

# **2024Q1 Results Update**

Stock Code: 300748.SZ / 06680.HK

April 2024

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## **Company Overview**

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 JL MAG is a high-tech enterprise engaging in the R&D, production and sales of high-performance NdFeB Permanent Magnets (PMs), magnetic components and the recycling and comprehensive utilization of Rare Earth Permanent Magnets (REPMs), and a leading supplier of high-performance REPMs in the fields of new energy, energy conservation and environmental protection

### **Downstream Applications of Our Products**

- JL MAG's products are widely used in the fields such as New energy vehicles (NEVs) and automotive parts, energy-saving variable frequency air-conditioners (VFACs), wind power generation, 3C, robots and industrial servo motors, energy-saving elevators and rail transit
- We have established long-term and stable cooperative relationships with leading domestic and foreign companies in various sectors





PM Wind Turbine Generators



**Energy-saving Elevators** 



Rail Transit





Robots and Industrial Servo Motors

# Contributing to Carbon Neutrality and the Era of Intelligence and Electrification

- High-performance REPM is essential core materials in the fields of clean energy, energy conservation and environmental protection. They help reduce the power consumption of various motors and have significant energy-saving effects. The downstream applications of REPMs are broad, and in line with the energy-saving and environmental protection principles vigorously advocated by the nation and are of great significance to the nation's realization of energy-saving and emission reduction goals, making outstanding contributions to the early realization of reaching "carbon peak and carbon neutrality" in the world
- Artificial intelligence (AI) is increasingly becoming the core technology driving the new round of technological revolution and industrial transformation, with tremendous potential to empower various industries. Products in various industries such as 3C, VR, AI, and humanoid robot are thriving towards intelligent upgrading, which is expected to expand market size for REPMs



#### **NEVs and Automotive Parts**

- The use of REPMs in NEV drive motors, ABS (anti-lock braking system), EPS (electronic steering system) and automotive parts can increase the power density of the motors and improve their operating efficiency
- Magnet Series: H, SH, UH and EH
- Remanence range (T): 1.14-1.46
- Coercivity range (kA/M): 1,352-2,706
- Maximum energy product (KJ/m3): 247-422
- Maximum working temperature (°C): 120-200
- Major clinets: the world's top ten new energy vehicle manufacturers

#### **PM Wind Turbine Generators**

- REPMs are used in PM wind turbines, which feature simple structure, low operation and maintenance costs, long service life, good gridconnected performance and high-power generation efficiency, and are more suitable for operation in low wind speed environments
- Magnet Series: H and SH
- Remanence range (T): 1.28-1.44
- Coercivity range (kA/M): 1,273-1,752
- Maximum energy product (KJ/m3): 302-406
- Maximum working temperature (°C): 60-120
- Major clients: four of the world's top five wind power generator manufacturers

#### **Energy-saving VFACs**

- Using REPMs in the motors of household appliances enables them to run at different speeds, improves their operational efficiency, reliability and performance and reduces their operating costs
- Magnet Series: SH and UH
- Remanence range (T): 1.28-1.46
- Coercivity range (kA/M): 1,592-2,149
- Maximum energy product (KJ/m3): 302-422
- Maximum working temperature (°C): 120-150
- Major clients: eight of the world's top ten VFAC compressor manufacturers

#### **Energy-saving Elevators**

- Using REPMs, elevator manufacturers can produce elevator traction machines of higher power, smaller size, lower noise and less operating costs
- Magnet Series: H and SH
- Remanence range (T): 1.22-1.42
- Coercivity range (kA/M): 1,352-1,910
- Maximum energy product (KJ/m3): 287-398
- Maximum working temperature (°C): 80-120

#### **Robotics and Industrial Servo Motors**

- Using REPMs in the servomotors of industrial robots helps to improve the power density and performance of relevant parts of the servomotors while reducing their sizes
- Magnet Series: N, M, H and SH
- Remanence range (T): 1.14-1.48
- Coercivity range (kA/M): 955-1,990
- Maximum energy product (KJ/m3): 247-438
- Maximum working temperature (°C): 60-120

## **Production Bases and Production Workflow**

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- The company's REPM blank production capacity has reached 23,000 tons annually. The Baotou Phase II, Ningbo Project, and Ganzhou II Project are currently under construction as scheduled and are expected to commence operation progressively in 2024
- The company is expected to achieve 40,000 ton of production capacity of high-performance REPMs and establish advanced production line of magnetic components by 2025

### **Ganzhou Production Base**



- NdFeB PM blanks production capacity: 15,000 tons/year
- High-efficiency and Energy-saving Motors Magnets Base Project (Ganzhou II) is under construction

#### **Baotou Production Base**



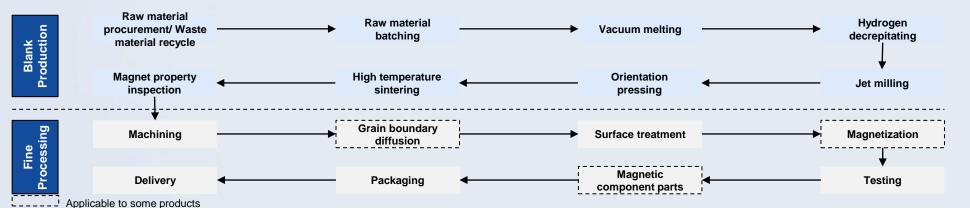
- NdFeB PM blanks production capacity: 8,000 tons/year (Phase I)
- Baotou Phase II project with an annual capacity of 12,000 tons, is expected to gradually ramp up production in 2024

#### **Ningbo Production Base**



 Ningbo Project with an annual output of 3,000 tons of high-end Magnets and 100 million units/sets of components, is expected to be progressively put into operation in 2024

#### **Production Workflow Chart**



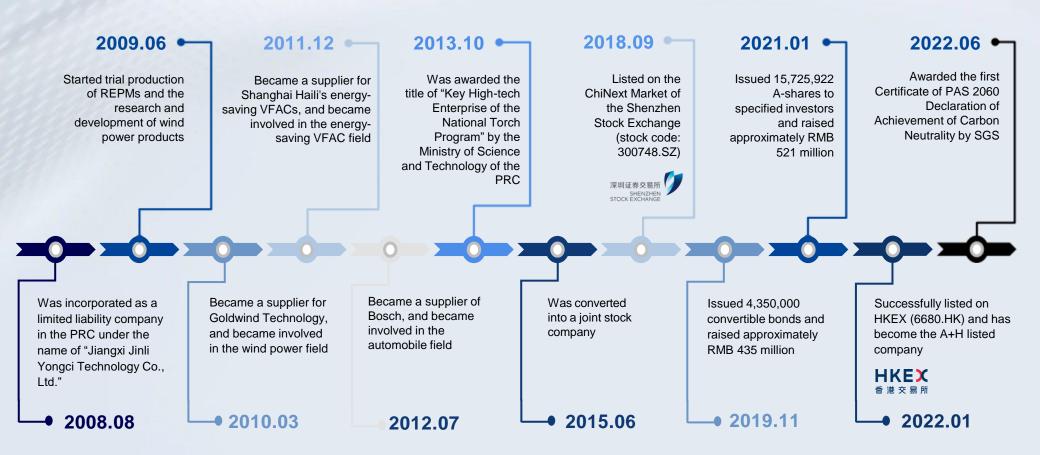
## **Top 10 Shareholders of the Company**

## Top Ten Shareholders (As of March 31, 2024)

Name	Shareholder Type	Shareholding Percentage
Jiangxi Ruide Venture Investment Co., Ltd.	Domestic Non-state Owned Legal Person	28.79%
HKSCC NOMINEES LIMITED	Overseas Legal Person	14.93%
Ganzhou Industrial Investment Holding Group Co., Ltd.	State-owned Legal Person	5.14%
Goldwind Investment Holding Co., Ltd.	Domestic Non-state Owned Legal Person	4.98%
Shaanxi Coal Industry Company Limited	State-owned Legal Person	3.99%
Ganzhou Xinsheng Investment Management Center (Limited Partnership)	Domestic Non-state Owned Legal Person	1.75%
Industrial and Commercial Bank of China Limited-E Fund GEM Trading Open-end Index Securities Investment Fund	Others	0.92%
Hong Kong Securities Clearing Company Limited	Overseas Legal Person	0.83%
Ganzhou Geshuo Investment Management Center (Limited Partnership)	Domestic Non-state Owned Legal Person	0.64%
National Social Security Fund Portfolio 104	Others	0.56%

### **Development History**

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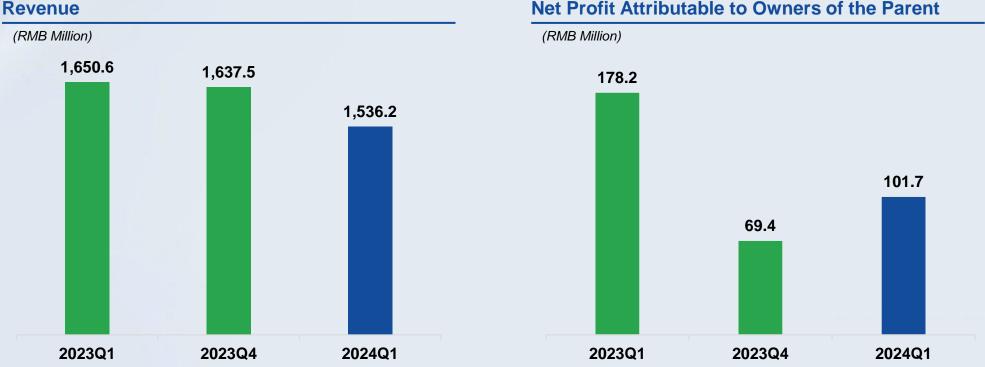




**Operation Updates** 

## Sufficient Orders, with Newly Released Capacity

- In 2024Q1, despite declining RE raw material prices and intensified industry competition, the Company secured sufficient orders from downstream clients and progressively commenced the construction of new projects
- The Company's new capacity gradually ramped up, with the capacity utilization rate exceeding 90%. Orders and demand from major clients in the NEVs and auto parts remained stable
- The Company also accelerated the digitalization and automation of production management, strengthened ESG initiatives and actively collaborated with globally renowned clients in terms of R&D of magnetic components for humanoid robots
- During the Reporting Period, the Company achieved RMB1,536.2 million revenue, a decrease of 6.93% YoY



### Net Profit Attributable to Owners of the Parent

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## Higher Inventory Cost under Weighted Average Method Resulted in Lower GPM

- In 2024Q1, the gross margin was 10.04%, down 5.2 percentage points from 15.24% in the same period of 2023
- On the one hand, major rare earth raw material priced continued declining in 2024Q1. The average price of Pr-Nd (tax included) was RMB473,700 per ton<sup>1</sup>, about 42.03% lower than the average price of RMB817,100 per ton in the same period of 2023. Similarly, the average price in Jan 2024 was RMB504,500 per ton, which decreased to RMB431,900 per ton by March 2024
- The significant fluctuations in rare earth raw material prices since the beginning of the year have had a downward pressure on the gross profit margin due to the short-term transmission differences between costs and selling prices
- On the other hand, the Company procured RE raw material with a production-on-demand strategy and used the weighted average method for inventory valuation. The Company was particularly affected by below two contracts that had not been fulfilled, resulting in higher cost of inventory under weighted average method, which in turn lowered the gross profit margin



### **Gross Profit Margin**

#### Client A:

- Prepaid for procurement of rare earth materials in 2023
- Reflected in the contract liabilities at the end of 2023
- > The Company made purchase as per the contract
- The fixed-price contract was not executed in 2024Q1

#### **Client B:**

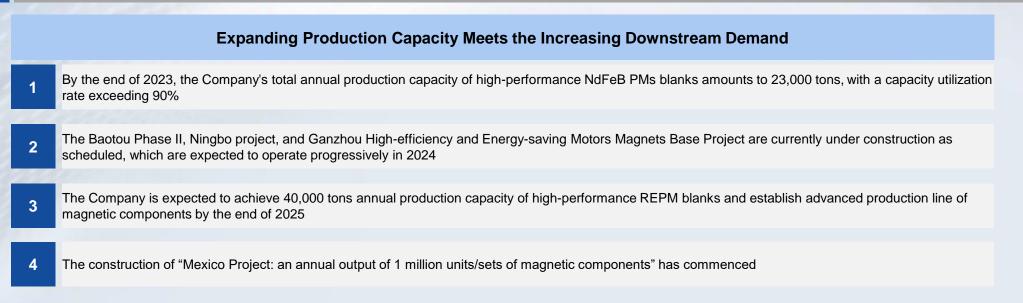
- Changed the delivery schedule for a portion of the order
- > The Company purchased RE materials as per contract
- > Affected about 600 tons of procured RE metals
- > The fixed-price contract was not executed in 2024 Q1
- Above two contracts affected c.4 ppts of gross margin in 2024Q1
- > No impairment loss of these RE materials as covered by orders
- > Corresponding profits will be realized upon contract execution

Note: 1. According to data published by Asian Metal Net and the Association Of China Rare Earth Industry

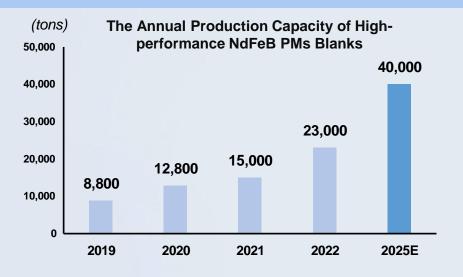


**Company Strategy** 

## **Ramp-up Production Capacity of REPMs**



#### **Capacity Expansion Plan by 2025**



- In Jan 2023, the Company established a wholly-owned subsidiary, JLMAG MEXICO, S.A. DE C.V., in Mexico. The company has planned an investment in Mexico to construct the "Project of an annual output of 1 million units/sets of magnetic components", which will have an annual output capacity of 1 million sets of magnetic components upon completion
- The company adheres to an international development strategy and will actively promote the projects' implementation and enhance market competitiveness in sectors such as humanoid robots and new energy vehicles, providing more favorable conditions for expanding into overseas markets

## **Continuously Invest in R&D**

 Further invest in R&D/innovation to enhance production technology, enrich existing product portfolio, and foster cooperation with downstream industry leaders

> Continue R&D projects to solidify the Company's existing technology and optimize formulations, launch new products and technologies of high-performance REPMs, promptly meet client demands for PMs upgrades and humanoid robot magnetic component, and lead technological innovation in the industry



Maintain the Company's technological edge in the production of high-performance NdFeB PMs, incorporate the latest international technological advancements and best practices for improvement, and further upgrade proprietary technology

Increase R&D investment, including further reducing the use of medium and heavy rare earths in the production of more widely used high-performance NdFeB PMs Expand the Company's R&D team by recruiting industry experts and talents, and strengthen the Company's internal training and talent development



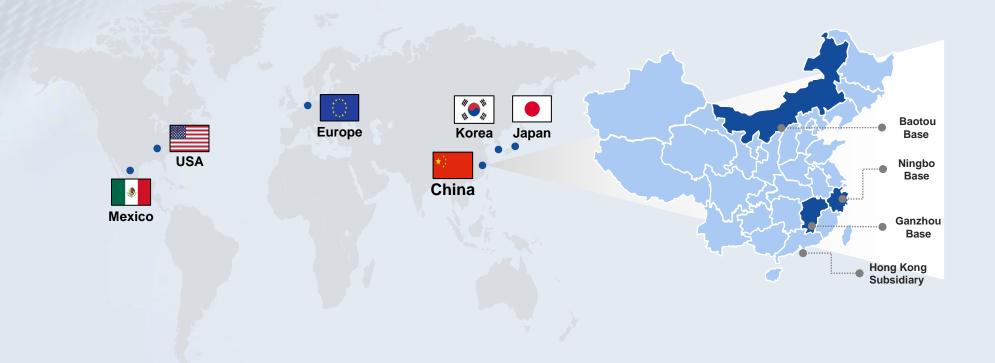
Enhance the Company's production facilities by improving automation levels, to promote capacity enhancement while ensuring product quality and consistency



## **Expand Global Footprints**

- Due to REPMs' energy-saving advantage and robust performance, we are experiencing a robust demand growth of REPMs globally, especially under the backdrop of global initiative of achieving carbon neutrality
- JL MAG has subsidiaries in Hong Kong SAR, Europe, Japan, Korea, US, and Mexico and is devoted to further expand global footprint to more countries/regions, serving the global demand for REPMs

### Serving the Global Demand with Chinese Production Efficiency



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## **Commit to Social Responsibility and Sustainable Development**

The Company is dedicated to the global mission of achieving carbon neutrality and has taken initiatives including constructing
photovoltaic power stations, adopting lean production, saving energy in production, innovating in new technology, upgrading high energy
consumption equipment, improving process efficiency and switching to "green electricity"

### **Construction of "Ningbo Green Sponge Factory"**



The Company's products contributed to a total carbon reduction of about **34.02 million** tons in 2023

The Ganzhou Base continues to hold ISO14064 and PAS2060 carbon neutrality certificates

### **Utilization of Green Power**

- ✓ In 2023, the total amount of green electricity used by the Company reached 115.65 million kWh, accounting for 41% of annual electricity consumption, of which Baotou Company's green electricity usage totalled 43.36 million kWh, achieving a green electricity usage ratio of 58%
- ✓ During the reporting period, the "Rooftop Distributed Photovoltaic Power Station Project" in cooperation with Ganzhou Tiancheng Tongchuang Intelligent Energy, a subsidiary of Goldwind Technology, has been completed and connected to the grid, with the total installed capacity reached 2.61 MW. It generated 2.42 million kWh of rooftop photovoltaic power in 2023, covering an area of 16,000 square meters, and reducing carbon emissions by an average of 1,735 tons per year
- The joint project of the 3.2 MW distributed photovoltaic power generation between JL MAG (Baotou) and China Resources New Energy Investment have published government announcement, and is expected to be integrated into the power grid in 2024

The proportion of environmentally friendly materials used in product packaging reached **54.5%** 

The use of recycled rare earth raw materials accounted for **29.4%** of the total rare earth raw materials used in 2023



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Q&A

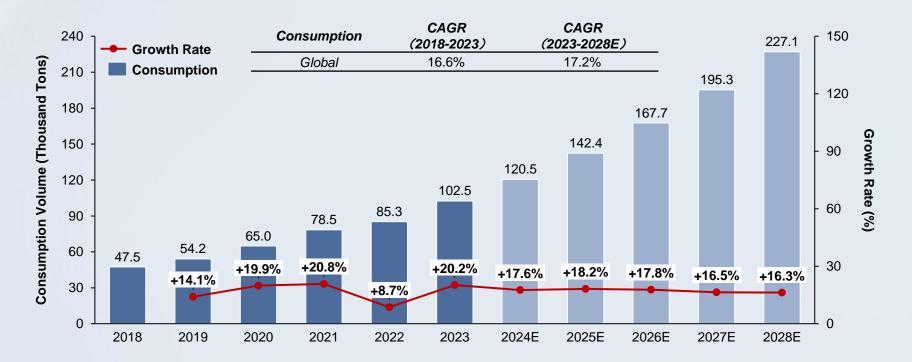


Appendix: Industry Overview

## **Broad Applications and Rapid Demand Growth of High-Performance REPMs**

- According to the report by Frost & Sullivan, over 50% of global electricity consumption is attributed to motors. Compared to traditional motors, REPMs motors can save up to 15% to 20% of energy. Furthermore, the application of REPMs enables the miniaturization and lightweight design of variable-frequency household appliances, NEVs and automotive parts, 3C products, aligning with consumer preferences
- The global consumption of high-performance REPMs increased from 47,500 tons in 2018 to 102,500 tons in 2023, with a CAGR of approximately 16.6%. By 2028, the global consumption of high-performance REPMs is expected to reach 227,100 tons, with a CAGR of 17.2% from 2023 to 2028

### **Global Consumption of High-Performance REPMs - from 2018 to 2028E**



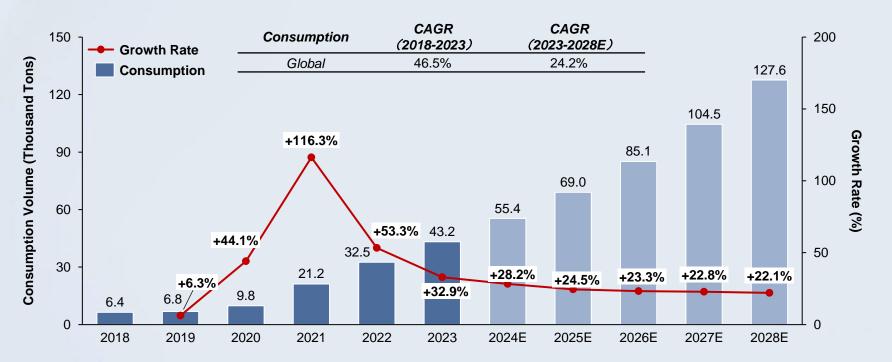
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### **NEVs Sector**

- Currently, numerous global automakers have announced their plans for NEVs and are actively expanding their NEVs production capacities. High-performance NdFeB PMs, as core components of NEV drive motors, are expected to continue experiencing strong demand in the future
- According to a report by Frost & Sullivan, the global consumption of REPMs in the NEVs market increased from 6,400 tons in 2018 to 43,200 tons in 2023, with a CAGR of approximately 46.5%. By 2028, the consumption of REPMs in the global NEV market is expected to reach 127,600 tons, with a CAGR of 24.2% from 2023 to 2028

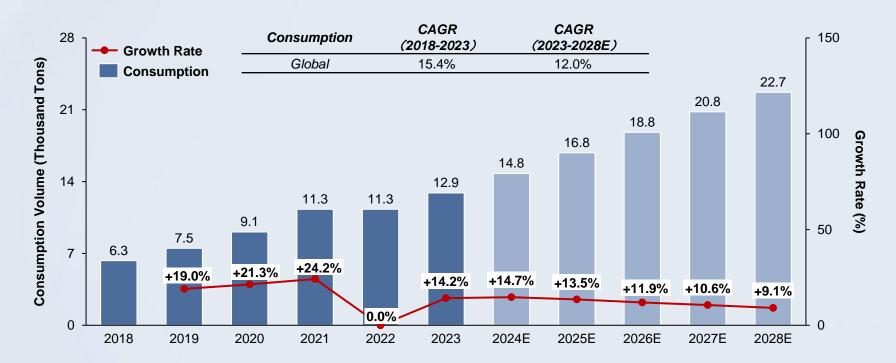
### Global Consumption of REPMs in the NEVs Market - from 2018 to 2028E



## **Energy-saving VAFCs Sector**

- With the official implementation of the "Room Air Conditioners Energy Efficiency Limits and Grades" on July 1, 2020, fixed-frequency air conditioning have been phased out, and high-efficiency VFACs have become the market mainstream. High-performance NdFeB magnetic steel, as core material for VFAC compressors, is expected to see a significant increase in demand in the future
- According to a report by Frost & Sullivan, the global consumption of REPMs in the energy-saving VFAC market increased from 6,300 tons in 2018 to 12,900 tons in 2023, with a CAGR of approximately 15.4%. By 2028, the global consumption of REPMs in energy-saving VFACs is expected to reach 22,700 tons, with a CAGR of about 12.0% from 2023 to 2028

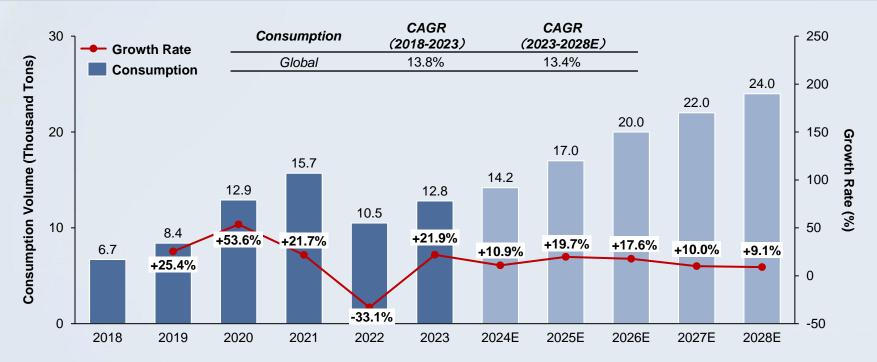
### Global Consumption of REPMs in the VAFCs Market - from 2018 to 2028E



### **Wind Power Sector**

- In the future, as turbine units become larger, especially with the rapid increase in the proportion of offshore wind power installations, the market share of PM motors will further increase, which will in turn further promote the growth in consumption of high-performance NdFeB PMs
- According to a report by Frost & Sullivan, the consumption of REPMs in the global wind power market increased from 6,700 tons in 2018 to 12,800 tons in 2023, with a CAGR of approximately 13.8%. By 2028, the consumption of REPMs in the global wind power market is expected to reach 24,000 tons, with a CAGR of 13.4% from 2023 to 2028

### Global Consumption of REPMs in the Wind Power Market - from 2018 to 2028E



## **Robots and Industrial Servo Motors Sector**

- In October 2023, the Ministry of Industry and Information Technology issued the "Guidelines for the Innovative Development of Humanoid Robots", elevating the humanoid robot industry to a national level for the first time. The guidelines aim to establish an innovation system by 2025, achieve breakthroughs in core technologies, and ensure the supply of core components. By 2027, humanoid robots are expected to form a strong industrial chain and competitiveness, reaching a world-leading level
- According to a report by Frost & Sullivan, by 2028, the global industrial robot market's consumption of REPMs is expected to reach 6,600 tons, with a CAGR of 13.5% from 2023 to 2028. The global humanoid robot market's consumption of REPMs is projected to reach 2,887.5 tons, with a CAGR of approximately 162.2% from 2023 to 2028

### Global Consumption of REPMs in the Humanoid Robot Market - from 2018 to 2028E

