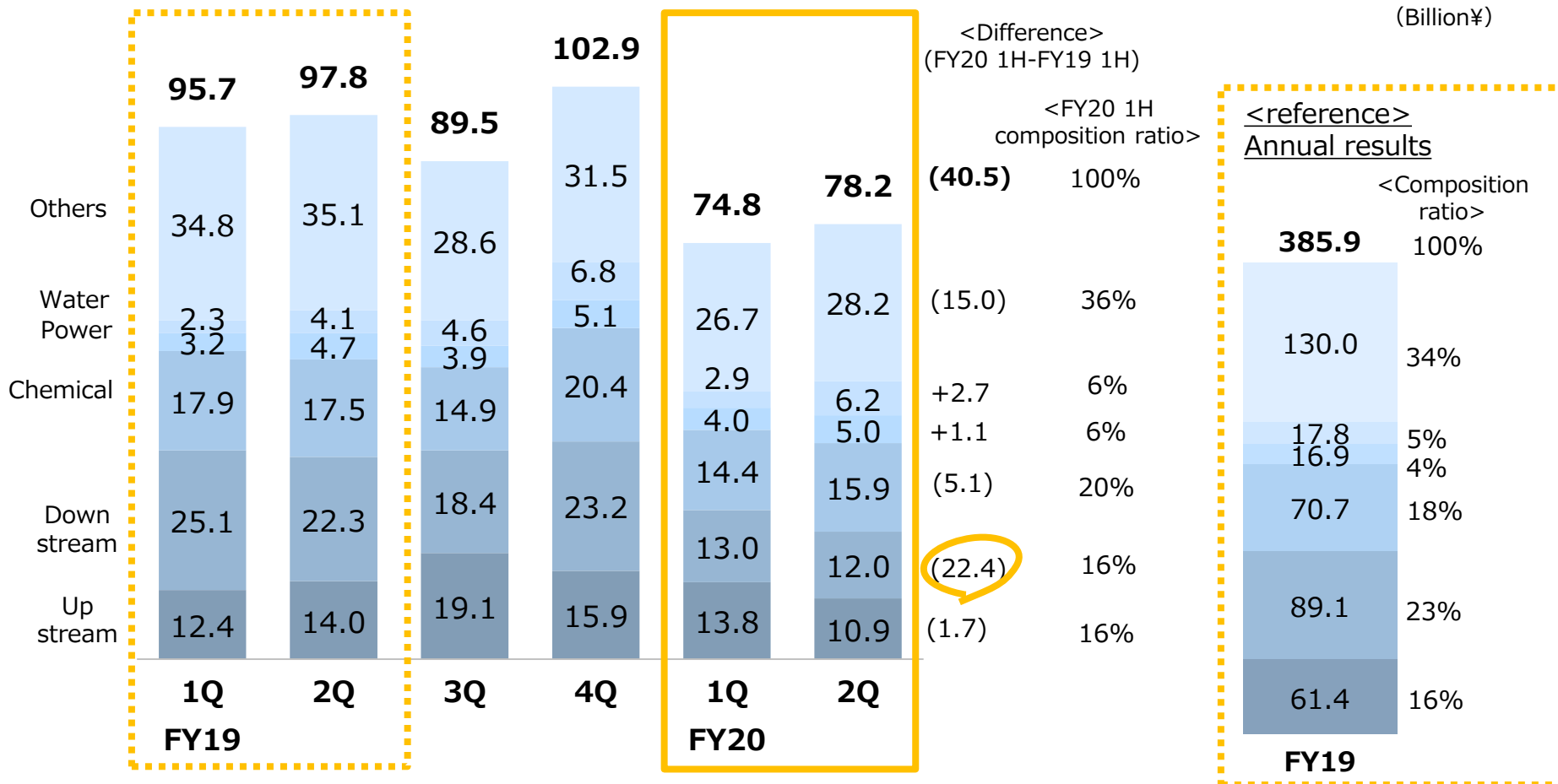
Sales	FY19 1H (A)	FY20 1H (B)	Difference (B-A)
Japan	49.6	47.4	(2.2)
Asia	57.6	54.0	(3.6)
(South-eastern Asia and Far East)	30.4	27.7	(2.7)
(China)	19.9	21.6	1.7
(India)	7.3	4.7	(2.6)
Europe and CIS	24.5	20.3	(4.2)
Middle East and Africa	25.1	19.4	(5.7)
North America	14.3	15.1	0.8
Central and South America	4.3	3.8	(0.5)
Outside Japan	125.8	112.6	(13.2)
Consolidated	175.4	160.0	(15.4)
Exchange rate 1\$ =	¥108.67	¥106.39	(¥2.28)



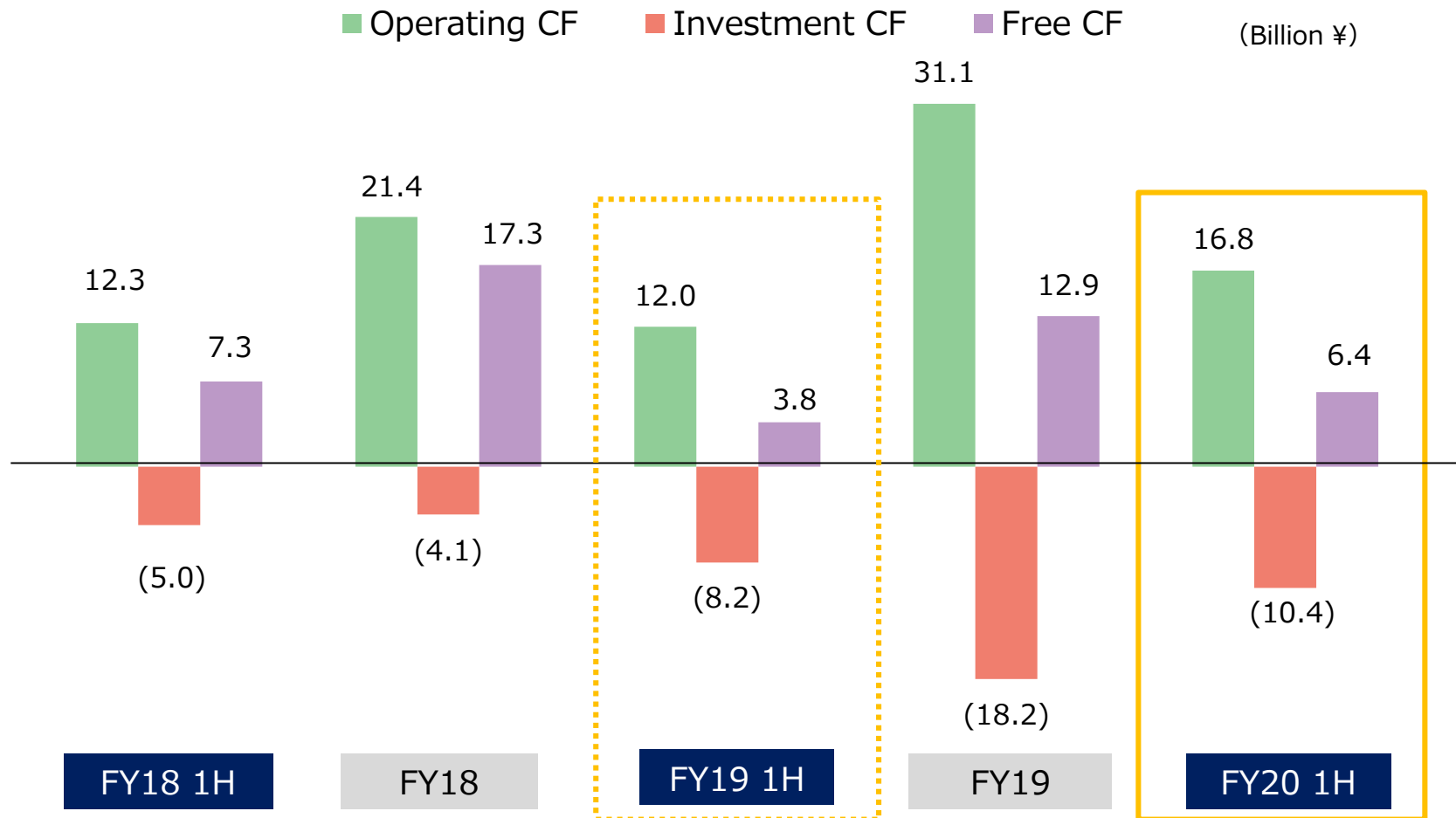
# Orders by Industry in Control Segment

◆ In energy-related industries, orders were severely impacted by the COVID-19 crisis, and large project orders were down from the previous year.

(Billion¥)



# Trend of Cash Flow



# FY20 Forecast → Change from Aug 12, 2020

◆ In an uncertain business environment, where people continue to search for the right balance between measures to prevent the spread of COVID-19 and efforts to resume normal business activities, there have been no significant changes to the company's sentiment that the macro economy will recover at a gradual pace toward the end of the fiscal year. However, we have revised the forecast based on the 1H results.

Note: The FY20 crude oil price is expected to remain at around \$30-\$40/barrel.

(Billion¥)

	FY19 (A)	FY20 Forecast (8/12 B)	FY20 Forecast (11/4 C)	Difference (C-A)	Growth rate (C÷A-1)
Orders	418.7	350.0 ~ 380.0	<b>360.0</b>	(58.7)	(14.0%)
Sales	404.4	360.0 ~ 390.0	<b>375.0</b>	(29.4)	(7.3%)
Operating income	35.6	23.0 ~ 30.0	<b>30.0</b>	(5.6)	(15.7%)
ROS (%)	8.8	6.4 ~ 7.7	8.0	(0.8pts)	—
Ordinary income	36.3	23.0 ~ 30.0	<b>30.0</b>	(6.3)	(17.4%)
Profit before income taxes	25.8	22.0 ~ 29.0	29.0	+3.2	+12.4%
Tax, etc.	11.1	8.0 ~ 10.0	10.0	(1.1)	(9.9%)
Profit attributable to owners of parent	14.7	14.0 ~ 19.0	<b>19.0</b>	+4.3	+29.4%
EPS (¥)	55.02	52.45 ~ 71.18	<b>71.18</b>	+16.16	+29.4%
Exchange rate	1\$ = ¥108.96	¥105.00	<b>¥105.00</b>	(¥3.96)	—

# FY20 forecast : By segment → Change from Aug 12, 2020

(Billion¥)

FY20 Forecast (11/4)			Forecast	(Ref.) Forecast (8/12)
Control	Orders	329.0	Mainly outside Japan, a significant year-on-year increase in the number of system projects is expected due to the continued delay in customers' investment decisions and intensifying price competition caused by declining energy demand. There is an increased risk of delays in the next fiscal year for large projects in the Middle East and other regions. There is no change in our view that the economy in Japan will recover toward the end of the fiscal year. The MRO business is receiving some inquiries, but COVID-19 continues to have a significant impact in markets such as North America, India, and the Middle East. The consulting business has been severely affected by restrictions on travel and this has continued to have a severe impact on KBC. COVID-19 will continue to have a major impact on regions other than China, Japan, and Latin America.	321.0~348.0
	Sales	344.0	Although there was a large order backlog at the beginning of the fiscal year, this decreased in the first half due to a decline in orders. However, taking the recording of sales into account, we expect that orders in the second half of the fiscal year will allow us to achieve the forecast.	330.0~357.0
	Operating income	31.0	We continue to deal with rising distribution costs due to the shortage of freight services and the risk of declining gross profits due to intensified price competition. We will implement thorough Group-wide cost reduction measures. (Fixed costs for engineering, production, etc. will be reduced in response to the decrease in sales; strategic costs for remote support, post-corona business, IT investment, etc. will continue.)	24.0~30.0
Measurement	Orders	25.0	In the measuring instruments business, although many sales inquiries have been received in China, the business environment is deteriorating in other regions including Japan, and orders and sales are expected to decline. The life science business (confocal scanner units, etc.) is expected to remain firm.	24.0~26.0
	Sales	25.0		24.0~26.0
	Operating income	0.5		0.0~0.5
Aviation and Other	Orders	6.0	Airlines and aircraft manufacturers have been heavily impacted by COVID-19, and it is expected that their businesses will continue to trend sharply downward.	5.0~6.0
	Sales	6.0		6.0~7.0
	Operating income	(1.5)	—	(1.0)~(0.5)

\* The volume of orders received by each segment is still uncertain and may need to be reviewed depending on future trends.

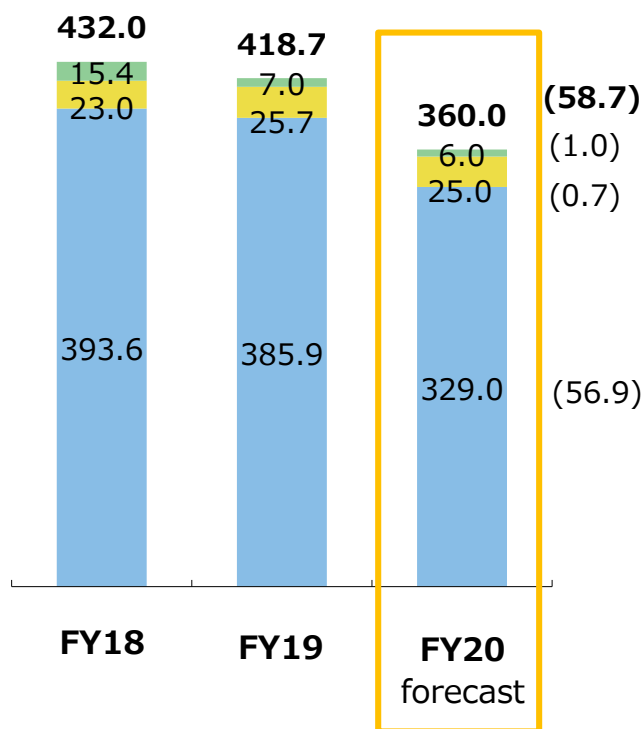
\* The reduction in SG&A due to thorough cost reduction measures and restrictions on travel has been reflected in operating income forecasts for each segment.

# FY20 Forecast for Orders, Sales, and Operating Income by Segment→ Change from Aug 12, 2020

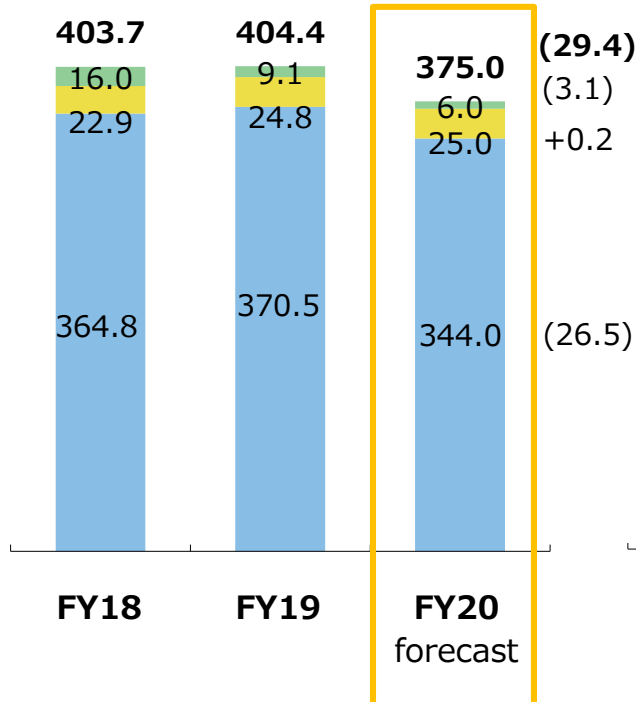
■ Control ■ Measurement ■ Aviation and Other

(Billion¥)

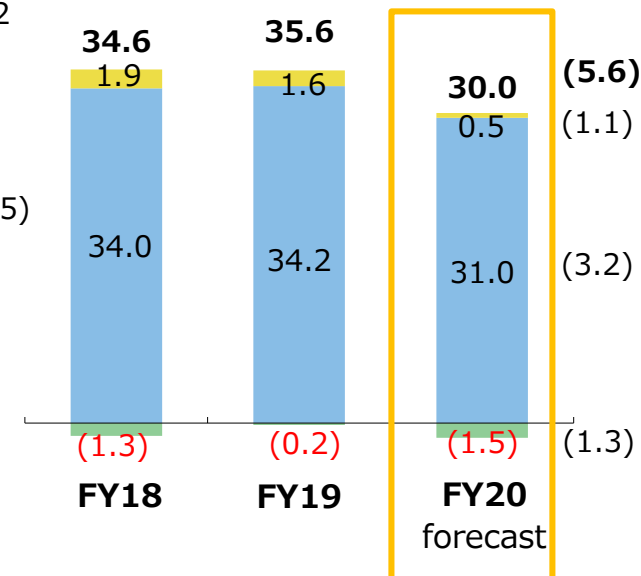
## Orders



## Sales



## Operating income



# FY20 Forecast for Control Orders and Sales by Region

→ Change from Aug 12, 2020

(Billion¥)

Orders	FY19 Results (A)	FY20 Forecast (B)	Difference (B-A)
<b>Japan</b>	<b>115.4</b>	<b>109.5</b>	<b>(5.9)</b>
Asia	122.7	109.5	(13.2)
(South-eastern Asia and Far East)	62.8	56.0	(6.8)
(China)	42.3	42.5	0.2
(India)	17.6	11.0	(6.6)
Europe and CIS	49.7	39.0	(10.7)
Middle East and Africa	56.8	40.0	(16.8)
North America	32.2	21.0	(11.2)
Central and South America	9.1	10.0	0.9
<b>Outside Japan</b>	<b>270.5</b>	<b>219.5</b>	<b>(51.0)</b>
<b>Consolidated</b>	<b>385.9</b>	<b>329.0</b>	<b>(56.9)</b>
Exchange rate 1\$ =	¥108.96	¥105.00	(¥3.96)

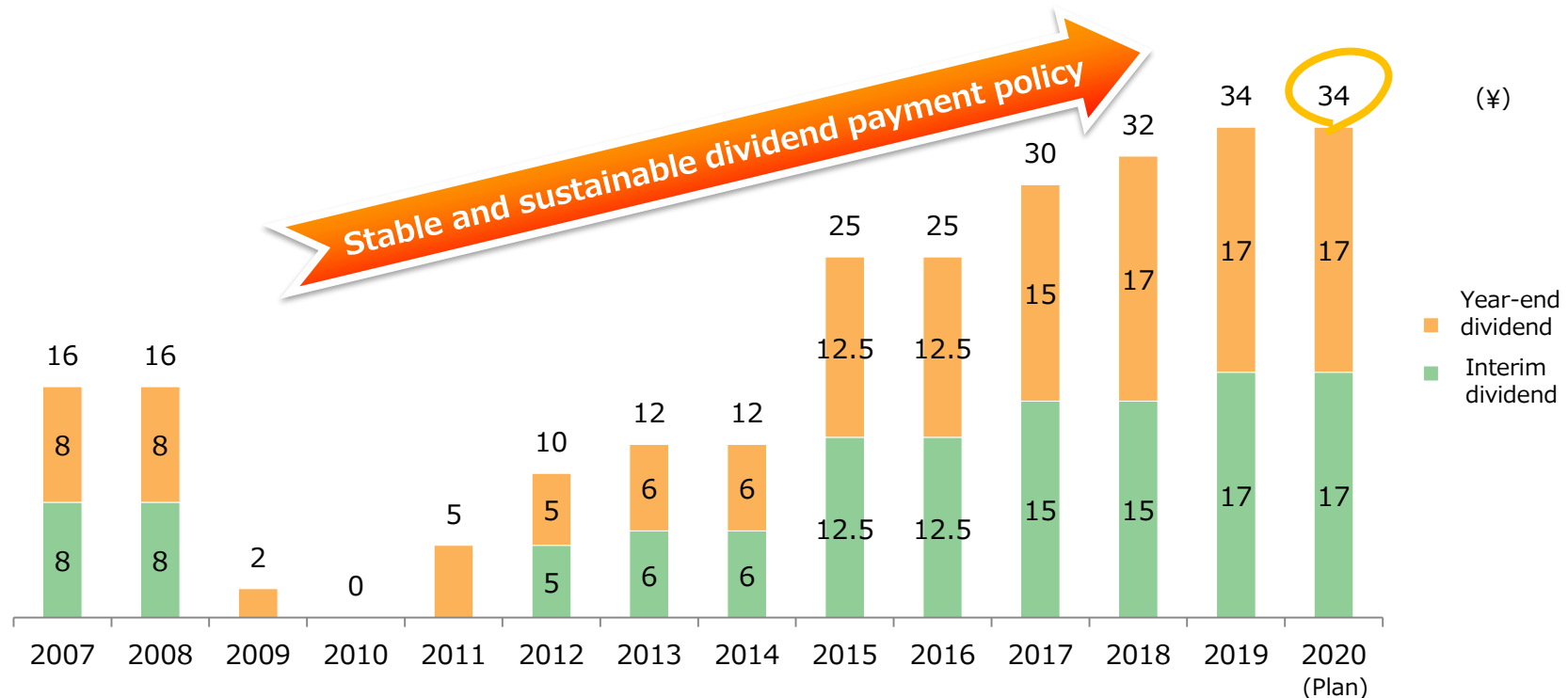
Sales	FY19 Results (A)	FY20 Forecast (B)	Difference (B-A)
<b>Japan</b>	<b>109.8</b>	<b>108.5</b>	<b>(1.3)</b>
Asia	118.4	109.5	(8.9)
(South-eastern Asia and Far East)	61.9	54.0	(7.9)
(China)	42.5	45.5	3.0
(India)	14.0	10.0	(4.0)
Europe and CIS	50.0	41.0	(9.0)
Middle East and Africa	54.1	46.0	(8.1)
North America	29.4	30.0	0.6
Central and South America	8.8	9.0	0.2
<b>Outside Japan</b>	<b>260.7</b>	<b>235.5</b>	<b>(25.2)</b>
<b>Consolidated</b>	<b>370.5</b>	<b>344.0</b>	<b>(26.5)</b>
Exchange rate 1\$ =	¥108.96	¥105.00	(¥3.96)

# Dividend

- The decision has been made to pay a ¥17 interim dividend.  
<No change>
- The FY20 annual dividend will remain at a record high level.

**FY19: ¥34 (payout ratio 61.8%)**

**FY20: ¥34 (payout ratio 47.8%)**



# Financial Appendix:

- Quarterly Financial Results
- Non-operating / Extraordinary Income and Expenses
- Order Backlog Trend by Segment
- Trend of R&D Expenses, Depreciation, and CAPEX
- Trend of Balance Sheet
- Trend of Stock Price



# Appendix: Quarterly Financial Results

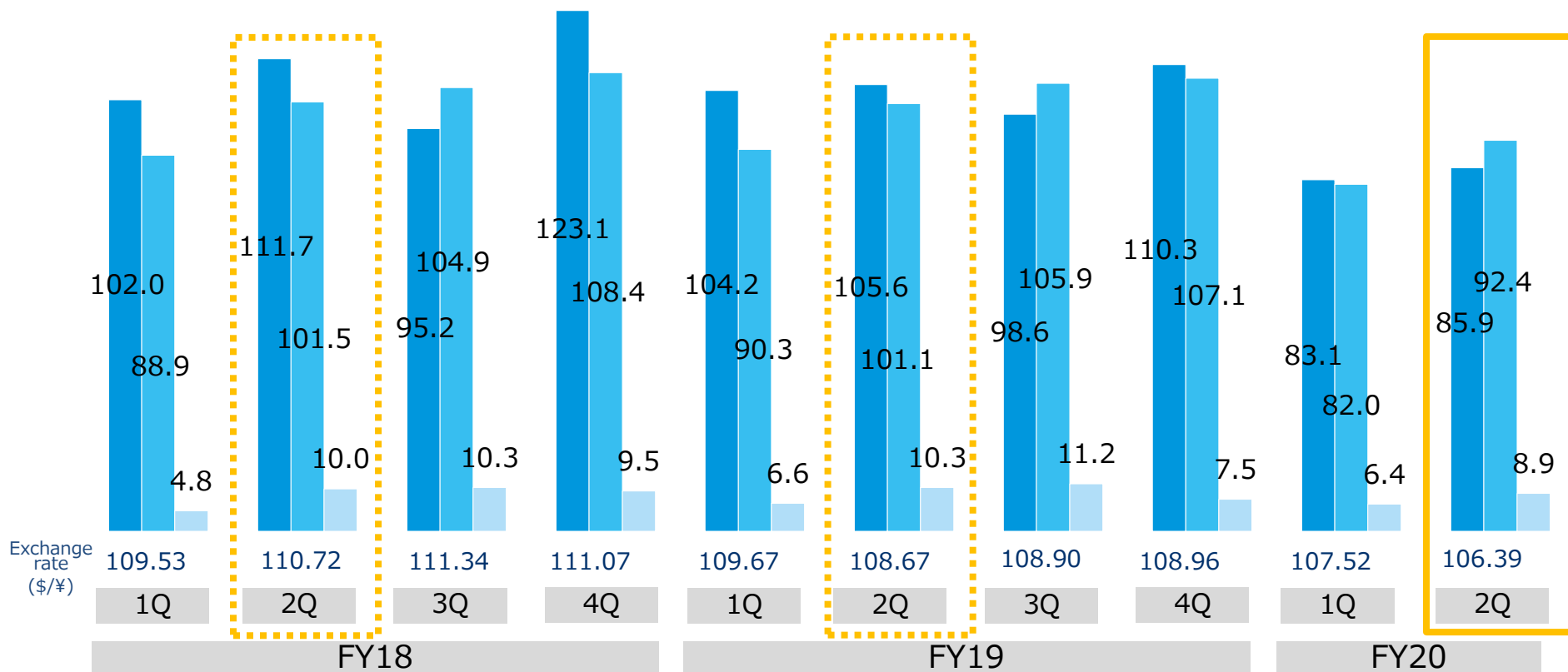
- ◆ Sales and operating income tend to be higher in 2Q and 4Q, and this trend is particularly strong in the Japanese control segment.

Impact of transfer of subsidiary's shares

FY19 Orders : -¥2.8 billion sales : -¥2.0 billion operating income : -¥0.2 billion

■ Orders ■ Sales ■ Operating income

(Billion ¥)



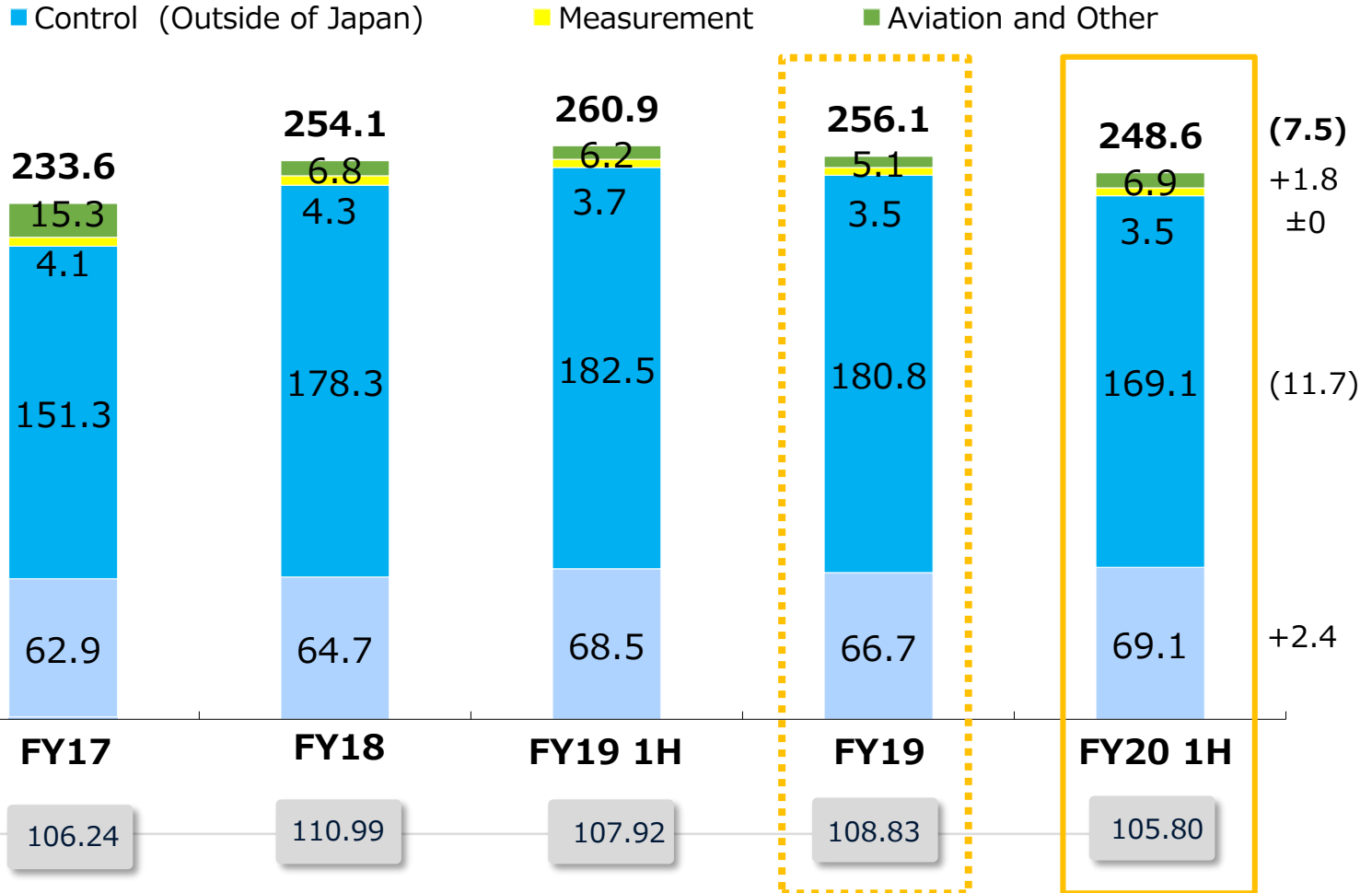
# Appendix: Non-operating /Extraordinary Income and Expenses

(Billion ¥)

	FY19 1H	FY20 1H
Operating income	16.9	15.3
Non-operating income	1.9	1.9
Non-operating expenses	1.8	1.0
Ordinary income	17.0	16.3
Extraordinary income	2.4	0
Extraordinary expenses	3.2	1.4
Income before tax	16.2	14.9
Tax, etc.	6.3	5.1
Profit attributable to owners of parent	9.9	9.8
(Effective tax rate)	33.5%	28.3%

# Appendix: Order Backlog Trend by Segment

(Billion¥)

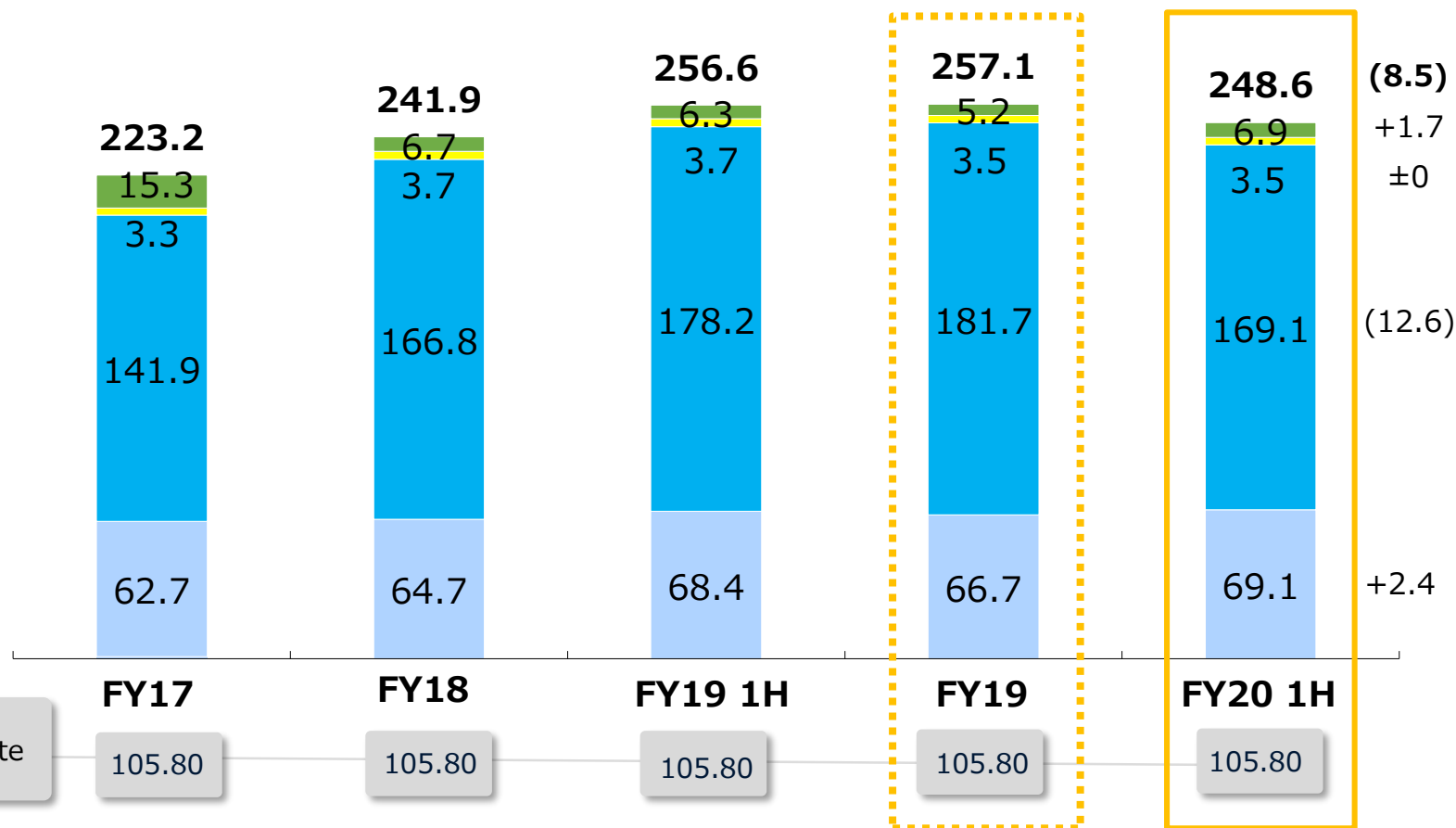


\*Refined segment classification and revised FY19 numbers

# <Reference> Order Backlog Trend by Segment (Using FY20 1H exchange rate)

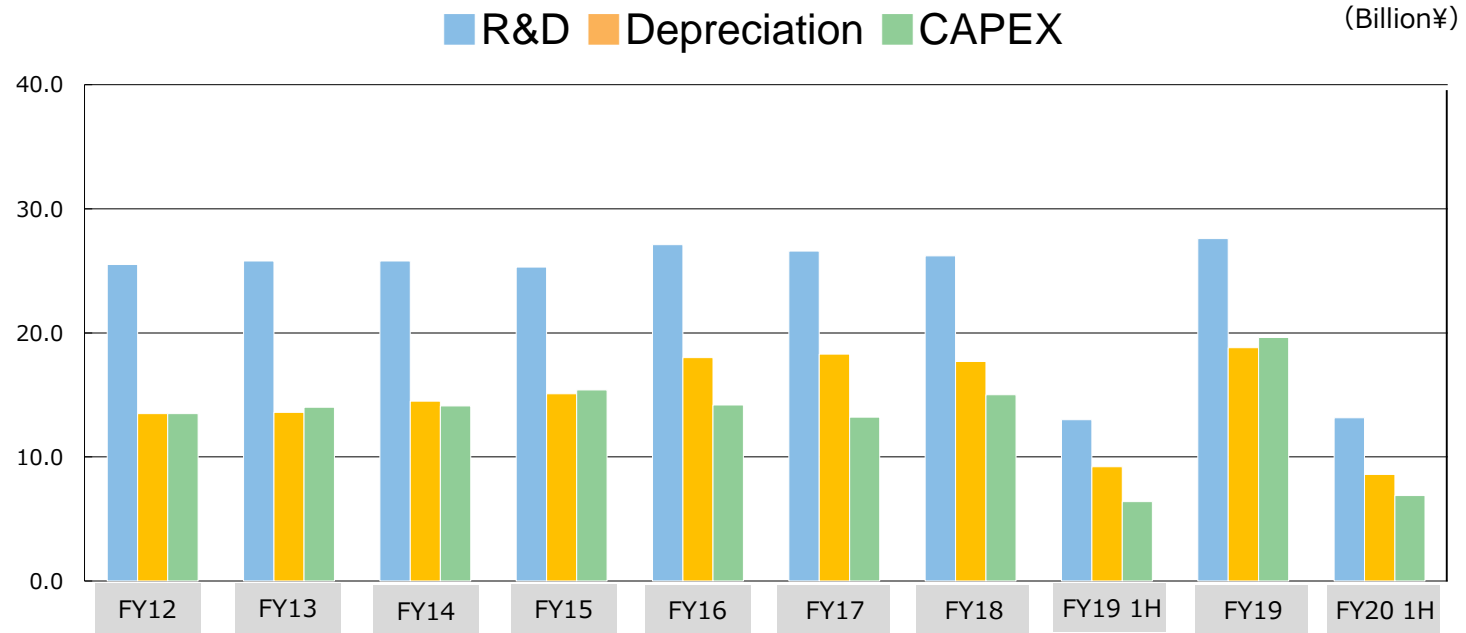
(Billion¥)

■ Control (Japan) ■ Control (Outside of Japan) ■ Measurement ■ Aviation and Other



\*Refined segment classification and revised FY19 numbers

# Appendix: Trend of R&D Expenses, Depreciation, and CAPEX



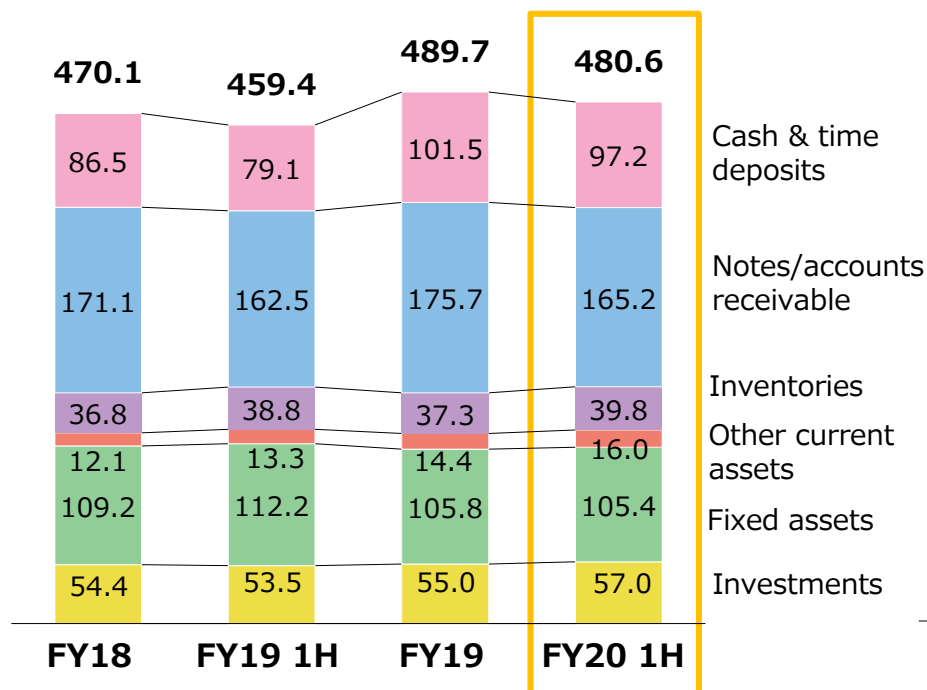
	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19 1H	FY19	FY20 1H
R&D expenses (% of sales)	25.5 7.3%	25.8 6.6%	25.8 6.4%	25.3 6.1%	27.1 6.9%	26.6 6.5%	26.2 6.5%	13.0 6.8%	27.6 6.8%	13.2 7.6%
Depreciation (% of sales)	13.5 3.9%	13.6 3.5%	14.5 3.6%	15.1 3.6%	18.0 4.6%	18.3 4.5%	17.7 4.4%	9.2 4.8%	18.8 4.6%	8.6 4.9%
CAPEX (% of sales)	13.5 3.9%	14.0 3.6%	14.1 3.5%	15.4 3.7%	14.2 3.6%	13.2 3.2%	15.0 3.7%	*6.4 3.4%	19.6 4.9%	6.9 4.0%

\*The Group's consolidated subsidiaries outside Japan have adopted IFRS 16 (Leases) in FY19.

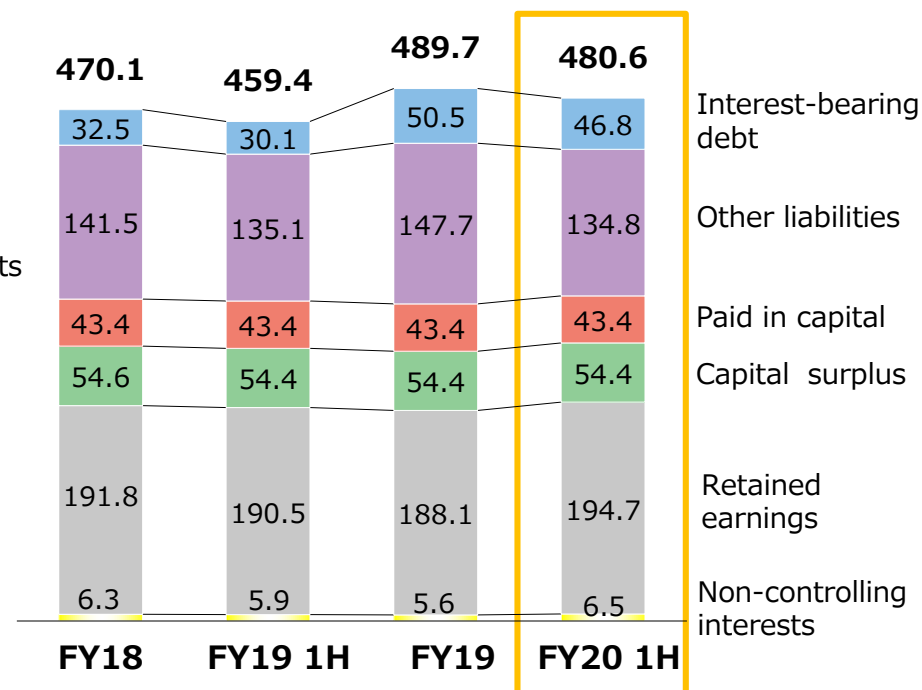
# Appendix: Trend of Balance Sheet

(Billion¥)

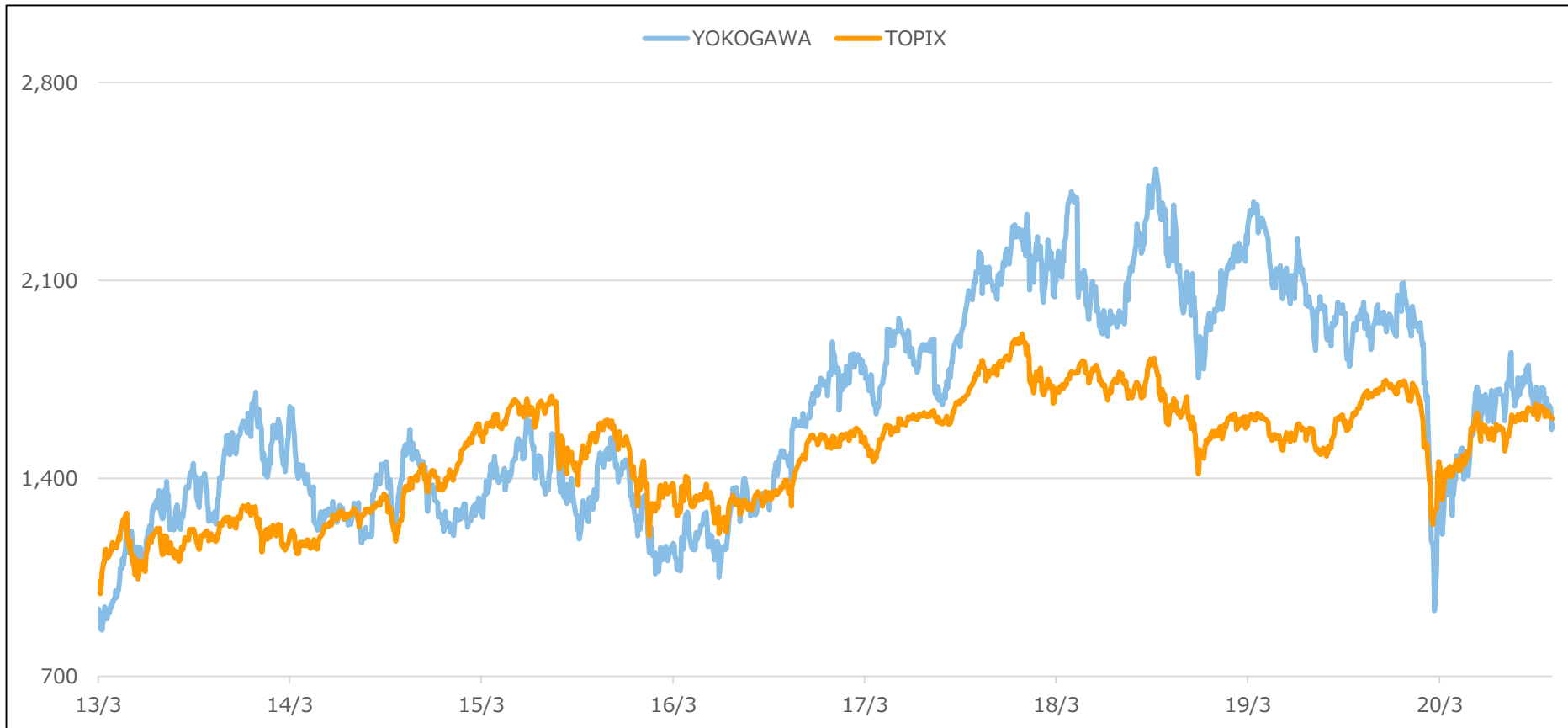
## Assets



## Liabilities and equity



# Appendix: Trend of Stock Price



(¥)

	13/3	14/3	15/3	16/3	17/3	18/3	19/3	19/6	19/9	19/12	20/3	20/6	20/9	20/10/29
Yokogawa	946	1,667	1,295	1,163	1,752	2,198	2,291	2,112	1,977	1,929	1,303	1,680	1,665	1,588
TOPIX	1,035	1,203	1,543	1,347	1,512	1,716	1,592	1,551	1,588	1,721	1,403	1,559	1,625	1,611

Yokogawa Electric Corporation

**Financial Results for 1<sup>st</sup> half of Fiscal Year 2020**  
(April 1 – September 30, 2020)

# **Current Situation and Yokogawa's Future**

***Transformation* 2020**  
~ Transform and achieve further growth ~  
(Special Feature: Yokogawa's DX )

**Hitoshi Nara**

President and Chief Executive Officer

November 4, 2020





- 1. Current situation**  
(External environment and risks and opportunities)
- 2. Transformation 2020 (TF2020) mid-term business plan – Yokogawa's DX -**
- 3. Yokogawa's future**
- 4. Appendix**

# Changes to environment & Yokogawa's strengths

- With a sense of crisis, accelerate "shift to growth model that is not dependent on conventional energy resources"
- Making use of our strengths, **pursue IA2IA growth opportunities**

## 〈Changing environment〉

### Energy resource trends

Slowing economic growth in emerging countries

Decarbonization

Shale oil & gas boom

Role of oil

### Pressing need to address social issues

SDGs



Paris-agreement COP21

TCFD

Need for localization

COVID 19

### Innovations in digital technology

IIoT

Blockchain

AI

Big data



## 〈Yokogawa's strengths〉

### Industry know-how

Pharma

Chemical

LNG

Power

Down Stream

Water

Food & Beverage

### Rich installed base mainly in Asia and Middle East

Japan

Middle East

Southeast Asia

China

### Problem-solving capabilities

Hands-on approach

Trust

Co-creation



IA2IA\*

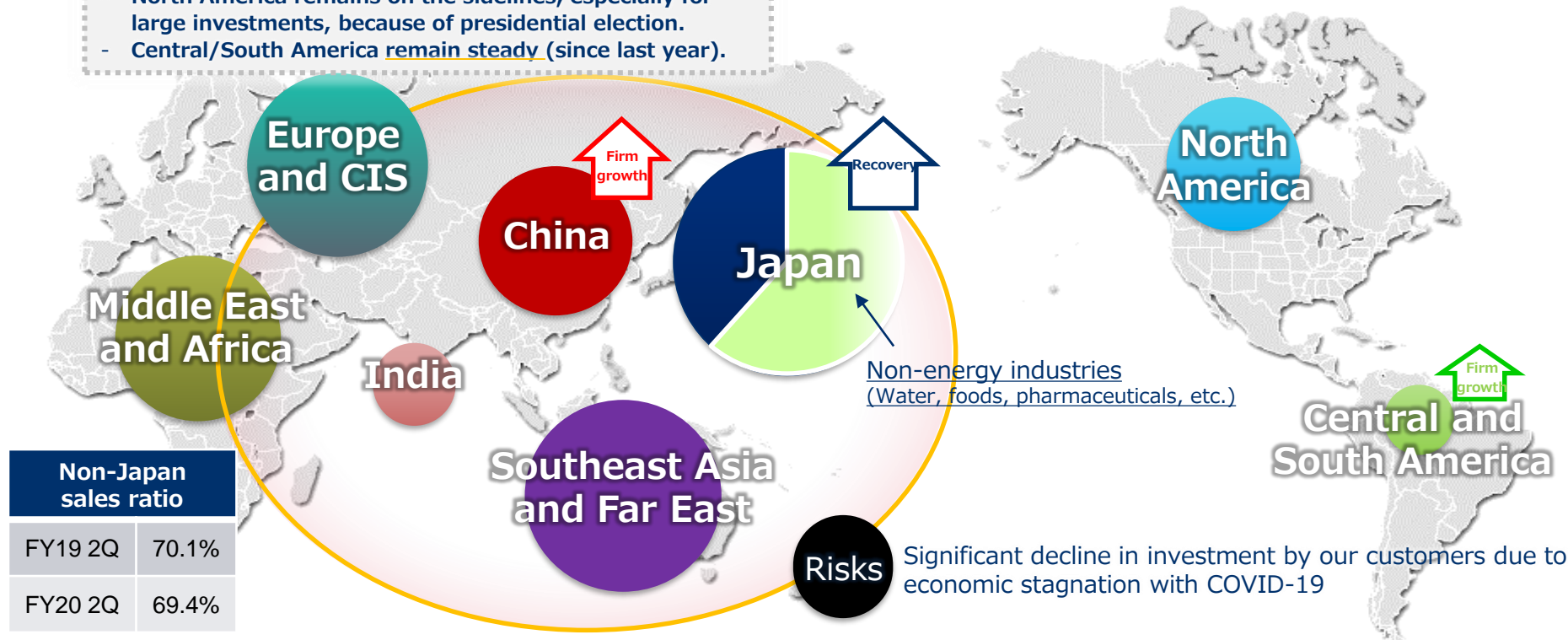
\*Industrial Automation to Industrial Autonomy

# Current situation by region and industry

The situation continues to be severe due to COVID-19, but there are differences depending on the regions and industries.

- Regions**
- Japan is recovering, centering on OPEX.
  - Although competition is severe, our business in China remains on a relatively firm footing.
  - Conditions in Southeast Asia, the Far East, and India are severe, but some project orders have been received.
  - Conditions remain severe in Europe and the CIS.
  - Conditions are severe and investment decisions delayed in Middle East and Africa, but some projects underway.
  - North America remains on the sidelines, especially for large investments, because of presidential election.
  - Central/South America remain steady (since last year).

- Industries**
- Due to declining energy demand, upstream and downstream market conditions are severe.
  - Chemical industry shows signs of improvement in specialty chemicals segment.
  - Foods and pharmaceuticals continue to be strong due to increased demand.
  - Severe downward trend in thermal power generation, but demand for renewable energy is increasing.

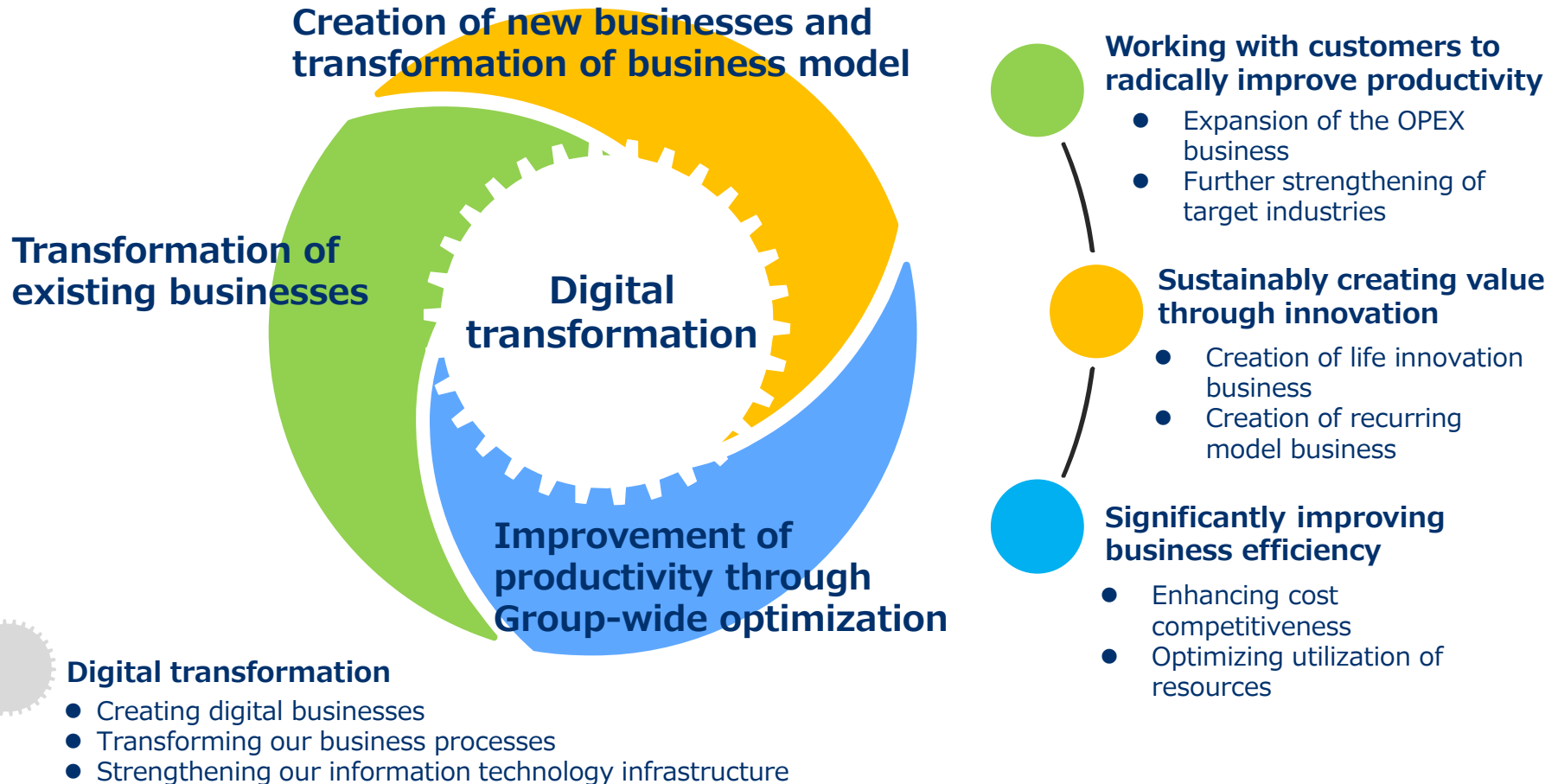


# Initiatives for *Transformation 2020*




- **TF2020 basic strategy**
  - ① **Transformation of existing businesses**
  - ② **Creation of new businesses and transformation of business model**
  - ③ **Improvement of productivity through Group-wide optimization**
- **Digital transformation (Yokogawa's DX)**

**Creating opportunities and  
consolidating a foundation for growth**

## Transform our businesses to achieve a sustainable society



# Strategic initiatives: Three basic strategies

Strategies	Goals	Status of Activities
 <p>Transformation of existing businesses</p>	<ul style="list-style-type: none"> <li>• <b>Focusing on our installed base to expand the OPEX business</b> OPEX growth overseas: 7 to 10% per year</li> <li>• <b>Further strengthening in target industries (chemical, renewable energy)</b> Targeted growth: 3 to 5% per year</li> </ul>	<ul style="list-style-type: none"> <li>• Received the largest-ever DX integration project order in collaboration with KBC (Middle East)</li> <li>• <b>Growing our remote business (SensPlus Note, etc.)</b></li> <li>• <b>Enhancing external DX (→ after p.37)</b></li> <li>• Signed strategic alliance agreement with Saudi Basic Industries Corporation (SABIC)</li> <li>• <b>Invested in chemical recycling company</b></li> <li>• Large wind-power plant with Yokogawa control system comes online (Japan) (→p.31)</li> </ul>
 <p>Creation of new businesses and transformation of business model</p>	<ul style="list-style-type: none"> <li>• <b>Creation of life innovation business</b> Through new businesses, increase orders* 2 to 3 times by FY20 (compared to FY17 result of approx. 12 billion yen) *Orders for pharmaceutical and food industries</li> <li>• <b>Moving to a recurring business model</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Acquired and commercialized a nanopipette technology, and launched sales</b></li> <li>• Acquired Fluid Imaging Technologies, a provider of flow imaging particle analysis solutions</li> <li>• <b>Invested in bio startup Bloom Biorenewables (Switzerland)</b></li> <li>• Acquired Danish startup Grazper Technologies, specialists in AI for image analytics, to <b>strengthen our proposal capabilities</b></li> </ul>
 <p>Improvement of productivity through Group-wide optimization</p>	<ul style="list-style-type: none"> <li>• <b>Continuous cost reduction (production, logistics, and procurement)</b></li> <li>• <b>Optimization of organizational structure</b></li> <li>• <b>Highly skilled personnel</b></li> </ul>	<ul style="list-style-type: none"> <li>• Optimizing procurement and logistics costs</li> <li>• Expanding use of global delivery centers*</li> <li>• Introduced RPA to boost business efficiency (<b>approx. 40,000 manhour reduction</b>)</li> <li>• <b>Accelerating business process outsourcing (BPO)</b></li> <li>• Utilization of Yokogawa University</li> </ul> <p>*Formerly called central engineering centers</p>

# Target industry: Renewable energy



Collaboration in the fields of wind power, solar power, biomass, and geothermal power generation

## Key points

- Providing solutions for monitoring/control, data measurement, equipment maintenance, etc.
- Expanding our business portfolio by collaborating with other companies that have know-how

## SDGs



## <Examples of efforts to realize a low-carbon society>

- With the aim of realizing a low-carbon society, reached agreement with Goldwind Group (a Chinese company with 20 years' experience in wind power generation business) to use each other's technologies
- One of Japan's largest wind power plants (Wind Farm Tsugaru) comes online with Yokogawa control system
  - ➔ Integrated monitoring and control of 38 wind turbines and a total power generation capacity of 121,600 kW
  - ➔ The latest technologies have been applied, and it is expected that this will greatly contribute to the wind power generation industry and the revitalization of local industry.



# Appendix: Control segment order trend, by project size

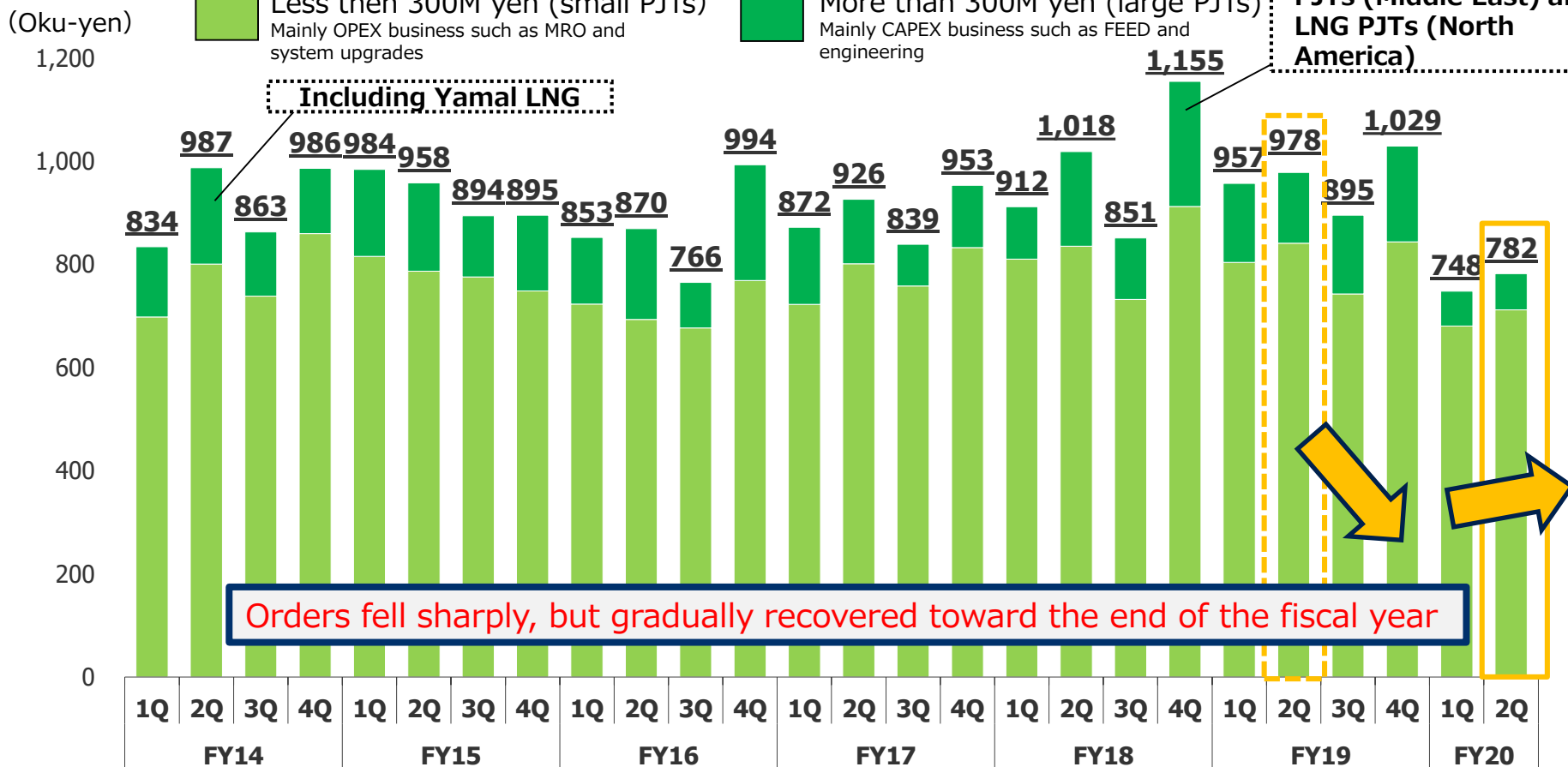
Large projects (300 million yen\* or larger) account for only 10-15% of control segment revenues.

\* Approx. US\$3 million

**Less than 300M yen (small PJTs)**  
Mainly OPEX business such as MRO and system upgrades

**More than 300M yen (large PJTs)**  
Mainly CAPEX business such as FEED and engineering

Including downstream PJTs (Middle East) and LNG PJTs (North America)



Orders fell sharply, but gradually recovered toward the end of the fiscal year


	FY14				FY15				FY16				FY17				FY18				FY19				FY20	
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
USD	101.71	103.53	107.7	110.58	121.78	121.75	121.63	119.99	108.53	102.91	107.64	108.95	111.42	111.29	111.77	110.7	109.53	110.72	111.34	111.07	109.67	108.67	108.9	108.96	107.52	106.39



# Digital transformation (DX)



**Create value in-house (Internal DX) that will allow us to deliver more value to our customers (External DX).**

Strategies	Goals	Status of activities
	<div>Value for Yokogawa</div> <div>↓</div> <div>Value for customers</div>	<ul style="list-style-type: none"> <li>•Global optimization of application programs                     <ul style="list-style-type: none"> <li>➔12% reduction compared to FY18. Plan a total reduction of 20% in the FY18 to FY20 timeframe</li> </ul> </li> <li>•Implementation of hybrid cloud IT infrastructure                     <ul style="list-style-type: none"> <li>➔Achieved cloud implementation rate of 57% in the first half of FY20. 60% or more targeted in FY20</li> </ul> </li> <li>•Speeding up realization of data-driven management through use of global data lake and BI tools                     <ul style="list-style-type: none"> <li>➔Expanded use of BI tools by introducing global data lake</li> </ul> </li> <li>•Acceleration of in-plant digitization                     <ul style="list-style-type: none"> <li>➔ Operation technology (OT) data lake system to integrate in-plant data started operation</li> </ul> </li> <li>•Use of RPA to automate internal operations                     <ul style="list-style-type: none"> <li>➔Reduced man-hours by over 40,000 hours in the first half of FY20. RPA is expanding globally</li> </ul> </li> <li>•Started digitization of customer experience (CX)                     <ul style="list-style-type: none"> <li>➔Launched measures to globally integrate sales, marketing, and service processes</li> </ul> </li> <li>•Launched DX Platform Center in Digital Enterprise Business HQ to accelerate DX in all business HQs                     <ul style="list-style-type: none"> <li>➔Released cloud-based energy management solution for enterprises</li> </ul> </li> <li>•Expansion of line-up of service products that make use of plant data                     <ul style="list-style-type: none"> <li>➔Released Collaborative Information Server (CI Server)</li> </ul> </li> <li>•Strengthening of security services business                     <ul style="list-style-type: none"> <li>➔Strengthened operation of security and other OT systems</li> </ul> </li> </ul>



FY18

FY19

FY20

FY21

### Creation of data-driven culture

Clarification of VDA deployment plan

Development at head office    Development overseas



VDA setup

No Excel,  
No Power Point

Tableau for  
important  
meetings

Tableau for  
important reports  
(about 1,800 reports)

### Visual analytics

Global deployment and VDA community building



Use case  
sharing



VDA community  
building

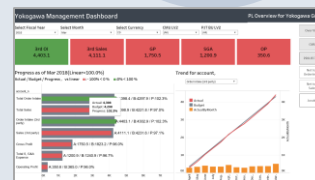
### Establishment

Establishment of predictive data analysis

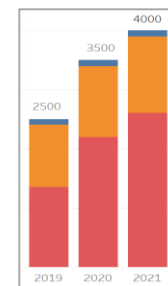
Establishment of data-driven culture



Popularization of  
business data analysis



Business data  
analysis  
monetization



Deployment of data analytics training

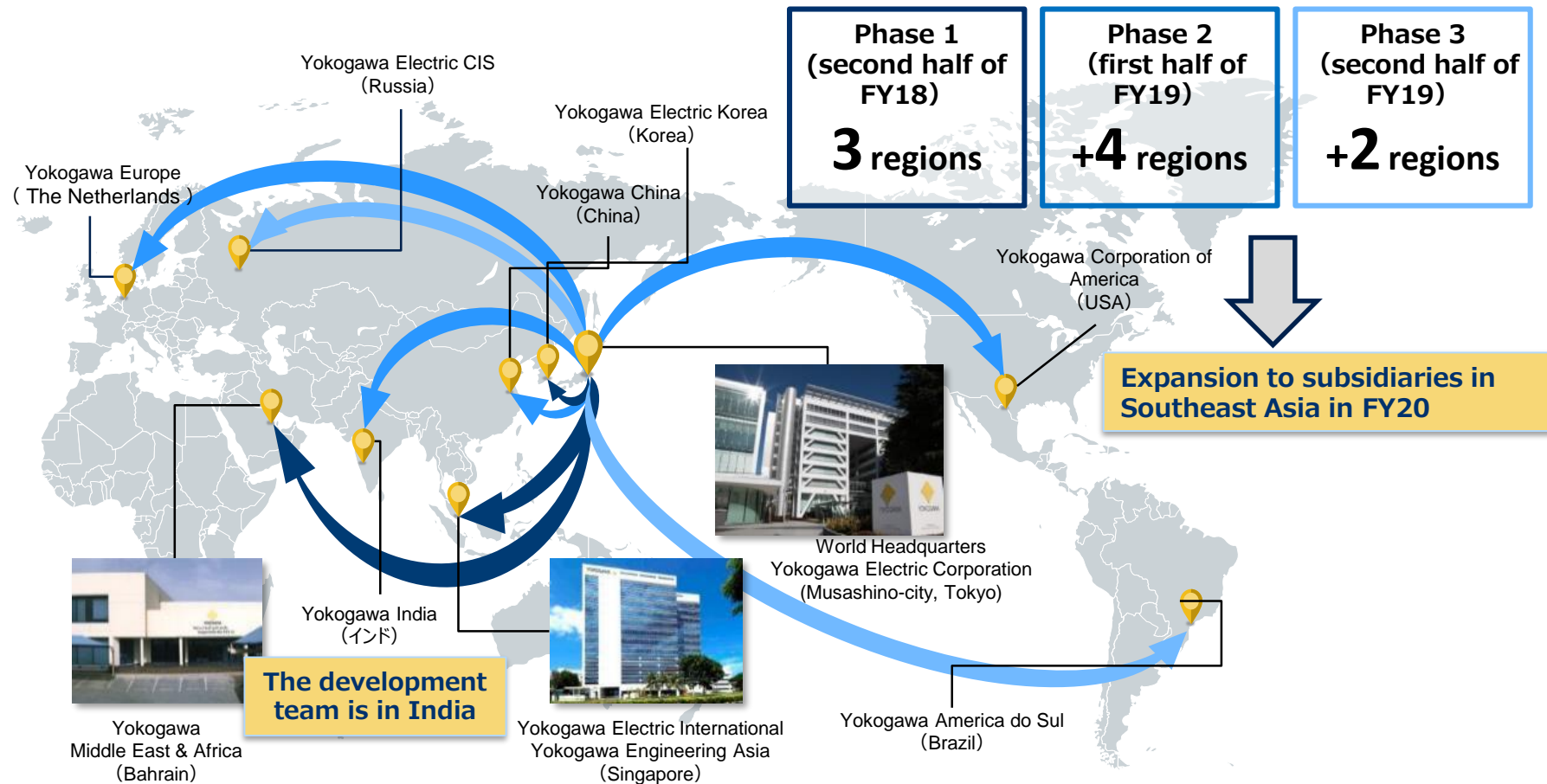
Improvement of productivity by eliminating reports

Realization of value-added data analysis

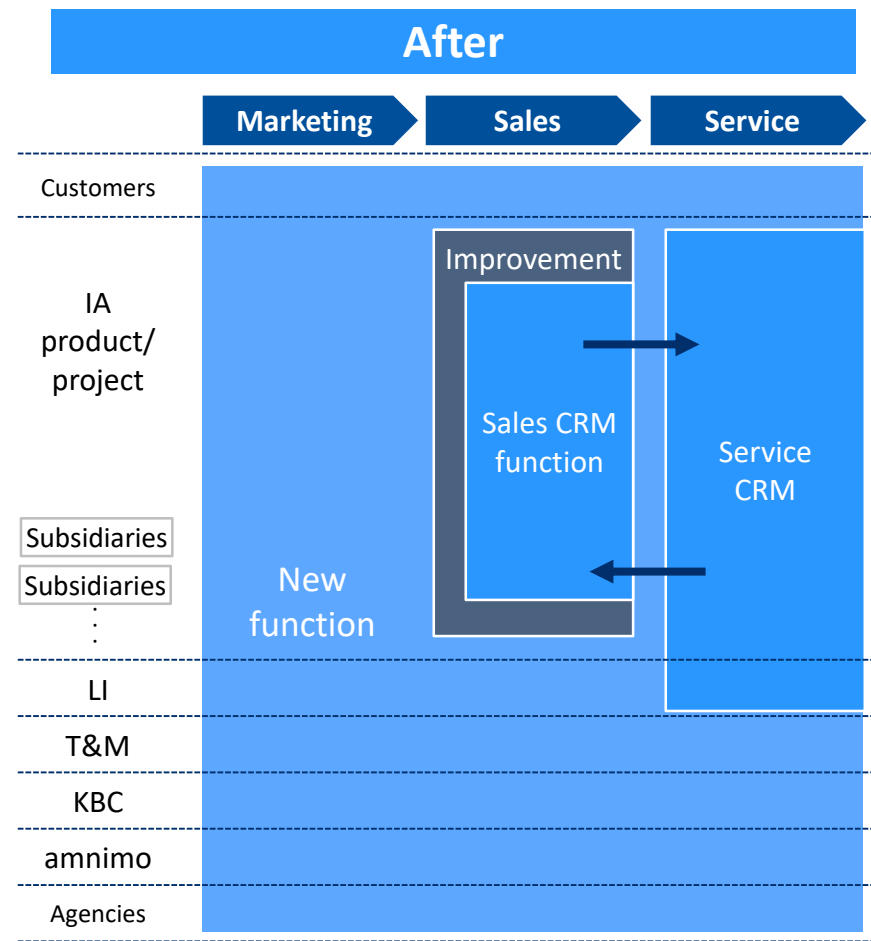
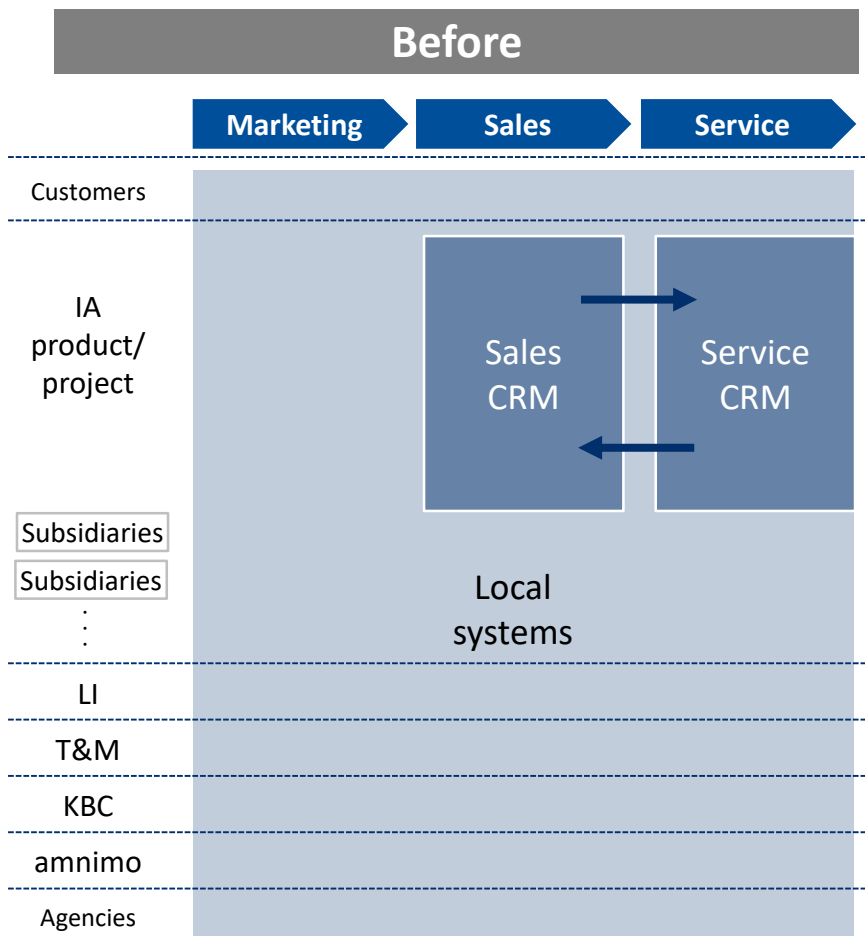
Increase in number of data analysts

- Expand the target area in each phase
- Contribute to optimization of SG&A

➔ **Over 40,000 man-hour reduction in the first half of FY20**



### Organic integration of marketing, sales, and services, and strengthening of inbound marketing





# External DX (1/4)

## Maturity level of DX (image)

### Key driver of DX

- Data integration through system integration and consolidation
- Number of Data analysts
- Number of AI engineers

### Digitization

### Digitalization

### Digital Transformation

### IA2IA

2018

Current

2023

2028

Current situation

STEP 1

STEP 2

STEP 3

### Back office operations

Partial centralization of operations

Operation centralization (by BPO)

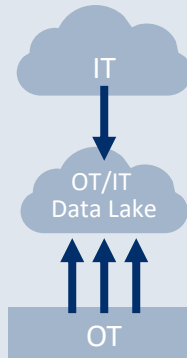
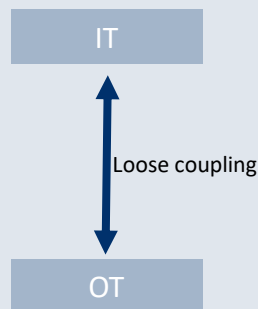
Automation (by RPA & AI/ML)

Autonomy (autonomous operations)

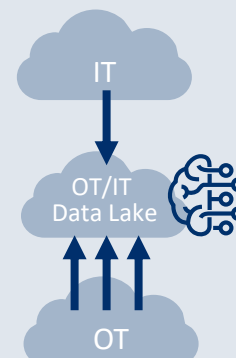
### System landscape

Globally integrated on the cloud  
ERP & other IT platforms

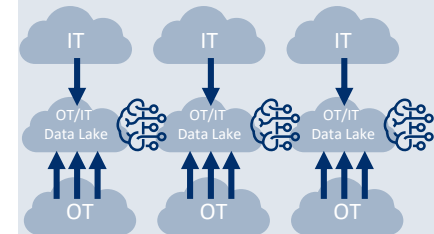
Globally integrated on the cloud  
ERP & other IT platforms



Site-based OT system  
On-premises type



Globally integrated OT system  
Cloud type



Process optimization across  
company boundaries

### Plant/factory business operations

Field-based operations

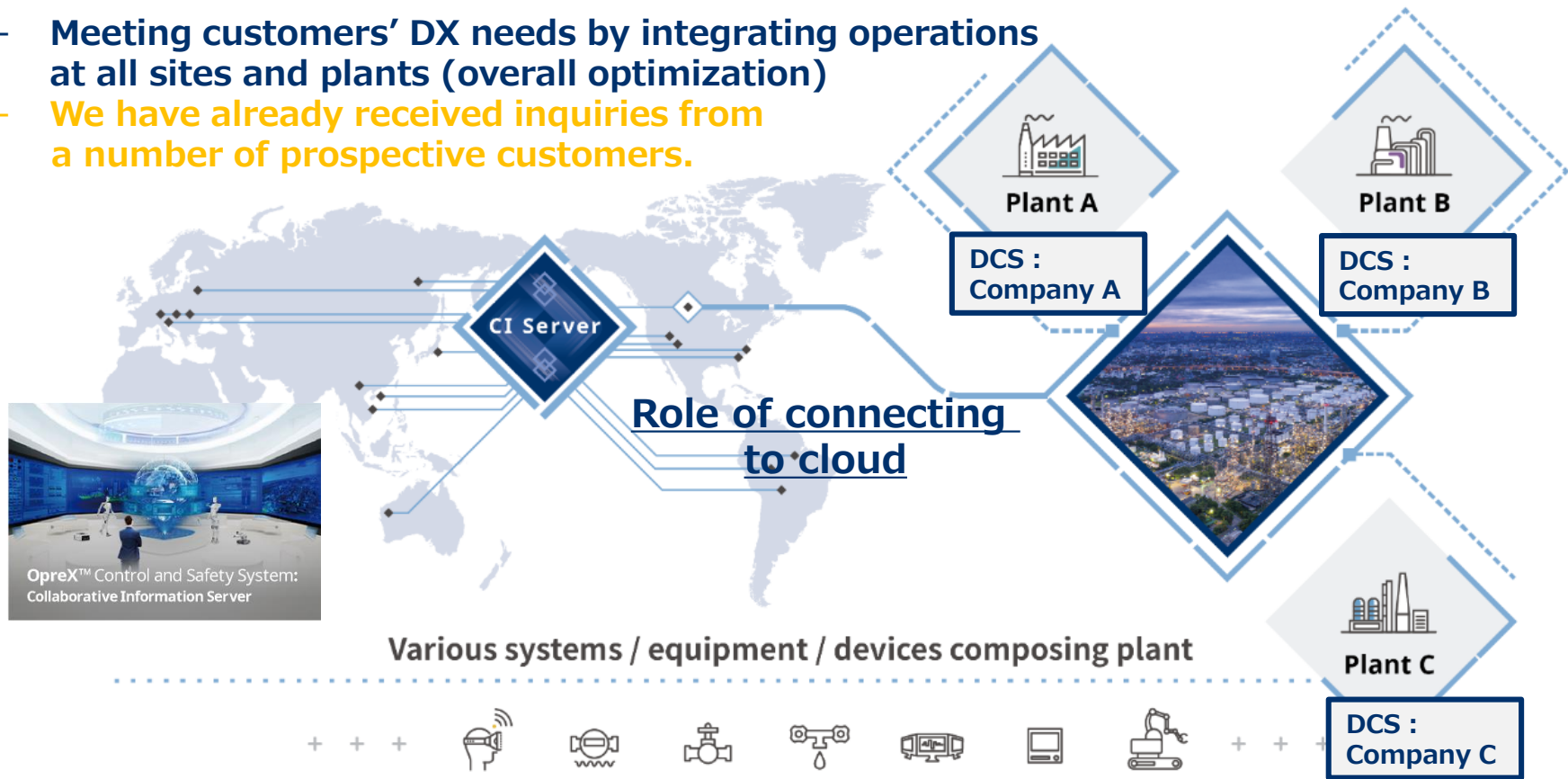
Partial centralization and remotization

Automation and remotization (by AI/ML)

Autonomy (autonomous operations)

### <NEW> Released on October 19

- Meeting customers' DX needs by integrating operations at all sites and plants (overall optimization)
- We have already received inquiries from a number of prospective customers.



CI server ➔ <https://www.yokogawa.com/solutions/products-platforms/control-system/ciserver/>



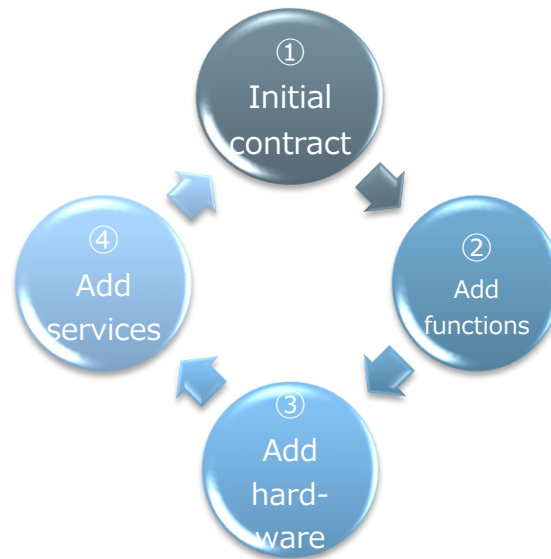
### Case 2: DaaS for emissions compliance flue gas analyzer

Creation of new businesses and transformation of business model

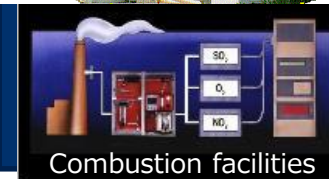
- Continuous emissions monitoring system (CEMS) service
  - Monthly flat-rate billing reduces initial investment by customer
  - Yokogawa handles collection of emissions data and reporting
  - Provision of additional functions as technology and regulations change (separate contract)
  - Includes maintenance

Transactional model tasks:  
• Respond to technological progress  
• Respond to stricter regulations

Recurring model tasks:  
• Enhance functionality with additional functions  
• Add hardware to comply with new regulations  
• Add new services



#### Environmental regulations



Combustion facilities



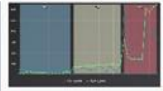

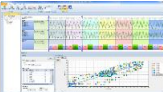
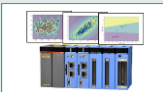

CEMS



### ◆Yokogawa's AI vision for understanding the present, predicting the future, and optimizing operations

- Approximately 50 artificial intelligence (AI) consultation projects using AI technology developed in-house have been delivered to date.
- With the Nara Institute of Science and Technology, we have developed a reinforcement learning algorithm that can be utilized for the automatic optimization of plant operations.
- In the future, automatic optimization of plant control will be realized on the cloud, and we will work to commercialize products targeting semiconductors and other large markets that require precision control.

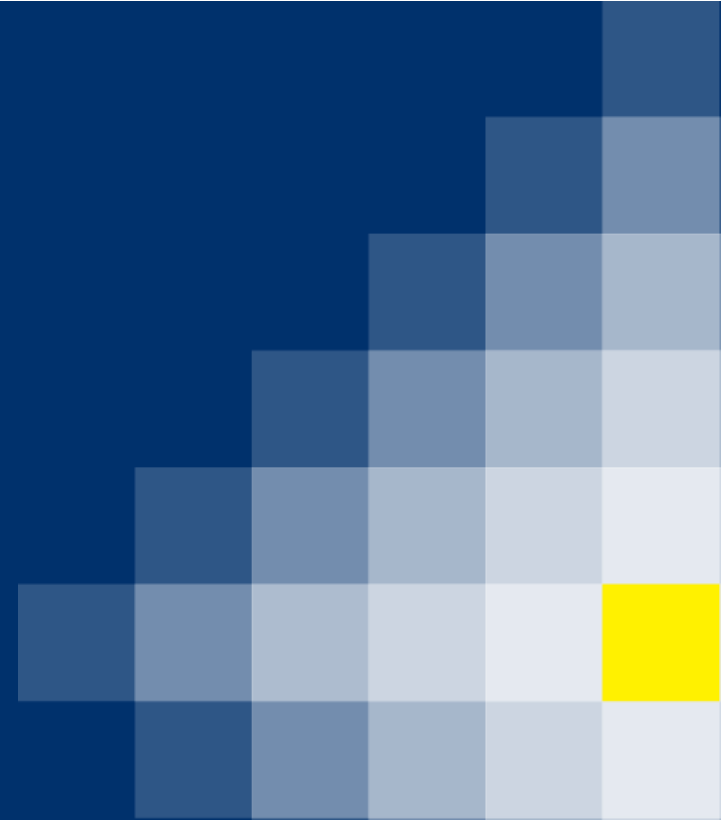
#### <AI related products>

Type	Name		Overview
Products	DUCSOnEX		Predictive maintenance for equipment
	Digital Plant Operation Intelligence (DPI)		Quality stabilization for processes
	Process Data Analytics (PDA)		Quality stabilization for processes
	e-RT3 Plus (F3RP70-2L)		Industrial AI platform for Python
	High content analysis software Cell Pathfinder		Detection of unstained cells



# Yokogawa's future

- FY20 basic policy, forecast
- Our direction



# FY2020 basic policy

◆ We will focus on **accelerating the implementation of the TF2020 strategies** (completion of measures and reaping of benefits). As such, we will undertake the following:

- ① Set and review priority of TF2020 measures
- ② Achievement of further cost reductions through Group-wide optimization
  - Prohibition of nonurgent expenses
  - Improvement of efficiency through means such as changing how work is performed, including the use of telework
- ③ Remaining fiscally strong
- ④ Positioning our business for the post-COVID-19 world

**Responding to changes in social needs**

**Significant opportunities to respond to demand for remotization, autonomy (IA2IA) and other solutions that will enhance safety, security, productivity, and efficiency.**

# Orders case: Remote service using augmented reality (AR) technology

◆Points: Highly reliable (hardware, software, integration), and expected to enter wide use due to its efficient utilization of expert know-how.

## <Analytical case>

■ For COVID-19 support,  
Remote FAT\*/commissioning  
\*\* service receiving an  
increasing number of order  
inquiries

	Country	Case	Status
1	Canada	Remote FAT	Done
2	Oman	Remote commissioning	Done
3	Oman	Remote FAT	In progress
4	Iraq	Remote commissioning	Planning
5	Iraq	Remote commissioning	Planning



Field workers



Our service personnel

\* FAT: factory acceptance test

\*\* Commissioning: equipment start-up test run

# Target for the last year of TF2020 - FY20 forecast -

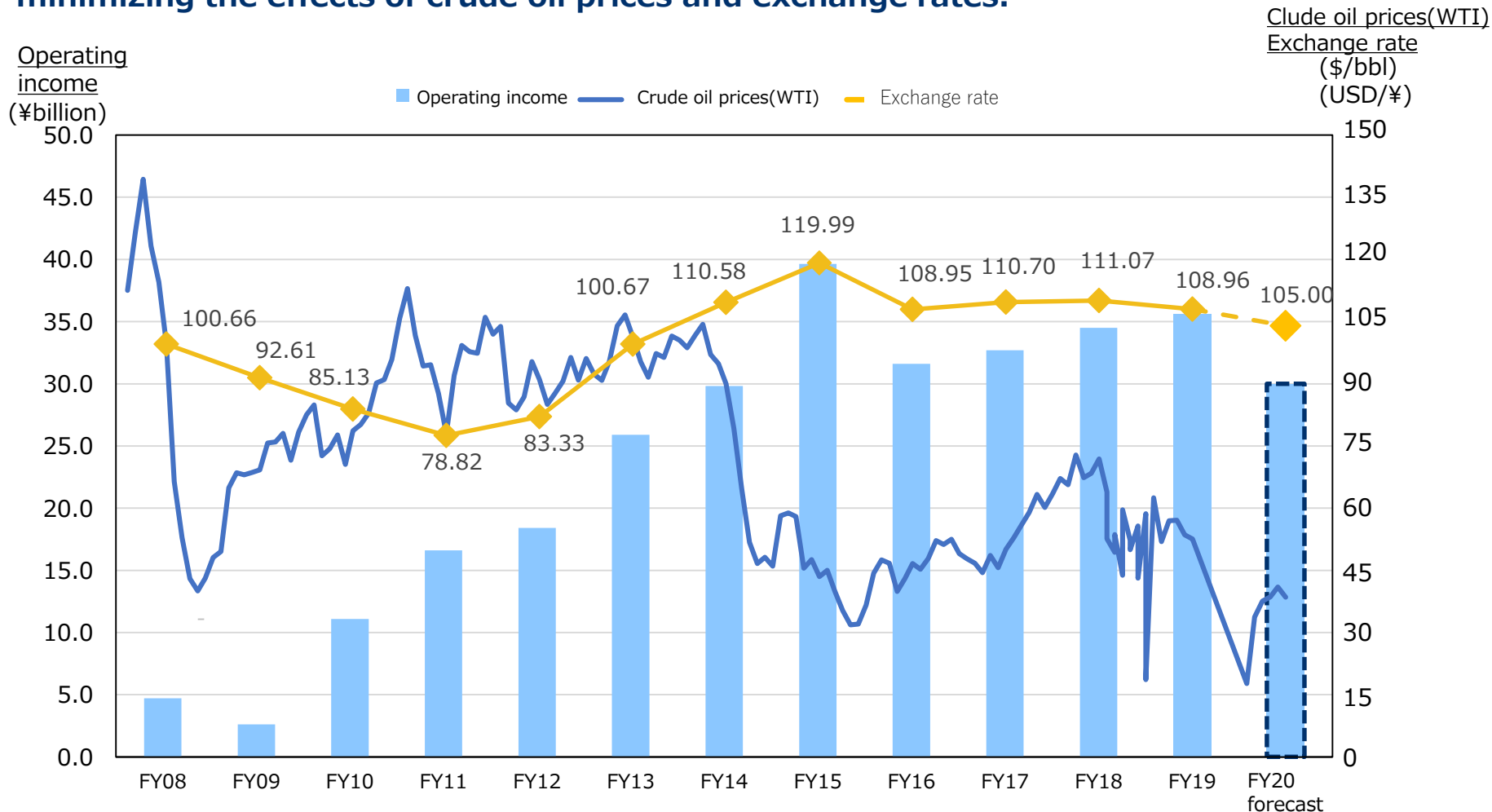
◆FY20: We have steadily increased profitability. We see the current adverse circumstances as an opportunity to accelerate our efforts to achieve the targeted transformations in TF2020.

(Billion¥)

		FY17	FY18	FY19	FY20 Forecast
Orders		400.3	432.0	418.7	<b>360.0</b>
Sales		406.6	403.7	404.4	<b>375.0</b>
Operating income		32.7	34.6	35.6	<b>30.0</b>
ROS(%)		8.0	8.6	8.8	8.0
Profit attributable to owners of parent		21.4	28.4	14.7	<b>19.0</b>
EPS(¥)		80.27	106.54	55.02	<b>71.18</b>
Exchange rate	1 \$ =	¥110.70	¥111.07	¥108.96	<b>¥105</b>

# A company that is profitable regardless of what happens in the external environment (more resilient)

Achieve sustainable growth while balancing the growth of new businesses, including pharmaceuticals and foods, and the stability (profitability) of existing businesses by minimizing the effects of crude oil prices and exchange rates.



# Trend of global sales/operating income/operating income to sales ratio in control segment

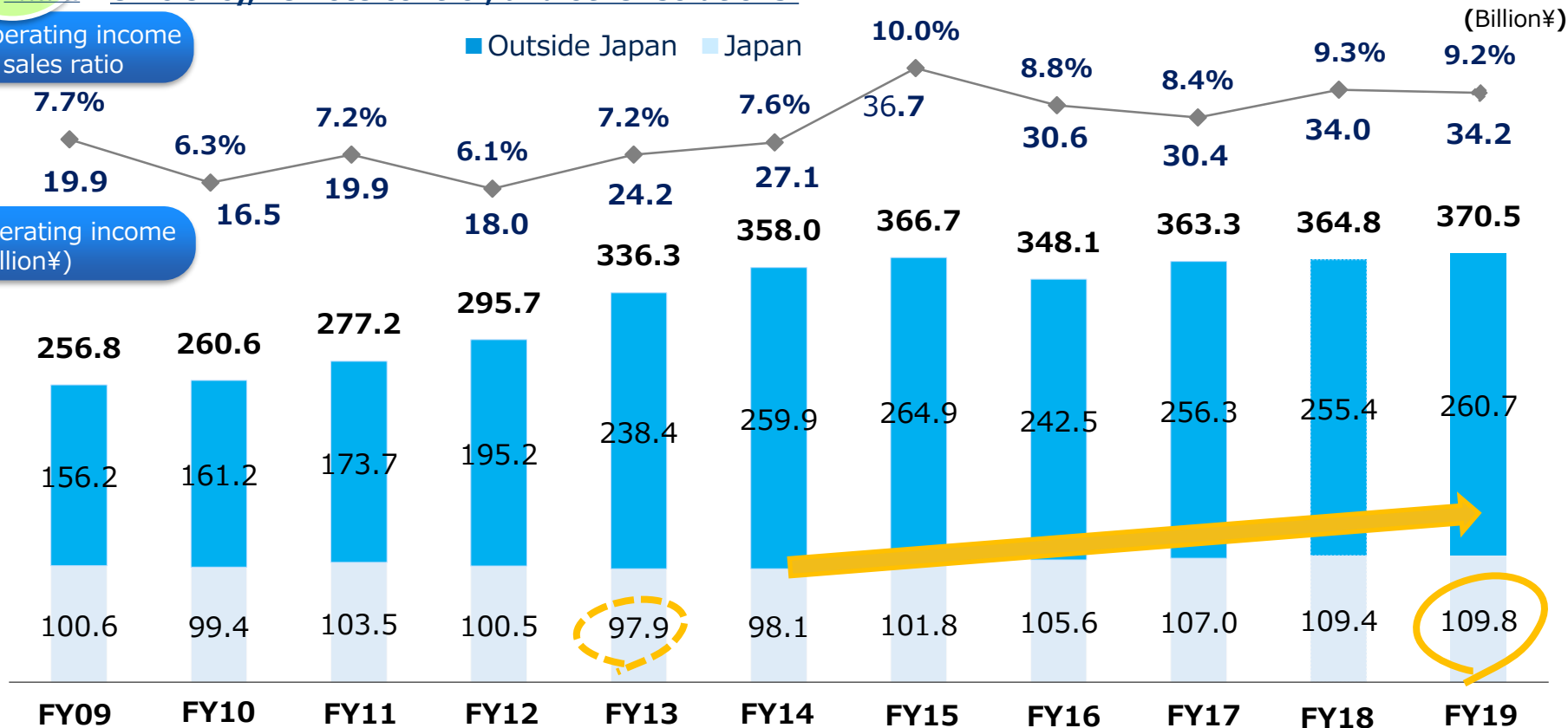
- Centering on OPEX, sales have increased **6 consecutive years** due to expansion of our solution business and industry growth (pharmaceuticals, etc.)
- The number of large energy plants has not increased, but there is a rising need for integration, efficiency, remote control, and other solutions.

Japan  
Non-energy industries

Operating income to sales ratio

Operating income (Billion¥)

■ Outside Japan ■ Japan

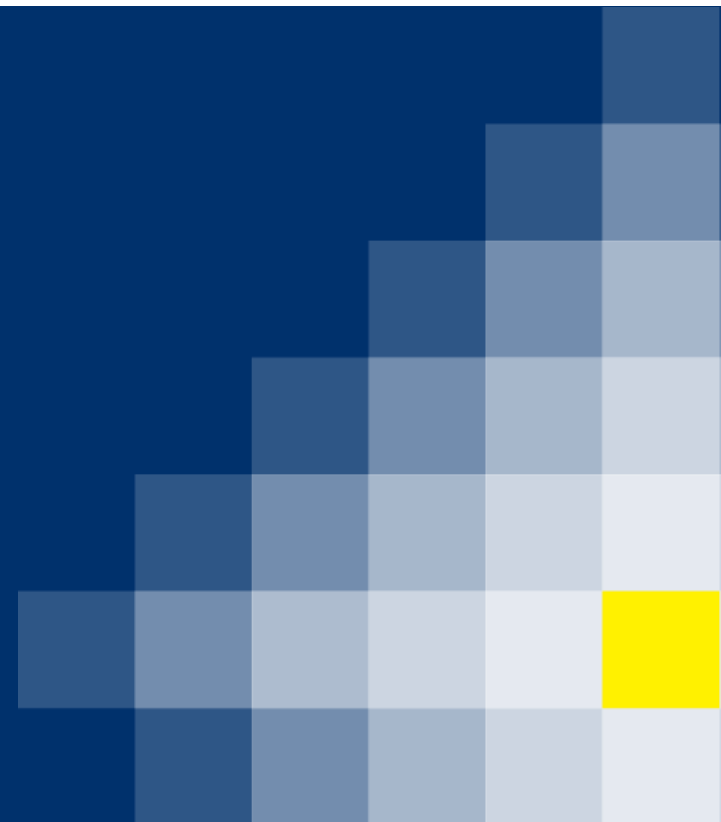


<Exchange rate>

	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19
US\$ (¥)	92.61	85.13	78.2	83.33	100.67	110.58	119.99	108.95	110.70	111.07	108.96

- We are a resilient company with the power to withstand COVID-19
- Our business is centered on areas that will experience growth during the pandemic
- We are set on building a sustainable society and creating new opportunities for growth

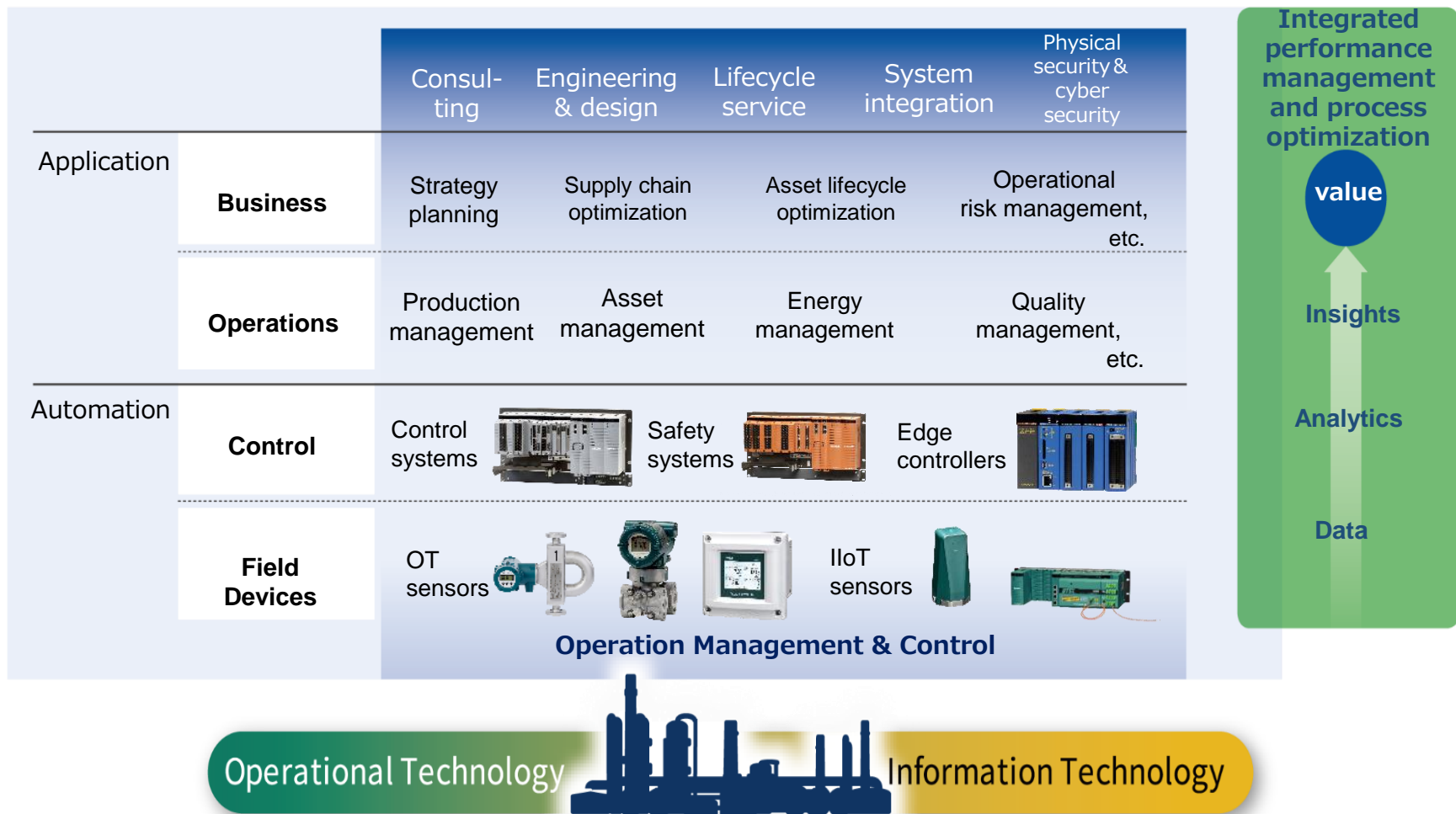
# Co-innovating tomorrow™





# Appendix: Solution Portfolio in Control Segment

## From “Automation Supplier” to “Trusted Partner”

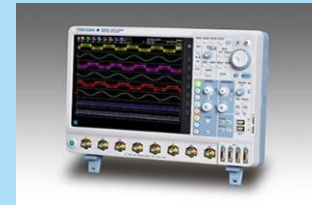


# Appendix: News (from August 13 to November 4)

Yokogawa signs investment and partnership agreement with Swiss startup Bloom Biorenewables.

Developed and released DLM5000 series mixed signal oscilloscopes, supporting the improvement of efficiency in automotive, mechatronics, and electronics R&D.

Investors' Guide updated. [Link](#)



Yokogawa survey finds two-thirds of process industry companies are anticipating fully autonomous operations by 2030.

Released CENTUM VP R6.07.10 integrated production control system that adds unified alarms and conditions server for safe and efficient operation of large-scale systems.



Yokogawa Group Human Rights Policy established. [Link](#)

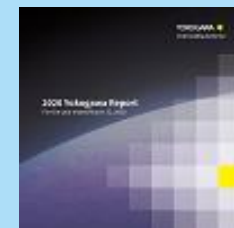
Launched OpreX Managed Service, providing monitoring and maintenance support for the efficient operation of plant equipment.

Yokogawa to release ProSafe-RS Lite, an SIL2 version of the ProSafe safety instrumented system

Announced Collaborative Information Server, which provides an environment for the integrated management of plant operations from any location.

Yokogawa extends energy management to the enterprise segment with cloud-based IoT solution for real-time monitoring and analysis of buildings and facilities.

Yokogawa publishes 2020 Yokogawa Report. [Link](#)



Note: The month for each news item indicates when it was published.

# Appendix: Yokogawa's Main ESG Indexes etc.

DJSI-Asia Pacific  
FTSE4Good Index Series  
FTSE Blossom Japan Index  
MSCI ESG Ratings AA  
MSCI ESG Leaders Indexes  
MSCI Japan ESG Select Leaders Index  
MSCI Japan Empowering Women Index  
CDP Water Security A List  
CDP Supplier Engagement Leader Board  
SNAM Sustainability Index  
S&P/JPX Carbon Efficient Index



MEMBER OF

**Dow Jones  
Sustainability Indices**

As of October 2020



In collaboration with a RobecoSAM brand



FTSE4Good



FTSE Blossom  
Japan



**2020** MSCI ESG Leaders  
Indexes Constituent

**2020** CONSTITUENT MSCI JAPAN  
ESG SELECT LEADERS INDEX

**2020** CONSTITUENT MSCI JAPAN  
EMPOWERING WOMEN INDEX (WIN)

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As such, it cannot be guaranteed that these statements will not differ materially from actual results.

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The information has not been restated to reflect the revision of the initially allocated acquired costs that was decided upon finalization of the tentative accounting treatment and application of the "Partial Amendments to Accounting Standard for Tax Effect Accounting."

IR Section, Treasury & IR Department  
**Yokogawa Electric Corporation**

Email: [Yokogawa\\_Electric\\_IR6841@cs.jp.yokogawa.com](mailto:Yokogawa_Electric_IR6841@cs.jp.yokogawa.com)

Phone: +81-422-52-6845

URL: <https://www.yokogawa.com/about/ir/>