

## **Briefing Session on Mid-term Business Plan “YASKAWA IR Day 2023”**

### **Motion Control Segment Drives Business**

June 1<sup>st</sup>, 2023

**YASKAWA ELECTRIC CORPORATION**

# Overview of Drives Business

## Business Overview

Development, production, and sales of AC drives, matrix converters, high-efficiency motors and other components to improve performance and efficiency of machineries

## Strengths

- Leading power electronics and high-efficiency motor technologies in the energy-saving field
- Control and sensing technologies accumulated over multiple years of experience in the motor drive fields
- Knowledge of machinery and equipment stemming from system engineering
- Global sales and service sites, development centers and production plants

## Business Opportunity

- Increasing energy saving needs for carbon neutrality
- Expansion of factory automation
- Growing markets in emerging countries

## Market size (Assumption)

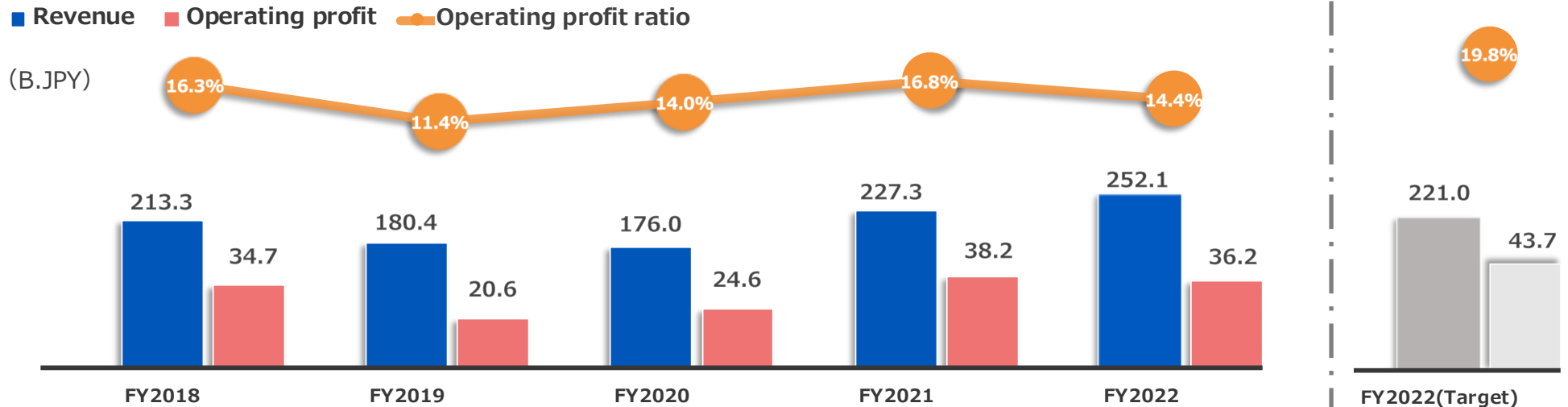
【FY2025】  
AC drives market :  
Approx. 2.1 tn. JPY  
(Approx. 1.8 tn. JPY in FY2022)  
<CAGR>  
FY2022→FY2025: + 4.7%

\*Estimated by Yaskawa

# Review of “Challenge 25 Plus” ( 1 )

Revenue target was achieved, while profit (ratio) fell short of the targets.

## Performance trends of Motion Control segment










Demand for capital investment stagnated due to the U.S.-China trade friction and other factors, and **both revenue and profits declined**.

- **Achieved record-high revenue** taking advantage of robust demand for oil and gas in the U.S. and other markets.
- **Profits** were affected by the lockdown in COVID crisis and soaring raw materials and logistics costs.

\*Lower text are the comments on drives business in Motion Control segment.

# Review of “Challenge 25 Plus” ( 2 )

Initiatives of Challenge 25 Plus	Review
<p>① Increase profits and accumulate know-how through accounts development</p> <p>General machines  Cranes </p>	<ul style="list-style-type: none"> <li>• Increased earnings by developing large and medium-sized accounts in <b>the U.S.</b> and other areas</li> <li>• Accumulated application know-how by <b>solving customer problems</b></li> </ul>
<p>② Increase earnings by completing Yaskawa AC drive series and promoting cost reductions</p> <p>General machines  Elevators </p>	<ul style="list-style-type: none"> <li>• <b>Expansion of product lineup delayed</b> because development resources were allocated to <b>component alternative design.</b></li> <li>• <b>Cost reduction and lead time improvement activities were postponed</b> in the face of global supply shortage of parts due to rapid market recovery from COVID crisis.</li> </ul>
<p>③ Challenge to untapped markets (HVAC, food and transportation)</p> <p>Fans  Food machine  Transportation machines </p>	<ul style="list-style-type: none"> <li>• <b>HVAC market</b> : Expanded success cases in the U.S. to other regions (such as Asia) and strengthened cooperation with partners.</li> <li>• Food and transportation market : Completed preparation of <b>differentiation proposals</b> with the use of i<sup>3</sup>-Mechatronics and <b>failure prediction function</b></li> </ul>

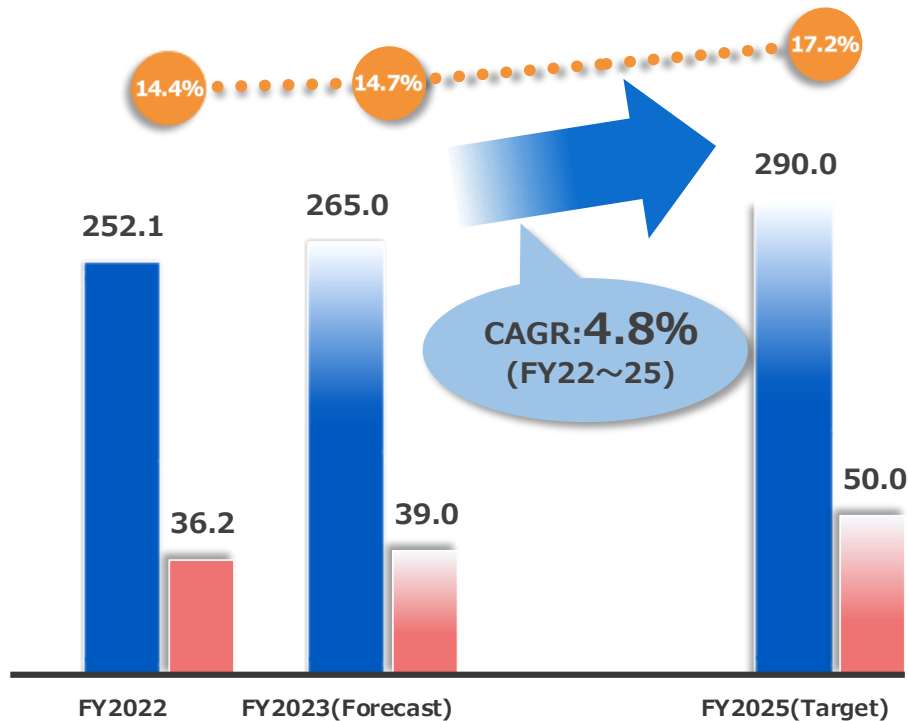
# Mid-term Business Plan “Realize 25” Policies and Goals

## “Evolution of Global Business” and “Business Growth in line with Carbon Neutrality”

### Performance Target of the Motion Control Segment

■ Revenue ■ Operating profit — Operating profit ratio

(B.JPY)



### Realize 25

#### 〈Financial Target〉

Revenue : 290.0 B.JPY  
Op. profit : 50.0 B.JPY  
Op. profit ratio : 17.2%

\*Motion control segment overall

#### 〈Keywords〉

**Development** : Increase added value by completing product lineup of Yaskawa AC drive series and creating customer value

**Sales** : Capture demand for energy conservation toward carbon neutrality

**Production** : Achieve stable product supply by increasing in-house production of parts and optimizing production systems

【Development】 Increase Added Value by Completing Product Lineup and Creating Customer Value①

Completion of product lineup of Yaskawa AC drive series



**GA500** Launched in 2019

**GA700**  
Launch large capacity models in 2023(Plan)

General machines



**CR700**  
Launched in 2018

Cranes



**LA700**  
Launch in 2023 (Plan)

Elevators



**HV600**  
Launched in 2020

Fans/HVAC




**FP600**  
Launched in 2022

Pumps



**WM600**  
Launch in 2024 (Plan)

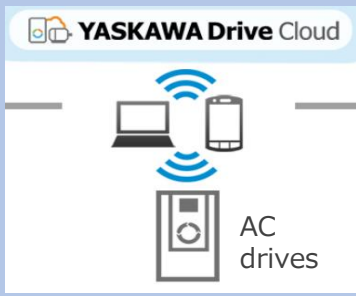
Water treatment

Value creation for customer machines



Drive Works EZ  
+  
New tools

Quick customization to meet customer needs



Drive Wizard Mobile

Web services for easy maintenance and management

【Development】 Increase Added Value by Completing Product Lineup and Creating Customer Value②

# Development of flagship model to create customer value in the U.S.

## Technological seeds

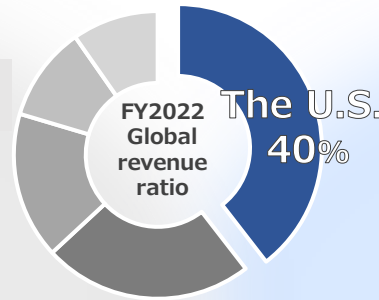
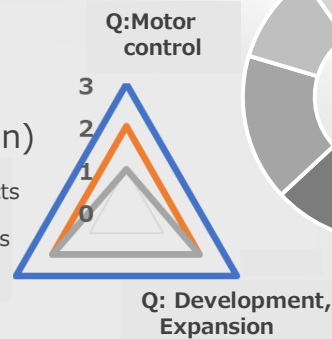
## Customer needs

### Construction of next-generation control architecture

(Development efficiency and cost reduction)

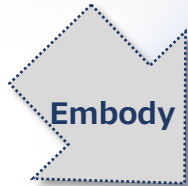
- Next generation products
- Top competitor
- Yaskawa AC drive series

C:Cost



### Optimal design for cost/BCP\*

(Increase procurement/assembly efficiency and minimize investment)



## Development of flagship model



Cooperation with strategic partners  
Machine evaluation


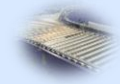



Flagship model (Sample)

↓  
**Value creation**



Customer machines (HVAC, oil & gas.. )




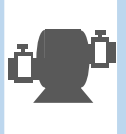
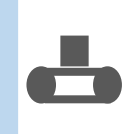
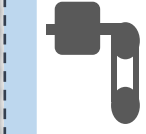









Target markets		Improvement points
	HVAC	Energy saving Power factor improvement Harmony with installation environment
	Food · Beverage	Non-stop production lines Sensor-free conveyor equipment
	Oil & Gas	Maintenance-free
	Fans · Pumps	Energy saving Power factor improvement Long-distance wiring
	Cranes	Productivity improvement

\*BCP...Business Continuity Plan



# 【Sales】 Capture Demand For Energy Conservation Toward Carbon Neutrality

## Expand sales opportunities for green products by expanding energy-saving proposals

	Proposals for carbon neutrality	Green Products
<p style="text-align: center;"><b>Machine manufacturer</b></p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px dashed gray; padding: 5px; text-align: center;"> <p>Fans</p>  </div> <div style="border: 1px dashed gray; padding: 5px; text-align: center;"> <p>Pumps</p>  </div> <div style="border: 1px dashed gray; padding: 5px; text-align: center;"> <p>Transportation</p>  </div> <div style="border: 1px dashed gray; padding: 5px; text-align: center;"> <p>Wire drawing machines</p>  </div> </div> <p style="text-align: center;"><b>End user</b></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Food market</p> </div> <div style="text-align: center;">  <p>Battery market</p> </div> <div style="text-align: center;">  <p>Automobile (EV) market</p> </div> </div>	<ul style="list-style-type: none"> <li>Promote usage of AC drive for motors</li> <li>Replace induction motors to highly efficient PM motors (miniaturization)</li> <li>Construct systems to achieve equipment that never stop</li> </ul> <ul style="list-style-type: none"> <li>Visualization of productivity improvement and effect of energy saving by demonstration of i<sup>3</sup>-Mechatronics                     <div style="display: flex; align-items: center; margin-top: 5px;"> <span style="font-size: small;">Detection of signs of abnormality</span>  </div> </li> <li>Reduction of CO<sub>2</sub> over the product life-cycle</li> </ul>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; justify-content: space-around; width: 100%;">   </div> <p style="text-align: center;">Yaskawa AC drive series</p> <div style="display: flex; justify-content: space-around; width: 100%;">   </div> <p style="text-align: center;">Matrix converter      ECO PM motor flat type</p> <div style="display: flex; justify-content: space-around; width: 100%;">  </div> <p style="text-align: center;">ECO PM motor</p> </div>



**Capture added value by expanding in-house manufacturing and realize BCP by promoting local procurement**

**〔Japan〕**

- **Improving in-house production rate in substrate production**

➔ Restructuring of Yukuhashi Plant in Fukuoka Prefecture

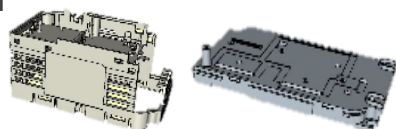
Image of the new substrate plant



- **Shift from procurement in China for resin parts and sheet metal**

➔ Developing aluminum castings and heatsink manufacturers in ASEAN region

Image of parts (aluminum castings/heatsink)



**〔China〕**





- **Raising the in-house production rate by making full use of parts factory in Changzhou**

**〔ASEAN〕**

- **Considering construction of parts supply factory for AC drives**

**Expand production in demand areas of AC drives**

Results and targets of local production ratios by region

	FY2022 Results	FY2025 Targets
<b>The U.S.</b> 	80%	<b>86%</b>
<b>China</b> 	99.7%	<b>99.9%</b>
<b>Europe</b> 	75%	<b>84%</b>
<b>India</b> 	84%	<b>98%</b>

**YASKAWA**