

## Our Long-Term Vision: Vision 2030

In 2021, we formulated Vision 2030, which sets out our long-term vision for the Takuma Group of 2030. Vision 2030 takes into account medium- to long-term trends and the surrounding social climate and details our envisioned engagement with key issues (ESG issues) through business activities that leverage the Takuma Group's strengths, as well as our planned contributions to the building of a sustainable society. We are working toward achieving this Vision through our Medium-Term Management Plan.

### External Environment Outlook

Global-scale concerns include a worsening of the problem of climate change, deterioration in sanitation, and growth in energy demand due to rapid population growth and urbanization, particularly in emerging nations. Concerns in Japan include falling

internal demand caused by the shrinking and aging of Japan's population, shortages of human resources and future leaders, fiscal challenges, and aging infrastructure.



### Vision for FY2030

Based on external environmental factors, the Takuma Group will implement ESG management, an approach that consists of addressing key ESG-related issues in an effort to achieve sustainable growth by resolving issues faced by customers and society through business activities.

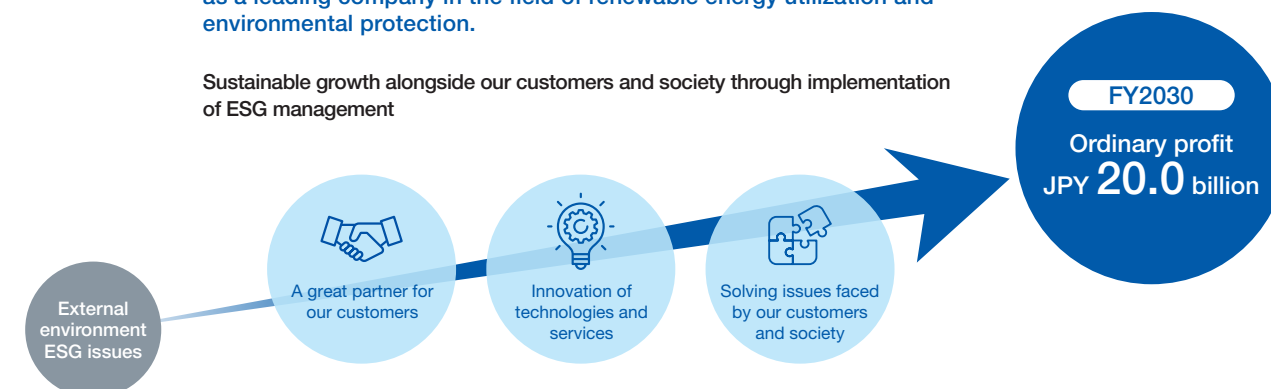
In pursuing business activities built on a core of ESG management, we will strive to become a great partner for our customers by leveraging the technologies and expertise related to energy utilization and environmental protection that are the Group's strengths, along with the relationships of trust we have

developed with customers over the long term through after-sales service and other interactions. With the useful technologies and services created through innovation by the Group, which carries on the spirit of a tenacious inventor, we will resolve challenges faced by customers and society, with a focus on the fields of renewable energy utilization and environmental protection.

Through the practice of ESG management, we will grow together with customers and society and contribute to the realization of a sustainable society while striving to achieve ordinary profit of JPY 20 billion.

**Aim to maintain our role of being an indispensable presence in society as a leading company in the field of renewable energy utilization and environmental protection.**

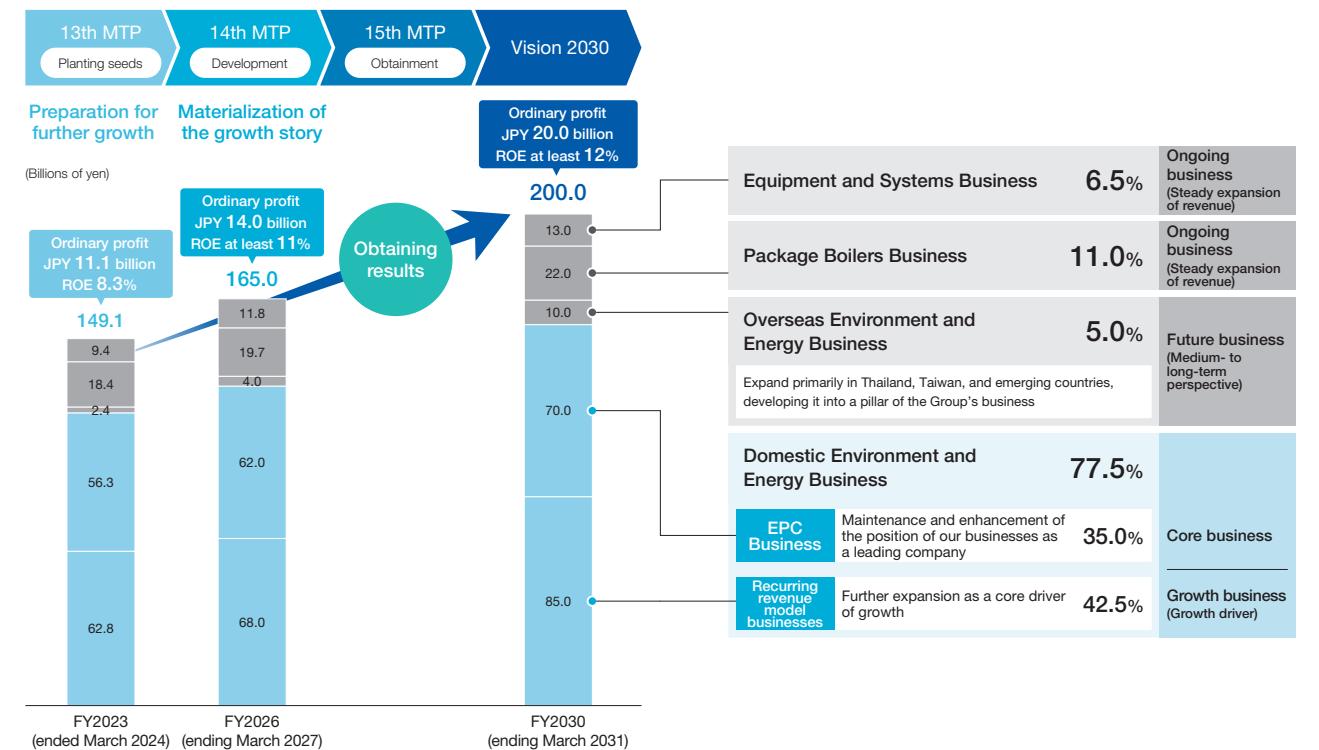
**Sustainable growth alongside our customers and society through implementation of ESG management**



### Business Portfolio

As part of our business portfolio strategy, the Takuma Group has categorized various business streams as its "ongoing," "core," "growth," and "future" businesses. We have positioned our recurring revenue model business as the growth business that will act as the driving force propelling the Group forward. We have designated our EPC businesses, the source of our recurring revenue model businesses, as our core business, and will maintain and expand our position as leaders in this field.

We have classed our overseas environment and energy business as our future business, with the plan of developing it into one of the Group's core business areas in the medium- to long-term. Finally, we have positioned our package boilers and equipment and systems business as ongoing business, and plan to continue steadily increasing revenues in these sectors going forward.



### Reflections on the 13th Medium-Term Management Plan

In order to achieve the necessary increase in order volume to fulfill our Vision 2030, Takuma enhanced its recruitment and development of human resources over this period. While this increased our personnel and other expenses, we achieved our 13th Medium-Term Management Plan's ordinary profit target by steadily fulfilling existing EPC project orders and continuing to

focus on our recurring revenue model businesses. We maintained a strong performance in securing new orders and successfully laid the groundwork for increases in orders, sales, and profits in the period covered by our 14th Medium-Term Management Plan and beyond.

### Achieved the financial targets of the 13th Medium-Term Management Plan

3-year total ordinary profit target		3-year total orders received	
Target	Achieved	Reference	Achieved
JPY 36.0 billion	JPY 36.4 billion	JPY 450.0 billion	JPY 521.3 billion

#### Securing and development of human resources

- Employees (consolidated): 3,925 in fiscal year ended March 2021 → **4,278** in fiscal year ended March 2024
- Enhancement of training menu and education system by rank and field
- Effective utilization of diverse human resources and improvement of job satisfaction

#### EPC business (Japan)

- Municipal solid waste treatment plants (including primary equipment improvement) **7** orders received
- Energy plants **21** orders received
- Water treatment plants (order amount of at least JPY 500.0 million) **9** orders received

#### Recurring revenue model businesses

- Long-term O&M in operation (number as of end of March 2024) **23** facilities
- Number of energy plant projects delivered (since start of Japan's FIT program) **65** facilities
- Power retail business (power supplied in fiscal year ended March 2024) **216** GWh

14th Medium-Term Management Plan

We have launched our 14th Medium-Term Management Plan (MTP), active from FY2024 and the second step in our Vision 2030. As part of this, we aim to increase the order volume of our municipal solid waste treatment plant renewal and primary equipment improvement projects, and maintain and expand our position in the EPC market. By translating this into orders for operation management, maintenance, and long-term O&M projects, we will also establish a revenue model that fully utilizes recurring revenue. These initiatives will be prioritized when allocating management resources. We have set cumulative targets of JPY 600.0 billion for orders received and of JPY 38.0 billion for ordinary profit over the three years of this MTP, as well as a ROE of 11% or more in FY2026 (ending March 2027).

Targets

In addition to a target for ordinary profit, our 14th MTP includes new targets for orders received and return on equity (ROE).

(Billions of yen)	13th MTP	14th Medium-Term Management Plan				Vision 2030
	(3-year total)	3-year total	FY2024 (ending March 2025)	FY2025 (ending March 2026)	FY2026 (ending March 2027)	FY2030 (ending March 2031)
Orders received	521.3	600.0 ↑	230.0	180.0	190.0	
Net sales	425.9	460.0	143.0	152.0	165.0	200.0
Operating profit	33.9	35.6	11.2	11.2	13.2	
Ordinary profit	36.4	38.0 ↗	12.0	12.0	14.0	20.0 ↑
ROE	8.3% (FY2023, ended March 2024)	11% or more ↑ (FY2026, ending March 2027)	8.0%	9.0%	11.0%	12% or more ↑ (FY2030, ending March 2031)

ROE = Profit / Equity capital ■: Main target

Business Strategies

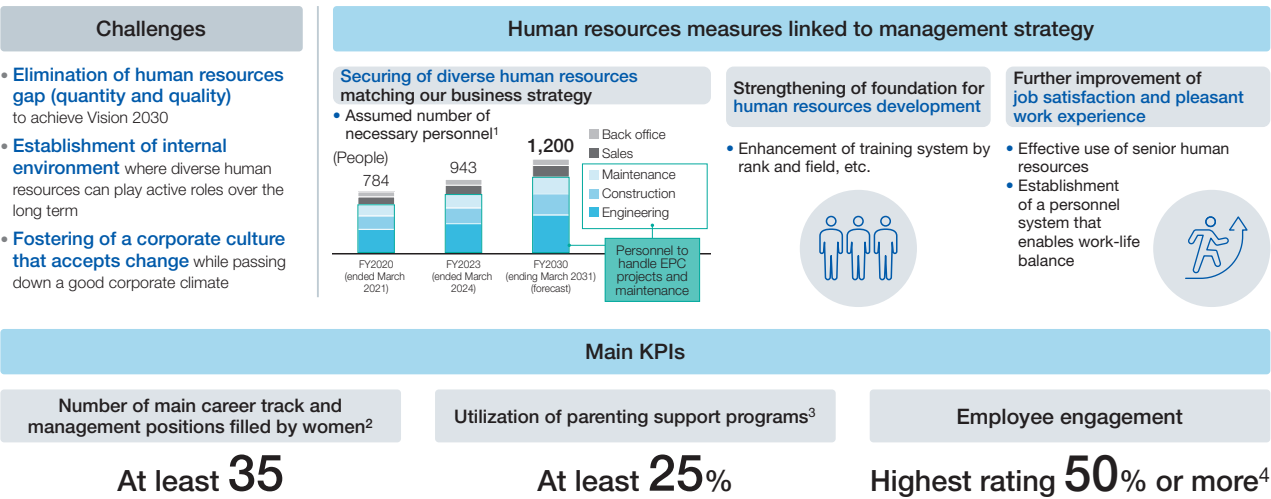
<b>Basic policy 1</b> Maintaining and expanding our market position in the EPC Business	<b>Municipal solid waste treatment plants</b> Increasing the order volume of renewal and primary equipment improvement projects, preparing responses to potential changes in the market <ul style="list-style-type: none"><li>3 or more renewal project orders per year</li><li>Steady response to primary equipment improvement projects</li><li>Support for decarbonization models and private sector utilization</li></ul>	<b>Energy plants</b> <ul style="list-style-type: none"><li>Ongoing orders for new small and medium-sized biomass power generation plants and renewal of plants for private consumption and industrial waste treatment plants</li></ul>	<b>Water treatment plants</b> <ul style="list-style-type: none"><li>Acquisition of orders for sewage sludge incinerators and sand filtration facilities</li><li>Expansion of share through technological superiority</li></ul>
<b>Basic policy 2</b> Establishing a revenue model that fully utilizes recurring revenue	<b>Municipal solid waste treatment plants</b> Maintenance and expansion of orders for operation management, maintenance, and long-term O&M projects <ul style="list-style-type: none"><li>Steady orders for regular maintenance work and DBO projects</li><li>Cost reduction and quality improvement with data utilization</li></ul>	<b>Energy plants</b> <ul style="list-style-type: none"><li>Ongoing maintenance orders for delivered projects</li><li>Enhancement of solution proposals, such as functional improvements and energy savings</li></ul>	<b>Water treatment plants</b> <ul style="list-style-type: none"><li>Ongoing maintenance orders, including regular maintenance work</li></ul> <b>Power retail business</b> <ul style="list-style-type: none"><li>Expansion of revenue by expanding relative power sources, securing new customers, and expanding service lineup</li></ul>
<b>Basic policy 3</b> Steadily expanding revenue in the Package Boiler Business and Equipment and Systems Business	<b>Package Boilers</b> <ul style="list-style-type: none"><li>Ongoing orders for renewal projects from expansion of product lineup, including low-carbon and decarbonization products</li><li>Strengthening of maintenance business and overseas development</li></ul>	<b>Equipment and Systems</b> <b>Building equipment business (air-conditioning, water, and wastewater equipment installation services)</b> <ul style="list-style-type: none"><li>Strengthening of sales capabilities, securing and development of engineers, and cost reductions</li></ul>	<b>Semiconductor industrial equipment business</b> <ul style="list-style-type: none"><li>Maintenance and expansion of domestic sales and strengthening of overseas sales</li></ul>
<b>Basic policy 4</b> Building a track record for the future in international business	<ul style="list-style-type: none"><li>Acquisition of orders for biomass power plants through expansion of supported fuels</li><li>Acquisition of orders for energy from waste plants, primarily in Thailand and Taiwan</li></ul>		
<b>Basic policy 5</b> M&As and Alliances / New Businesses	<ul style="list-style-type: none"><li>Active consideration of projects that will help us to strengthen our existing business and enhance our workforce, with the aim of expanding our capabilities, and of projects that will expand our peripheral business and lead to new business, with the goal of expanding our business domains, both with a focus on our Domestic Environment and Energy Business</li></ul>		

Strengthening the Management Foundation

Basic policy 1 Securing and development of human resources

We will move forward with a variety of human resources-related measures designed to enhance resources available for our recurring revenue model and EPC business, both of which are core drivers of our Company growth. To do this, we will secure human resources able to carry out EPC and maintenance projects, with a focus on our Maintenance, Construction, and Engineering Divisions. We will also build up our human capital by implementing measures to strengthen human resource

development, through enhancing our training programs, and improve job satisfaction and work conditions. By implementing these various measures, we also aim to achieve main KPIs relating to the number of female employees brought into career track and management positions, the percentage of eligible employees utilizing parenting support programs, and employee engagement levels.

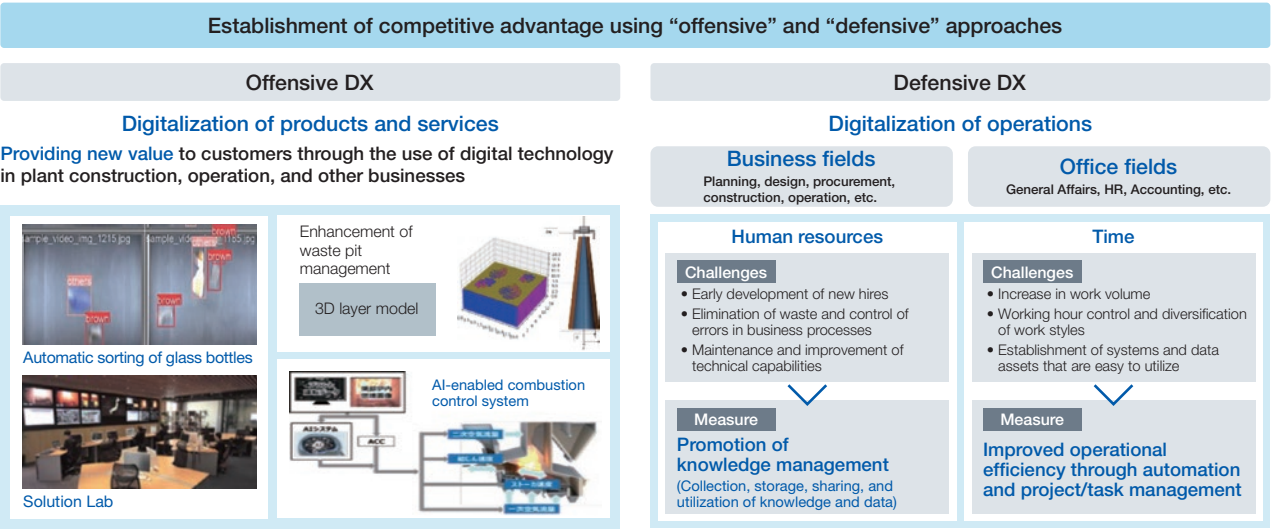


1. Non-consolidated basis, main career-track (does not include factory work positions, general positions, or secondment). Each of the figures is for the beginning of the year.  
2. Cumulative total for April 1, 2021 to March 31, 2026.  
3. Average for FY3/2022 to FY3/2026.  
4. The percentage of respondents giving the highest rating for each question (on a 5-point scale) on job satisfaction and pride in the Company in the Employee Attitude Survey.

Basic policy 2 Knowledge management

In order to place Takuma in a competitive position in terms of both “offensive” and “defensive” digital transformation (DX), the Group as a whole will be intensifying our efforts in this area. Our “offensive” DX efforts include Solution Lab, our facility providing 24-hour remote monitoring and operational support, and our AI-enabled combustion control system, which uses AI to forecast the combustion fluctuations unique to waste incineration and determine and implement the appropriate responses.

By utilizing these and other digital technologies in our plant construction and operation business, we will continue to deliver new value and enhance our competitive edge. Our “defensive” DX initiatives include promoting improvements to operational efficiency through knowledge management, automation, and other measures, and working with our limited resources toward increasing productivity and achieving smooth mastery of our technologies by new generations of staff.





## Message from Our Finance Officer

**Steadily implementing our agile and proactive investment strategy in order to continue our growth trajectory**

**Kunio Hamada**

Director and Managing Executive Officer  
Executive Manager of Corporate Planning  
& Administration Division

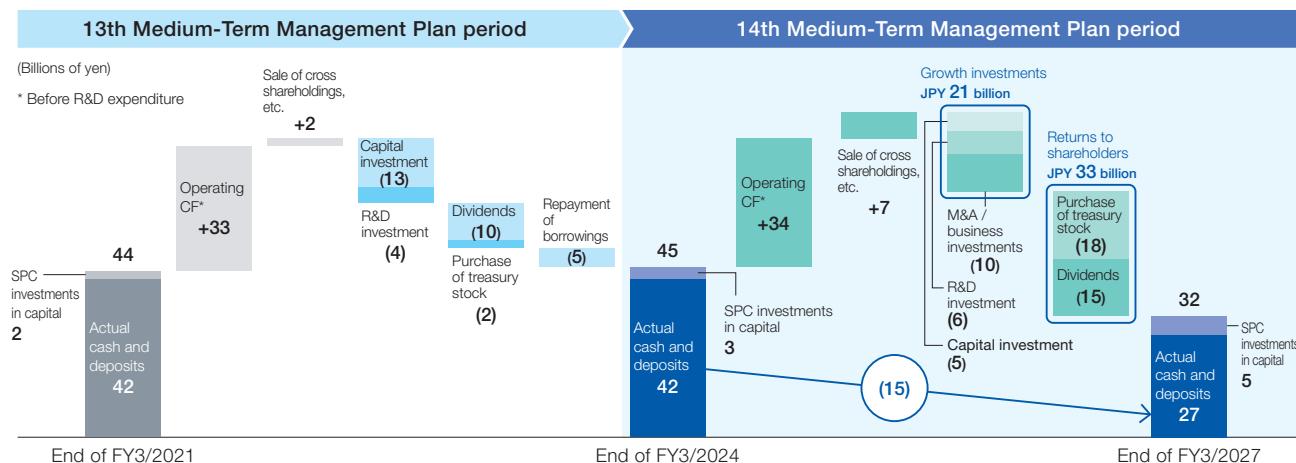
### Reflections on Our 13th Medium-Term Management Plan and Outlook for FY2024

Over the course of our 13th Medium-Term Management Plan (MTP; FY2021 to FY2023), we engaged in proactive recruitment of human resources, with a focus on our Engineering, Construction, and Maintenance Divisions. With a total increase of approximately 350 staff members over the three-year period covered by this MTP, we have a real sense of having successfully enhanced our resources. In January 2023, we also began operations at our new Harima Factory and at Supply Lab, our after-sales services center, allowing us to establish systems that can respond to our customers' diversifying needs. In addition, we worked to strengthen our management foundation, including by steadily pursuing investment in non-financial capital, such as by expanding our R&D investment, with a focus on decarbonization technologies.

In FY2023 (ended March 2024), the final fiscal year of our 13th MTP, we were able to steadily translate the strong demand for waste treatment plants, biomass power plants, and other facilities into orders and achieve excellent results in terms of orders and net sales, with orders received totaling JPY 160.5 billion and net sales of JPY 149.1

billion. Depreciation associated with operation of our new Harima Factory and increases in personnel and R&D expenses contributed to a decrease in profits, with an operating profit of JPY 10.2 billion and an ordinary profit of JPY 11.1 billion. However, cumulative ordinary profit over the three years of our 13th MTP was JPY 36.4 billion, exceeding the Company's initial target of JPY 36.0 billion.

In FY2024 (ending March 2025), the first fiscal year of our 14th Medium-Term Management Plan, we expect to achieve a Company record for total orders received of JPY 230.0 billion. While we forecast a decrease in net sales—predicted to total JPY 143.0 billion—owing principally to changes in our EPC project mix, we anticipate that an improved gross margin will increase operating profit to JPY 11.2 billion and ordinary profit to JPY 12.0 billion. With the Japanese market exhibiting continuing demand for waste treatment plant renovations and improvements to service life, we will prioritize investment of management resources aimed at securing orders. Through this, we plan to materialize our growth story.



### Accelerating Agile Investment Through Appropriate Cash Allocation

Our 14th MTP sets out a new cash allocation policy, elucidating our initiatives toward increasing the Company's corporate value.

Takuma's operating cash flow, and particularly that associated with our EPC business, tends to vary significantly from one fiscal year to the next as a result of project scale and contract details. We therefore consider it necessary to maintain a level of cash and deposits approximately equivalent to two to three months' worth of sales (approximately JPY 30.0 to 40.0 billion), for use as working capital and a buffer against business risk. Our 14th MTP establishes this as a baseline and further details our plan to allocate JPY 21.0 billion to investment for growth and JPY 33.0 billion for shareholder returns.

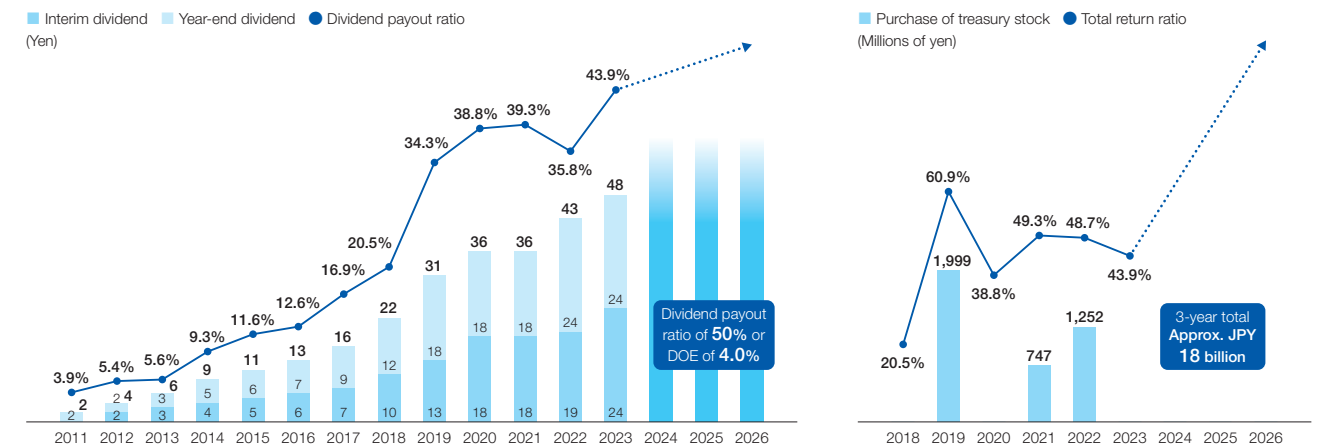
This investment for growth will include JPY 10.0 billion for M&A and investment in our own business. We have established our Domestic Environment and Energy Business, our core business area, as a particular priority. As part of this, we will continue strategic consideration and make agile investment decisions for expanding our plant engineering and construction staff, as well as expanding our business domains in this sector, such as moving into waste recycling. We have set aside JPY 5.0 billion for capital investment, including

planned investment in digital tools intended to contribute to increased operational efficiency and renovations of our offices. By creating more comfortable work environments in this way, we hope to increase employee engagement, maximize our human capital, and improve productivity.

We will invest JPY 6.0 billion in R&D, boosting our research aimed at achieving a decarbonized society, including in CCUS. We believe that we must achieve a certain level of progress toward establishing core CCUS technologies for use in waste incineration facilities by 2030 in order to achieve the global initiative toward net-zero greenhouse gas (GHG) emissions by 2050. Over the period covered by our current MTP, we will accelerate our work to develop these technologies, including by installing pilot equipment at our customers' facilities. Amid today's international efforts toward net-zero GHG emissions, we believe that acquiring decarbonization technologies is crucial for the future of Takuma as a company conducting business in the environmental and energy sector. We will move forward with proactive investments to facilitate practical implementation of these technologies as soon as possible.

#### Shareholder return policy

- Enhancing shareholder returns and improving capital efficiency through stable dividends and share repurchase
- Establish as a target amount whichever is higher calculated based on a dividend payout ratio of 50% or a dividend on equity (DOE) ratio of **4.0%**
- Share repurchase totaling approximately **JPY 18 billion** over three years to improve capital efficiency



### Aiming to Maximize Shareholder Value and Achieve Sustainable Growth

Takuma has a quantitatively-informed dividend policy, according to which we have established a dividend target calculated on the basis of a dividend payout ratio of 50% or a dividend on equity (DOE) ratio of 4.0%, whichever is higher. Based on this policy, we plan to pay an annual dividend per share of JPY 56 in FY2024, an increase of JPY 8 per share and the highest dividend in the Company's history. Alongside this, with the aim of improving capital efficiency, we will repurchase shares totaling approximately JPY 18.0 billion over the three years covered by our current MTP. We will repurchase and cancel shares totaling up to JPY 4.0 billion in FY2024. As a result of these initiatives, we expect our total returns ratio to be 95.7% in FY2024 and remain at around 110%, cumulatively, over the three-year period of our current MTP.

By boosting our profitability through proactive investment for

growth and enhancing our balance sheet efficiency through stable dividends and share repurchase, we aim to achieve a ROE of 11% or more in FY2026 (ending March 2027), the final fiscal year of our 14th MTP, and of 12% or more by FY2030 (ending March 2031). Our calculations suggest a current cost of equity of approximately 6%, but by steadily moving forward with the capital policy set out in our MTP and achieving a higher ROE, we aim to improve the equity spread and maximize shareholder value in turn.

We are conscious of our stakeholders' expectations for the Takuma Group's potential to solve social issues in the environmental and energy sectors. Going forward, we will continue to proactively seek out dialogue with our stakeholders, including through this first issue of our Integrated Report, and reflect their feedback in our management to achieve sustainable growth.

## Message from Our Marketing Officer



**Prioritizing investment of management resources in the high-demand Japanese market for waste treatment plants and achieving sustainable growth**

**Tsuyohito Nishiyama**

Director & Senior Managing Executive Officer  
Executive Manager of Corporate Marketing Group,  
Executive Manager of Business Administration Division

### Remaining Competitive by Enhancing Systems That Will Allow Us to Stay Ahead of the Game

In the domestic market for municipal solid waste treatment plants, one of our core business areas, the rising number of aging facilities means a continuing demand for renewals and improvements to service life. We also expect our DBO system (comprehensive contracts covering facility construction, operation management, and maintenance) to generate an ever-growing volume of orders.

However, if we look ahead beyond 2030, consolidation and closing down of facilities in line with Japan's declining population will progress and the domestic market will contract slightly. Despite this, waste treatment facilities are expected to play a multifaceted role in society, including contributing to local disaster prevention and decarbonization. We are aware of the urgent need to enhance our ability to propose solutions in response to this, while continuing our efforts toward cost reduction, if we are to remain competitive. In addition, growing demand for waste treatment and power generation is anticipated in emerging countries, including various Southeast Asian nations, driven by economic growth and urbanization. We must take swift action to develop systems allowing us to make the first moves in these markets. In the market for biomass power and other energy plants, changes to Japan's feed-in-tariff (FIT) program—under which power companies purchase renewable energy at a fixed price—will result in fewer large-scale projects, but we also expect demand for small- and medium-scale projects, an area in which we excel, to remain steady. In the water treatment plant market, meanwhile, demand for upgrades to aging equipment will continue, and there is an increasing requirement for highly environmentally friendly products that will contribute to building a decarbonized society.

### Securing Orders to Lay the Groundwork for Achieving Vision 2030

Taking into account the changing market, we believe that our performance over the period covered by our 14th Medium-Term Management Plan (MTP) will be a test case for achievement of the Company's long-term vision, Vision 2030. One of our major strategies toward that aim will be to concentrate our energies on establishing a virtuous circle between our EPC business and our recurring revenue model businesses: steadily winning orders for the EPC projects that

lay the groundwork for our recurring revenue model businesses, then successfully translating that foundation into orders for operation management and maintenance. We have set a target for orders received over the three-year period of our current MTP of JPY 600.0 billion, a significant increase over that for the period of our 13th MTP.

Going forward, we will prioritize allocation of human resources, capital, and other management resources toward securing orders for renewals and primary equipment improvements to waste treatment plants within Japan, an area in which we expect high demand. We will strive to remain informed on the demand for decarbonization, cost reduction, and other requirements. In turn, we will make proposals leveraging the technical capabilities that form one of our key strengths to secure three or more orders for renewal projects per year on an ongoing basis. In our Energy Plant Business, we will continue to steadily take on orders for small- to medium-sized biomass power plants. In our Water Treatment Plant Business, meanwhile, we will showcase our technological excellence in environmental friendliness and other areas with the aim of increasing our share of the market in sewage sludge incinerators and sand filtration systems, two of our core products. In our Overseas Business, which we see as presenting a great deal of potential for future business, we will strengthen our collaborations with our local subsidiaries in Thailand and Taiwan and aim to secure orders for power generation from waste and biomass power plant projects, with a focus on the Southeast Asian market.

### Working to Strengthen the Relationships of Trust with Our Customers That Underpin Our Competitive Edge

The relationships of trust we have built up with our customers over many years in the course of numerous plant construction projects is one of Takuma's strengths and the source of our competitive edge. Our 14th MTP adds customer satisfaction as a new KPI and sets a highest-rating target of 60% or more for evaluations of our customer service and overall product quality in our Customer Satisfaction Survey. Going forward, the Corporate Marketing Group will continue to work together as a team to strengthen our relationships of trust with our customers and achieve sustainable growth.

## Message from Our Engineering Officer



**Moving forward with “offensive” and “defensive” digital transformation (DX) to hone our core technologies and human resources and continue the legacy of our corporate value**

**Hideki Takeguchi**

Director & Senior Managing Executive Officer  
Executive Manager of Engineering Group,  
Executive Manager of Management Center

### Strengthening Our Portfolio of Technologies and the Urgent Issue of Labor Shortages

In 1912, Company founder Tsunekichi Takuma succeeded in inventing Japan's first boiler made using only domestic technologies, the Takuma boiler. Since the Company's establishment in 1938, this boiler technology has served as a starting point for our expansion into other business domains with a focus on sectors involved in the adoption of a wide variety of energy sources and environmental protection, including municipal solid waste treatment plants; biomass power and other energy plants; and sewage sludge incinerators, sand filtration systems, and other water treatment equipment. Supporting these products are our core technologies: combustion technologies able to achieve stable combustion of a wide range of fuels and waste materials, heat recovery technologies that efficiently recover the energy generated in this combustion process, flue gas treatment technologies contributing to clean air quality, and more. In the Engineering Group, we ensure that these core technologies are refined and mastered by new generations of workers. At the same time, we work hard as a team and on a daily basis to develop new technologies that will contribute to further increasing the quality of the products we provide.

Meanwhile, global trends concerning the environment are changing rapidly; for example, the growing momentum in favor of decarbonization. Labor shortages due to Japan's declining birth rate and aging population are also predicted to become increasingly severe going forward. These factors will have a significant impact on the plant engineering and maintenance industry, and we recognize action on these issues to be a matter of urgency.

### Combining Our Core and Digital Technologies to Advance “Offensive” DX

In our plant operation business to date, we have worked to utilize digital technologies to save energy and labor, and our 14th Medium-Term Management Plan sets out a policy of further promoting “offensive” DX—through adoption of even further-reaching digital technologies—to provide new value to our customers. To give an example, we will work to upgrade our system supporting stable incinerator operation by combining AI technologies with our combustion technologies (one of our core technology areas).

We will also engage with the use of big data in plant operation. As

part of our efforts to ensure customer satisfaction, we will analyze and utilize the large volumes of data we have collected from the numerous plants we have constructed in the environmental and energy sectors to help us deliver high-quality, low-cost plant operation services.

### Enhancing Training with “Defensive” DX to Help Each Individual Employee Fulfill Their Potential

As we work to achieve our Vision 2030, we have been enhancing our human resources recruitment and development, with a focus on our Maintenance, Construction, and Engineering Divisions. To help new staff swiftly fulfill their potential, we will promote knowledge management that visualizes and effectively utilizes operational information as a form of “defensive” DX. We hope that these initiatives will help us to address labor shortages and diversifying work styles. To strengthen the manufacturing and engineering capabilities that provide our competitive edge, we will also amplify initiatives to use digital tools to record and analyze the work of our experienced technicians at our new Harima Factory, which manufactures major plant equipment (boilers and combustion equipment), and ensure that their craftsmanship is passed on to our junior workers.

In addition, we will also continue to strengthen our R&D in support of building a decarbonized society. In addition to our own internal initiatives, we will also promote open innovation that leverages partnerships with other corporations and organizations, thereby accelerating the practical implementation of decarbonization technologies.

Takuma has held up a company motto of “Value Technology, Value People, Value the Earth” for many years. In the Engineering Group, we will steadily implement the strategies outlined in the Company's 14th Medium-Term Management Plan and hope to parallel the Takuma motto by improving technologies, working to train people, and, as a result, contributing to solving the challenges facing the Earth.



## Domestic Environment and Energy Business

The business contributes to solutions that address issues faced by customers and communities through the construction of plants necessary for the utilization of renewable energy and preservation of the environment and provision of after-sales services. This includes municipal solid waste treatment plants, water treatment plants, and energy plants.

### Municipal Solid Waste Treatment Plants



Waste incineration plant



Recycling plant



Biogas recovery plant

#### Main products

- Waste incineration plants
- Recycling plants
- Biogas recovery plants, etc.

#### Strengths

- Accumulated technology and expertise over 60 years, including core technologies in combustion, heat recovery, and flue gas treatment
- Our achievements are among the top domestically  
Domestic total: approximately **370** facilities (1963 to the end of March 2024)  
Facilities in operation: approximately **120** facilities (as of the end of March 2024)

#### Risks

- Weaker demand associated with population decline and decrease in number of facilities in operation (reorganization)

#### Opportunities

- Ongoing demand for renewal and extending service life associated with aging plants
- Increasing demand for decarbonization technologies
- Increase in O&M contracts and further progress of projects outsourced to the private sector

#### FY2023 Review

In FY2023, we focused on acquiring orders continuously through business proposals based on diversifying needs of customers and communities. As a result, we received two DBO orders. Both orders involve the Takuma Group representing a group of companies for the construction and operation of the facilities for 20 years upon completion, leading to the growth of our recurring revenue model businesses, which serve as growth drivers. In terms of R&D for decarbonization technology under many themes geared towards the future, we have begun a new

demonstration project in Machida City, Tokyo that involves using the CO<sub>2</sub> in combustion gas generated at waste treatment facilities for growing strawberries. This project is being conducted jointly with Aeon Agri Create Co., Ltd., which operates farms directly managed by Aeon, one of Japan's largest supermarket chains, in cooperation with Machida City. In addition to establishing a trigeneration system for electricity, heat, and CO<sub>2</sub>, we aim to expand this initiative to local governments across the country and help reduce domestic CO<sub>2</sub> emissions.

#### FY2024 Initiatives

Under the 14th Medium-Term Management Plan, we aim to increase orders for EPC projects as the assignment of source of recurring revenue model businesses. In addition to prioritizing the assignment of human resources in the Municipal Solid Waste Treatment Plant Business, we will strengthen our ability to win bids by streamlining the proposal creation process, and create a menu of proposals that will set us apart from other companies.

Through these efforts, we aim to receive orders for at least three renewal projects a year and to steadily address demand for primary equipment improvement projects. Going forward, we will continue to strengthen our competitiveness through research and development of decarbonization technology such as separation and recovery of CO<sub>2</sub> and its effective use, as well as digitalization of products and services, such as autonomous plant operation.

### Energy Plants



Biomass power plant



RPF plant



Industrial waste treatment plant

#### Main products

- Biomass power and heat utilization plants
- RPF power generation and heat utilization plants
- Industrial waste treatment plants and similar

#### Strengths

- Accumulated technologies and expertise over 80 years, including core technologies in combustion and heat recovery
- Our achievements are among the top domestically  
Boilers: over **3,200** units  
Biomass plants: over **640** units  
\* domestic and overseas, as of the end of March 2024

#### Risks

- Weaker demand due to tight market conditions for biomass and non-fossil fuel
- Decreased demand due to government policies or changes in support system

#### Opportunities

- Growth in energy usage demand for biomass and non-fossil fuel in order to alleviate climate change
- Increased maintenance demand associated with the larger number of plant constructions

#### FY2023 Review

Due to the revision of the FIT system, the scope of FIT certification was lowered from power generation output of less than 10MW to less than 2MW in April 2023. In FY2023, we received orders for six FIT biomass power plants, mainly those that were certified by March of the same year. In addition, we also received steady orders for projects other than FIT, such as biomass plants for private consumption that use paper waste, woody biomass, and

RPF as fuel, as well as industrial waste treatment plants. Since the start of the FIT system in FY2012, we have received 84 orders (including 60 FIT orders), of which 65 had started operation by the end of March 2024, helping to spread the use of renewable energy and contributing to customers' energy savings and CO<sub>2</sub> emissions reduction initiatives.

#### FY2024 Initiatives

We expect demand for the construction of new biomass power plants, mainly small and medium-sized (2–10MW), biomass plants for private consumption such as fuel conversion, and projects for the renewal and expansion of industrial waste treatment plants to remain firm. At the same time, we will strive to continuously acquire such orders. We will offer proposals for solutions targeting

the increasing number of plants we have built each year, including precisely targeted maintenance services, energy savings, power generation output enhancements, improvements in equipment functionality, and extending service life. In this way, we are helping customers both resolve issues and reduce carbon dependency while steadily growing our recurring revenue model businesses.

## Water Treatment Plants



Sewage sludge-fueled power plant



Sewage sludge-fueled power plant



Moving-bed sand filtration system (Uniflow Sand Filter)

### Main products

- Sewage sludge-fueled power plants
- Moving-bed sand filtration system (Uniflow Sand Filter), etc.

### Strengths

- Accumulated technologies and expertise over 60 years covering various treatments of water and sludge
- Technical advantages of energy-saving and energy-creating sewage sludge incineration system using unique combustion method (more than 20 units since 1973)
- Our achievements include a total of over 2,900 units of sand filtration systems delivered since 1979

### Risks

- Intensifying competitive environment

### Opportunities

- Higher demand for renewal and extending service life associated with the aging of sewage treatment facilities
- Increased demand for low carbonization in sewage treatment through energy-saving and energy-creation
- Increasing trend of all-inclusive orders covering plant construction, management and maintenance

### FY2023 Review

We received an order for a plant for Osaka Prefecture Chuo Mizu Mirai Center, our fourth sewage sludge incineration plant with power generation facility. The order was secured based on the proposal that met customer needs with a focus on energy saving and energy creation, such as auxiliary fuel, power consumption, reduction of greenhouse gas N<sub>2</sub>O, and energy creation through power generation. This project will include the design and construction of the facility, as well as maintenance and management services for approximately 10 years. This is the first time for Takuma to undertake an all-inclusive management project

with these services included.

Additionally, we received an order for large-scale renewal work for sand filtration systems from the Tokyo Metropolitan Government (Ochiai Water Reclamation Center). This project follows the *Construction Part I* order received in December 2021, and involves upgrading the aging fixed-bed type sand filtration system to a high-speed upflow moving-bed for the advanced treatment of sewage. The overall water treatment capacity combining this project with *Construction Part I* will be 340,000 m<sup>3</sup>/day, which is the largest in Japan.

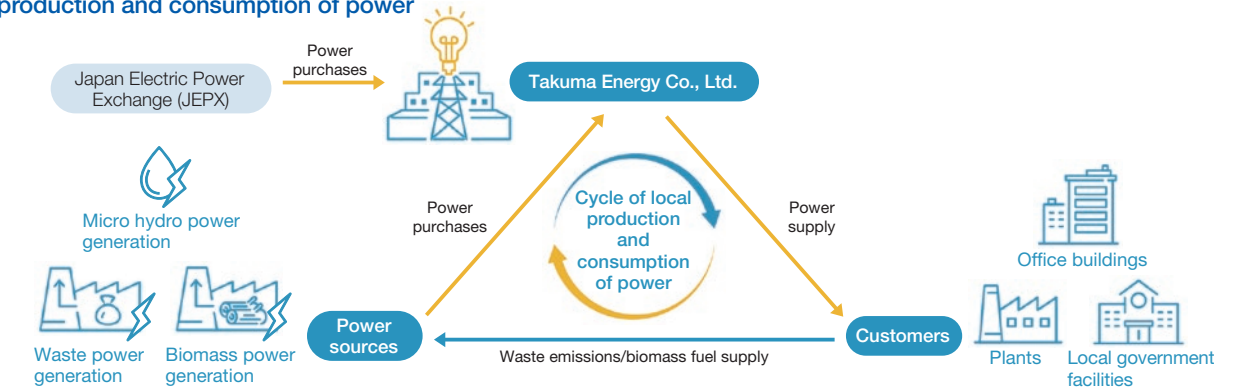
### FY2024 Initiatives

We will work on obtaining continuous orders and increasing our market share of sludge incineration plants through project proposals matched to customer needs by harnessing our technological advantage in energy-saving and energy creation. We also aim to increase orders for sand filtration systems by uncovering renewal demand from fixed bed to high-speed upflow moving-bed through unique proposals that highlight their strengths.

Moreover, we aim to expand our after-sales services business by working to acquire repeat orders for regular maintenance and recommending small and medium-sized repairs. We will develop a structure for the implementation of comprehensive projects covering plant construction, operation and maintenance, which is an area expected to grow going forward.

## Power Retail Business

### Local production and consumption of power



### Main services

- Electricity retailing (local production and consumption of power, menu of CO<sub>2</sub> emissions reductions)
- Sales of non-fossil fuel certificates, etc.

### Strengths

- Accumulated expertise in the handling of renewable and non-fossil power sources with an emphasis on waste and biomass power generation
- Ability to propose and implement solutions through local production and consumption of power business and handling of environmental value
- Provision of various services using demand and supply management, including agent services for electricity wheeled for self-use

### Risks

- Rapid fluctuations in electricity market prices and fuel prices
- Changes in the legal system

### Opportunities

- Increasing needs for electricity with environmental value, such as renewable energy and CO<sub>2</sub>-free energy, as well as regional low-carbon needs
- Expanding business opportunities with our plant users and related companies
- Creation of new customers for our company through transactions related to Power Retail Business

### FY2023 Review

To meet the demand for locally utilizing FIT electricity and environmental value generated locally, in March 2024, we launched a local production for local consumption project based on public-private partnership. Through this, we supply electricity and environmental value from the Chigasaki Biomass Power Plant (previously built by us) that uses pruned branches in Fujisawa City as fuel to the Fujisawa City, Kanagawa Prefecture Resource Recovery Cooperative Association. In order to meet the needs for effective utilization of power plants after FIT

purchase period expiration, we started a new local production for local consumption project in August 2023 in Kitahiroshima Town, Hiroshima Prefecture that utilizes electricity from a FIT-expired micro hydro power plant run by the town. Furthermore, we concluded a comprehensive partnership agreement with the town for decarbonizing the region in October of the same year. Utilizing the expertise we have cultivated in the electricity retailing business, we are working collaboratively to achieve both regional decarbonization and sustainable development.

### FY2024 Initiatives

In order to reduce the risk of rapid fluctuations in electricity market prices, we will continue working to expand the relative power sources procured outside the market, and utilize our past achievements and experience to develop new businesses based on customer needs, thereby ensuring new customers. In addition, we aim to expand the provision of various services, including building schemes for more directly producing and

consuming electricity locally, agent services for self-consignment that helps customers stabilize electricity costs, and sales services for environmental value such as renewable energy and CO<sub>2</sub>-free energy. We will also make efforts to expand our new service lineup. Through these initiatives, we aim to further contribute to climate change countermeasures and address regional issues by proposing schemes tailored to each region.



## Overseas Environment and Energy Business

In response to the increasing demand for biomass power plants, as well as waste treatment due to urbanization in Southeast Asian countries, we provide plant construction and maintenance services primarily in Thailand and Taiwan, where we have local subsidiaries.



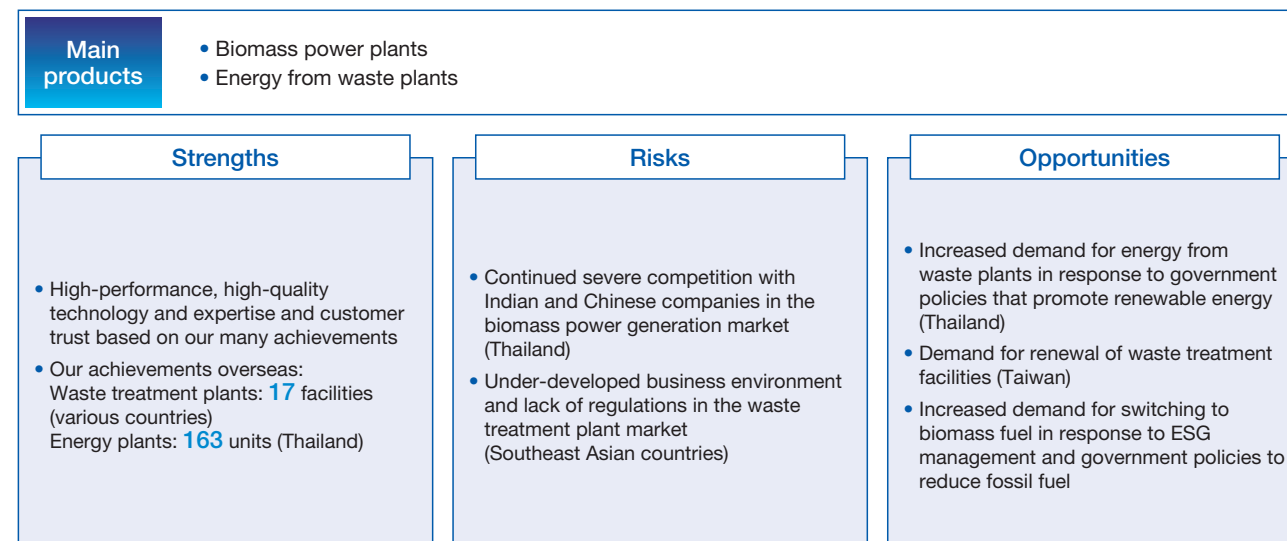
Energy from waste plant (England)



Energy from waste plant (Taiwan)



Biomass power plant (Thailand)



### FY2023 Review

In Thailand, the demand for energy from waste plants and biomass power plants is expected to increase given policies that promote renewable energy. In Taiwan, the demand for renewing waste treatment facilities that are aging is growing. Meanwhile in Vietnam, there is a growing demand for manufacturing factories to have an in-house treatment plant for treating industrial waste generated. Given such a backdrop, our local subsidiaries in Thailand and

Taiwan have conducted sales activities and developed systems aimed at acquiring orders. Within the three years of the 13th Medium-Term Management Plan (FY2021 to FY2023), we received three orders, including facility renovation work for a waste to energy plant in Taiwan, construction of a waste treatment plant in Vietnam, and construction of an energy plant in Thailand.

### FY2024 Initiatives

As decarbonization continues on a global scale, demand for energy from waste and biomass power plants and conversion from fossil fuels to various biomass fuels is expected to increase in Southeast Asian countries due to power shortages and rising populations associated with economic growth. Given the highly competitive biomass power plant market in Thailand against Indian and Chinese companies, we aim to differentiate our brand in terms of performance and quality, through our technology offering stable

operation and high efficiency to ensure acquisition of business. In the market of waste treatment plants in Thailand and Taiwan, we will form project-based consortiums with local companies and develop a scheme that allows the Takuma Group to demonstrate its added value, thereby securing at least one to two orders for new construction per year. Through the above initiatives, our goal is to achieve stable profitability and sustainable growth in the Overseas Environment and Energy Business.

## Package Boiler Business

Group company Nippon Thermoener Co., Ltd., manufactures, sells, and maintains heat source equipment, such as general-purpose boilers and water heaters, to meet the heat demand (steam, hot water) for various types of manufacturing plants as well as hotels, hospitals, commercial buildings, and other facilities.



Once-through boilers



Vacuum-type water heaters



Hybrid hot water supply systems



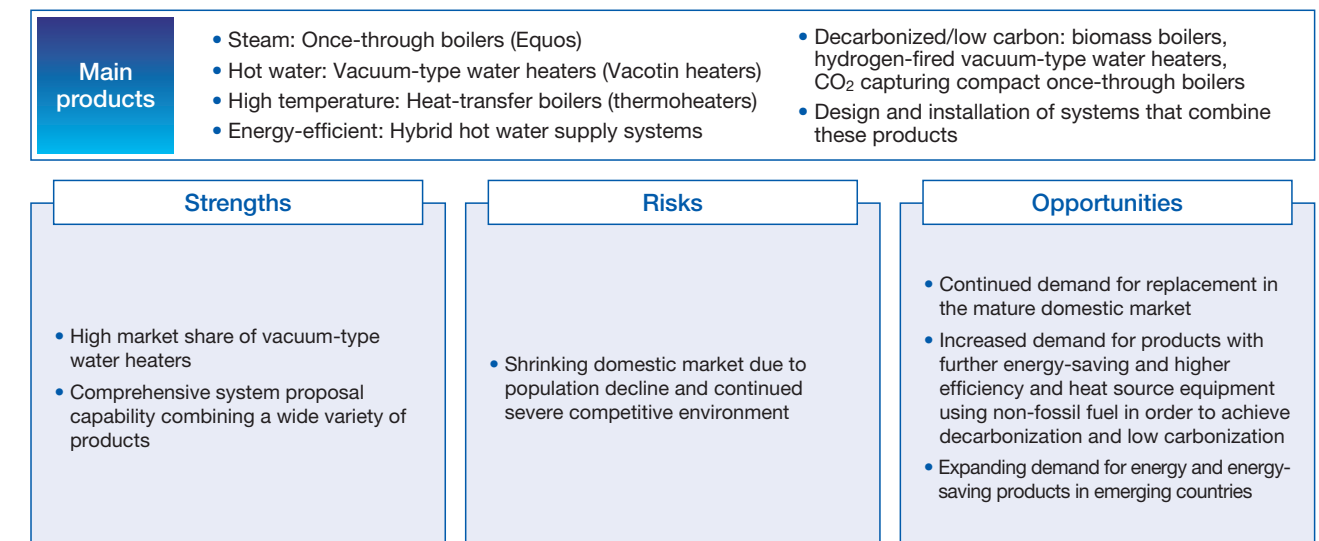
Biomass boilers



Hydrogen-fired vacuum-type water heaters



CO<sub>2</sub> capturing compact once-through boilers



### FY2023 Review

Although the domestic general-purpose boiler market has matured and will shrink over the medium- and long-term, we expect demand for equipment replacement and related services to continue in the near term due to the large size of the installed base. As energy demand overseas is rising due to rising populations and urbanization especially in emerging countries, the demand for heat source equipment is expected to grow overseas. In response to decarbonization and low carbonization,

the demand for products with further energy-saving and higher efficiency as well as heat source equipment using non-fossil fuel is expected to increase. In FY2023, we captured strong demand for replacement in the domestic market due to the recovery trend in facility operation rate and investment in equipment. Moreover, we have also worked to develop products for decarbonization, such as a hydrogen-fueled vacuum-type water heaters and CO<sub>2</sub> capturing compact once-through boilers.

### FY2024 Initiatives

As stated previously, replacement demand in Japan and energy demand in emerging countries are expected to continue. Going forward, our goal is to cultivate replacement demand in the domestic market and increase orders in overseas markets with a focus on Southeast Asia, as we have a local subsidiary in Thailand, through making system proposals best matched to customer

needs based on our diverse product line-up. At the same time, we aim to maintain and expand the scale of orders received over the medium to long term by developing carbon-free and low-carbon products and cultivating markets, and steadily expand earnings in the Package Boiler Business.

# Equipment and Systems Business

Group company Sunplant Co., Ltd. designs and installs a range of building equipment for the interior environment of buildings, including air-conditioning, sanitation (for water supply and drainage), and firefighting systems, while group company Dan-Takuma Co., Ltd. supplies and provides services for clean system-related equipment and devices to achieve a highly sterile environment required for semiconductor and electronic device manufacturing processes.



Installation of air conditioning equipment



Installation of water supply and drainage sanitation facilities



Example of cleaning process in semiconductor manufacturing



Formation of microbubbles

## Main products

### Building equipment business

- Installation of air conditioning equipment and sanitation systems for water supply and drainage (main targets include hospitals, welfare facilities, education and research institutions, factories, commercial and cultural facilities), etc.

### Semiconductor industrial equipment business

- Chemical filters, AMC environmental concentration analyzers, clean environment equipment, cleaning equipment, magnetically shielded chamber equipment, etc.

## Strengths

### Building equipment business

- Extensive construction experience for public facilities with highly specialized design needs, etc.

### Semiconductor industrial equipment business

- Product group of essential elements used around main semiconductor manufacturing equipment, bringing practical solutions from customer perspectives to meeting challenges by working closely with customers. Acquisition of joint patents through joint-research with academia

## Risks

### Building equipment business

- Labor shortage in the building industry, cooling demand for building investment

### Semiconductor industrial equipment business

- Market changes due to economic security reasons with strong international political implications

## Opportunities

### Building equipment business

- Increased investment in buildings for redevelopment, demand for renewing/renovating existing buildings

### Semiconductor industrial equipment business

- Further expansion and growth in the semiconductor manufacturing equipment field to accommodate the medium to long term expansion of the semiconductor and electronic device industry

## FY2023 Review

In the building equipment industry, active investment in buildings by private companies increased and demand from the public sector steadily rose. On the other hand, challenges such as rising costs due to higher costs of raw materials and labor expenses and labor shortages remain. Additionally, while a market boom was seen in the semiconductor/electronic device industry over the past few years, it has passed its peak and now leveled off. However, progress in decoupling the global supply chain has meant that a

certain level of demand has been maintained in the manufacturing equipment field given the investments in the construction of semiconductor plants as an instrument of national policy in each country. In FY2023, fewer orders were received compared to the previous fiscal year due to a recoil in large projects in the building equipment business, and stagnant market conditions in the semiconductor/electronic device industry.

## FY2024 Initiatives

Steady demand for renewal and renovation work on ageing buildings is expected over the medium to long term in the building equipment industry. In the building equipment business, we will continue to secure and foster human resources and improve construction capabilities and strive to increase orders and increase profitability by focusing on obtaining orders with greater profit. In the semiconductor industrial equipment business, we will further expand the international sales business, which is positioned as the growth engine for the business' further expansion in a sluggish market that

has yet to bottom. At the same time, we will apply the results to our domestic sales business in strengthening our competitiveness during the transition towards a market recovery. In addition, we will strive to create additional fields to increase future profits based on joint patents with Tohoku University. These include microbubbles for cleaning semiconductor wafers. We aim to steadily and sustainably increase earnings in the Equipment and Systems Business through these initiatives carried out at the two companies.