

Vision UBE 2025 — Prime Phase

**Briefing Session for Medium-Term
Management Plan**

May 22, 2019

Ube Industries, Ltd.

Masato Izumihara, President & Representative Director



Summary of Previous Medium-Term Management Plan and Earnings Forecast for FY2019



Corporate Images the UBE Group Aims to Realize



Vision UBE 2025



Vision UBE 2025 — Prime Phase



Summary of Previous Medium-Term Management Plan and Earnings Forecast for FY2019





Summary of Previous Medium-Term Management Plan



■ Achievement of Numerical Targets

		FY2018 Results	Targets
Key Figures	Operating profit	¥44.5 billion	¥50.0 billion
	Ordinary profit	¥47.8 billion	¥49.0 billion
Key Indicators	Return on sales (ROS)	6.1%	6.5% or above
	Return on equity (ROE)	10.1%	9.0% or above

*Achieved both profit and cash flow targets for cumulative three-year period

■ Measures Taken

1. Capacity increases:
Added 40,000 tonnes nylon capacity (Spain), increased separator capacity to 250 million square meters (Sakai)
2. Alliances, mergers, acquisitions:
Nylon compounds (acquired Repol S.L. in Spain), high-purity dimethyl carbonate (DMC) (joint venture in China), separator (strengthened joint venture with Maxell Holdings, Ltd.), electrolyte business in China (joint venture with Mitsubishi Chemical Corp.), injection molding machine (acquired from Mitsubishi Heavy Industries, Ltd.)
3. Cost reductions, etc.:
Phenol-based manufacturing facilities for cyclohexanone (Ube), manufacturing facilities for large-grain ammonium sulphate (Ube), exhaust heat recovery system (Isa; starting up in FY2019)

■ Future Challenges

Rapidly capitalize on the measures that were taken, and achieve further growth, focusing on chemicals



FY2019 Earnings Forecast

UBE

- Increase revenues and profits for all three internal companies, focusing on the Chemicals Company

(Billions of yen)

Item	FY2018	FY2019	YOY
Net sales	730.1	760.0	29.9
Operating profit	44.5	47.0	2.5
Ordinary profit	47.8	47.0	(0.8)
Profit attributable to owners of parent	32.4	31.0	(1.4)
Interest-bearing liabilities	187.2	190.0	2.8
Equity capital	329.5	352.0	22.5
Return on equity (ROE)	10.1%	9.1%	(1.0)%
D/E ratio [times]	0.57	0.54	(0.03)

- ✓ FY2019 assumptions (business factors):
 Exchange rate at ¥110/USD
 Naphtha at US\$570/tonne (CIF)
 Australian coal at US\$125/tonne (CIF)



FY2019 Earnings Forecast by Segment



- Although spreads for caprolactam are projected to shrink in the Chemicals segment, UBE will secure higher revenues and profits by increasing sales of specialty products

(Billions of yen)

Segment	Net sales			Operating profit		
	FY2018	FY2019	YOY	FY2018	FY2019	YOY
Chemicals	324.2	345.0	20.8	24.6	26.5	1.9
Construction Materials	321.0	330.0	9.0	14.4	15.0	0.6
Machinery	97.2	100.0	2.8	5.4	6.0	0.6
Others	4.9	5.0	0.1	0.8	0.7	(0.1)
Adjustment*	(17.3)	(20.0)	(2.7)	(0.7)	(1.2)	(0.5)
Total	730.1	760.0	29.9	44.5	47.0	2.5

- ✓ FY2019 assumptions (business factors):
Exchange rate at ¥110/USD
Naphtha at US\$570/tonne (CIF)
Australian coal at US\$125/tonne (CIF)

*Includes elimination of inter-segment transactions

Corporate Images the UBE Group Aims to Realize





Corporate Images the UBE Group Aims to Realize



■ Founding Principles of UBE

“Coexistence and mutual prosperity”
“From finite mining to infinite industry”

■ UBE Corporate Philosophy

Pursue technology and embrace innovation to create value for the future and contribute to social progress

■ UBE Management Principles

1. Ethics

Be highly ethical, comply with laws and regulations, and respect social norms

2. Safety and Security

Work to conserve the global environment and practice safe, secure manufacturing

3. Quality

Deliver quality that earns the trust of customers and society

4. People

Respect individuality and diversity, and build healthy and comfortable workplaces



Vision UBE 2025

Vision for the UBE Group in 2025 and strategies for realizing that vision





1. Vision for 2025

“We Continue to Create Value for All Stakeholders”

The UBE Group will anticipate market needs and create products and services that are in harmony with the environment. Furthermore, the Group will positively contribute to all stakeholders as a corporation with a global presence.

2. Strategies for Realizing the 2025 Vision

(1) Leverage the consolidation of the organization under three internal companies to promote independent business development and governance for each internal company

Consolidation under three internal companies facilitates independent business operation and accelerates decision-making

Positioning of Three Internal Companies

Chemicals	Further stabilize revenues and drive the growth of the entire Group
Construction Materials	Generate stable profits and cash flow, and expand new businesses
Machinery	Operate the business according to its business characteristics and increase the value of the business.



(2) View changes in the business environment as both challenges and opportunities, linking them to growth

i) Be part of the solution for global environmental issues

Create and expand technologies and products that help to reduce greenhouse gas (GHG) emissions and environmental impacts

ii) Capture new markets through further globalization

View the expansion of international markets as growth opportunities and actively establish new manufacturing facilities and sales offices

iii) Enhance governance and foster a healthy corporate culture

Enhance management transparency and internal control systems while continuing to reform the corporate culture and employee attitudes

(3) Key measures to address management and business issues

i) Expand human management resources

Offer provisions that enable diverse human resources to make contributions, prepare favorable work environments in order to secure human resources, and develop human resources who can help to increase corporate value

ii) Utilize ICT

Utilize information and communication technology (ICT) to increase productivity, while also utilizing ICT in R&D to create new added value

VI Vision UBE 2025 — Prime Phase

Medium-term management plan for the next three years through fiscal 2021, a milestone on the road to achieving Vision UBE 2025





- Three-year action plan with a strong focus on long-term growth, looking ahead to fiscal 2025 and beyond

Basic Strategies

1. Strengthening the platform for business growth

- (1) Realize the next stage of growth, focusing on the chemicals business
- (2) Expand overseas business locations, further develop collaborative efforts among Group companies in and outside of Japan, and swiftly respond to changes in the global business environment



Chemicals	Increase presence in the Americas in addition to Asia and Europe
	<ul style="list-style-type: none">● Expand the manufacturing operations in Thailand, Spain, and Malaysia (high-performance coatings, synthetic rubber)● Consider entering markets in the Americas (nylon compounds, fine chemicals)
Construction Materials	Increase business in Southeast Asian markets <ul style="list-style-type: none">● Construct new plant in Thailand (MOS-HIGE)
Machinery	<ul style="list-style-type: none">● Increase sales and servicing in Asian markets and India market (die casting machines, industrial machines)● Deploy models that meet the needs of North American and Asian markets● Build optimized production framework (injection molding machines)



Basic Strategies



- (3) Generate stable and sustainable cash flows, and execute growth investments
- (4) Diversify work-style provisions to secure human resources and enhance competitiveness



- A) Hire and allocate human resources in accordance with business strategies, and expand the programs for human resources development
- B) Establish workplace conditions that enable diverse human resources (including women, older workers, foreign nationals, and persons with disabilities) to contribute
- C) Secure and develop human resources who can make global contributions

- (5) Utilize ICT to create value and to increase business efficiency, and develop related human resources



- A) Increase productivity and pursue business efficiencies
- B) Pursue R&D and create new businesses
- C) Prepare key foundations: Information security measures and support for diverse work-styles



2. Strengthening the management platform (corporate governance)

(1) Strengthen supervision of corporate management and accelerate decision-making

- Transition from a company with Board of Corporate Auditors to a company with Audit & Supervisory Committee
- A) Delegate key decisions for business execution from the Board of Directors to directors and accelerate the decision-making
- B) Expand the functions of the Board of Directors for monitoring business execution by directors
- C) Enhance the supervisory functions of the Board of Directors, by giving directors who are members of the Audit & Supervisory Committee voting rights at Board of Directors meetings

(2) Make certain to execute recurrence prevention measures for quality issues and continuously improve them, while strengthening the framework for quality assurance

- Implement top-down management of quality (foster a comprehensive emphasis on quality through a top-down approach)
- Ensure operation and strengthen Group quality management systems

(3) Strengthen internal control systems to further enhance compliance and business ethics

- Establish risk management framework and operate risk management systems



3. Address and be part of the solution to resource, energy, and global environmental issues

- (1) Make certain to achieve FY2021 targets and set new long-term targets focusing on 2030
- (2) Reduce environmental impacts throughout the supply chain
- (3) Create and expand the scope of new technologies and products that help reduce environmental impact

Chemicals	<ul style="list-style-type: none">● Conduct R&D and demonstration experiment of technologies and products that help to reduce and/or utilize GHG emissions● Develop and expand environmentally friendly technologies and products (Battery materials, EV products, weight-reduction components and materials in mobility domain, fuel economy-related products)● Create new business models for a recycling-based society (waste plastics solutions)
Construction Materials	<ul style="list-style-type: none">● Implement energy conservation measures (Deploy high-efficiency coolers, recover exhaust heat from kiln, increase waste use in place of thermal energy)● Conduct demonstration of renewable energy solution (torrefied pellets)
Machinery	<ul style="list-style-type: none">● Develop environmentally friendly and resource recycling products, improve energy efficiency of existing products● Meet vehicle weight reduction needs (solutions for new composite components and structural members)



Environment Addressing and being part of the solution to resource, energy, and global environmental issues

UBE

■ Greenhouse Gas Emissions

Target

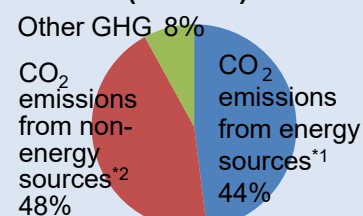
15% reduction in emissions from FY2005 levels by FY2021

(UBE Group in Japan and main offices outside of Japan)

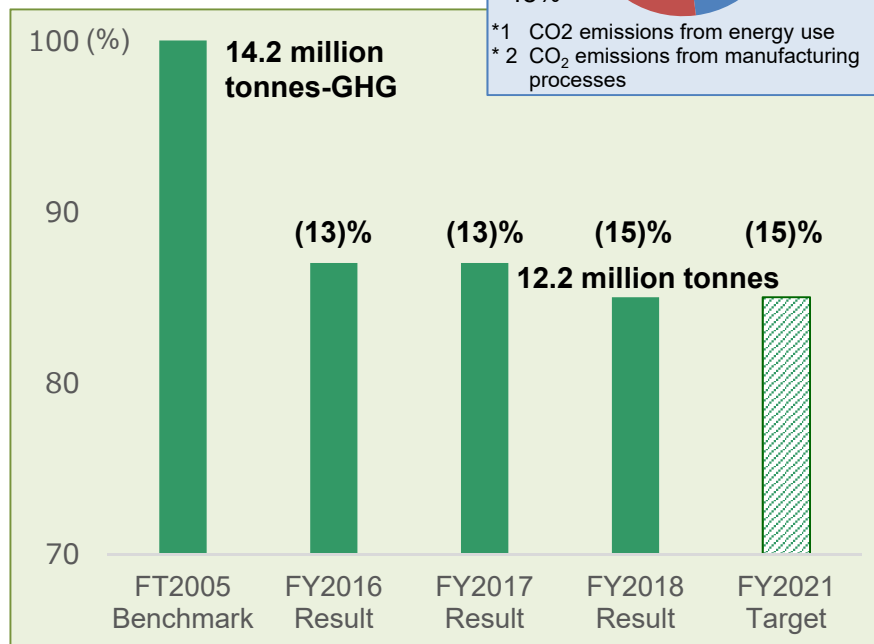
Main Strategies in Recent Years

- Switch to phenol-based manufacturing for cyclohexanone
- Increase waste plastics use
- Deploy exhaust heat recovery systems

GHG Emissions (FY2018)



^{*1} CO₂ emissions from energy use
^{*2} CO₂ emissions from manufacturing processes

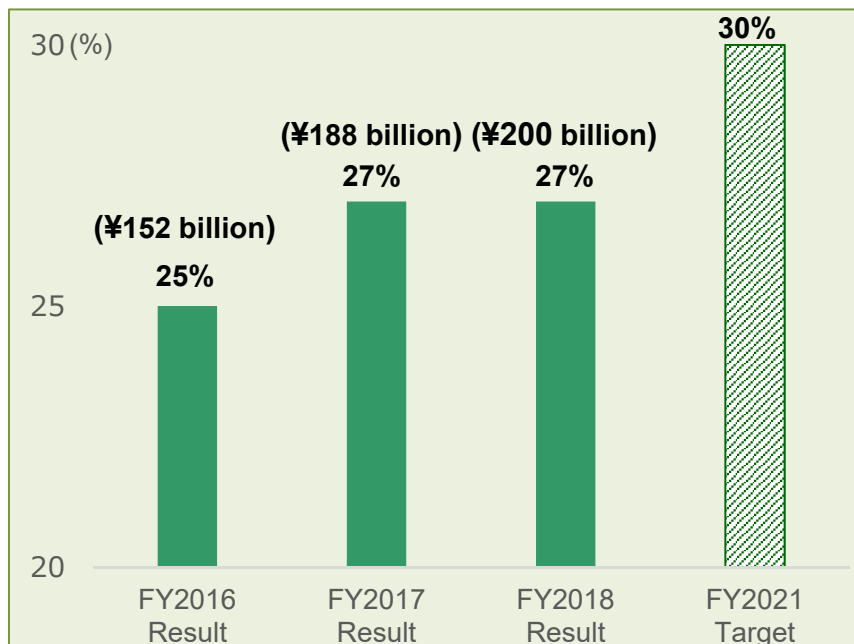


■ Percentage of Net Sales from Environmental Businesses

Aim for sales of environmental products to account for at least 30% of total net sales by FY2021

Main Environmental Technologies and Products

Weight reduction materials (nylon, synthetic rubber), high-performance coatings, polyimide products, gas separation membranes, lithium-ion battery (LIB) separators, LIB electrolytes, biomass fuels, recycling business, MOS-HIGE, energy-efficient equipment

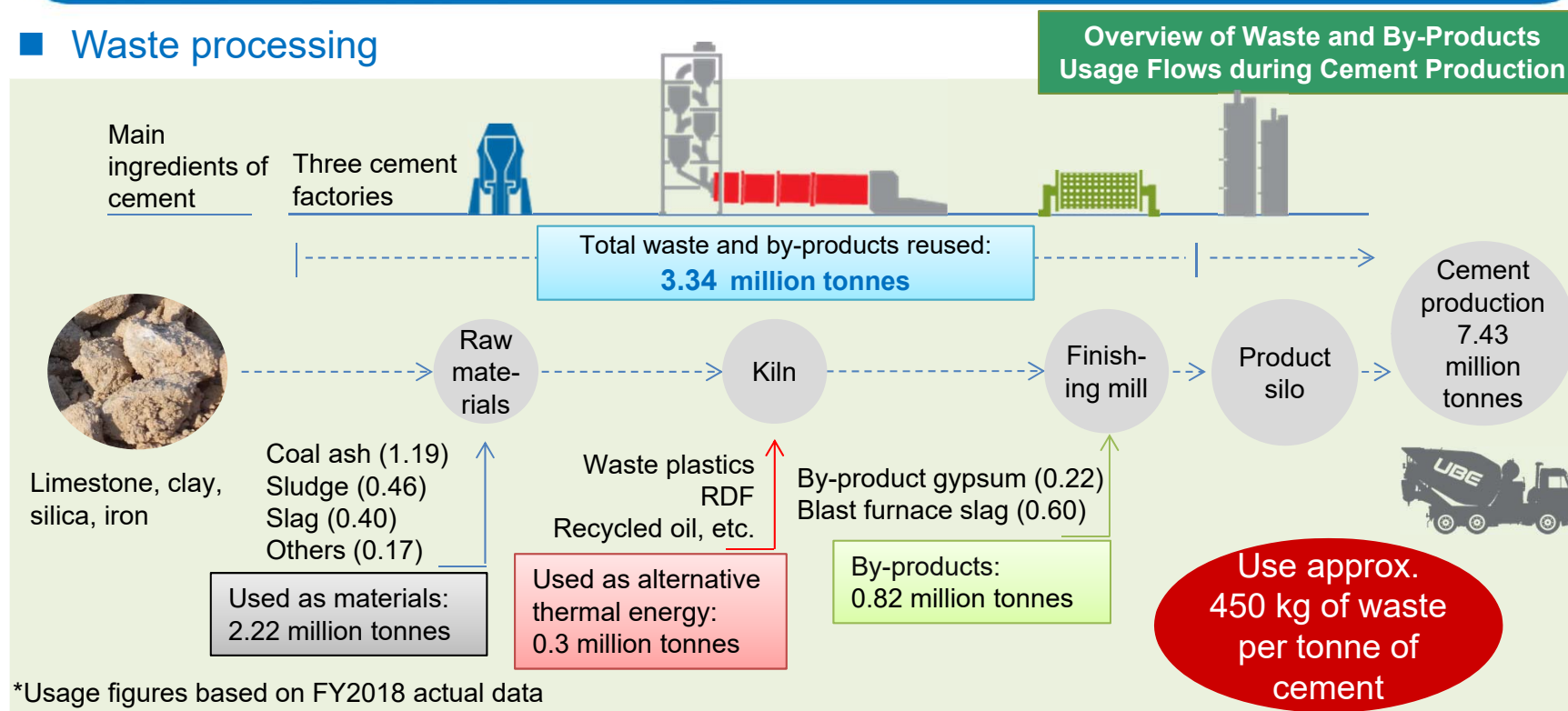




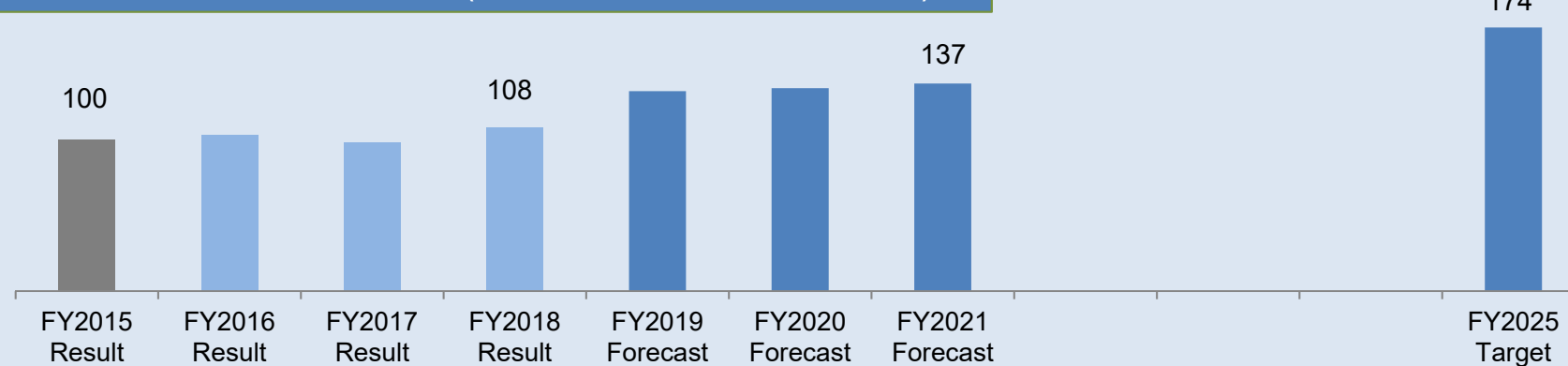
Environment Addressing and being part of the solution for resource, energy, and global environmental issues

UBE

Waste processing



Waste Used as Alternative Fuel (FY2015 Level Used as Baseline of 100)





Target Business Domains

UBE

- Expand existing businesses and their peripheral businesses, develop new businesses, and continue to supply new value to markets and customers, in the four business domains

Environment and energy

(resource and energy conservation, new materials)

Battery materials

Energy

Resource recycling

Lithium titanium oxide (LTO)

Inorganic specialty materials

Biomass fuel

Construction and infrastructure

(infrastructure, living environment, smart cities)

High-performance coatings

Separation membranes

Ceramics

Cement and ready-mixed concrete

Magnesia and calcia

Industrial machines and steel products

Neutral solidification material

Heavy metal immobilizer

Next-generation maintenance and improvement systems

Mobility (automotive, rail, aeronautical fields)

Nylon

High-performance coatings

Synthetic rubber

Separation membranes

Ceramics

Battery materials

Fine materials

Molding machines

Tyranno Fiber

Lithium titanium oxide (LTO)

Healthcare (foods, pharmaceuticals, lifestyle enhancement)

Pharmaceuticals

Nylon

Industrial chemicals

Fine chemicals

Healthcare-related substance production system



Developing businesses	Tyranno Fiber, lithium titanium oxide (LTO)
Active growth businesses	Nylon, fine chemicals, high-performance coatings, synthetic rubber, polyimides, separation membranes, separators
	Magnesia and calcia, biomass fuel, resource recycling
Platform businesses	Caprolactam, industrial chemicals, electrolytes, pharmaceuticals
	Cement and ready-mixed concrete, energy
	Molding machines, industrial machines, steel products



Investments and R&D Expenditure by Business Portfolio Segmentation

UBE

- Increase the share of business resources allocated to **active growth businesses** while focusing on capital efficiency
- Continue to **build platform for securing stable revenues** and implement cost reductions through streamlining

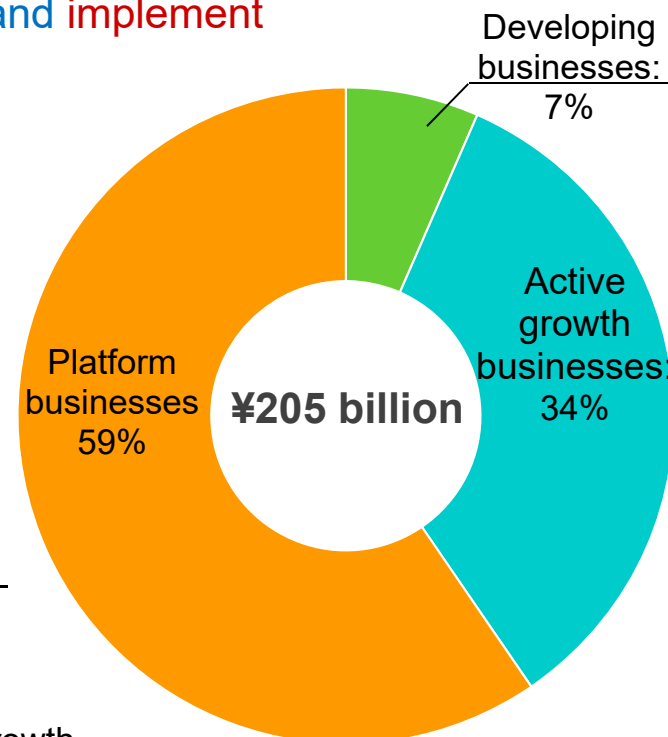
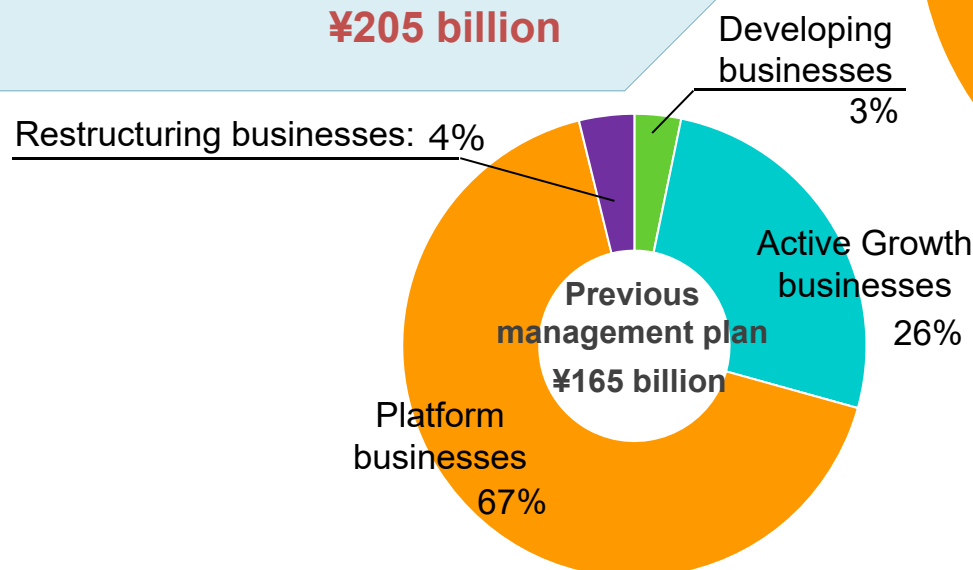
◆ Investments over three years: ¥160 billion

Capital investment: ¥140 billion

Other investment (including M&A): ¥20 billion

◆ R&D expenditure over three years: ¥45 billion

◆ **Total: ¥205 billion**





Investments and Cash Flow by Segment

UBE

■ Investment Strategy by Segment

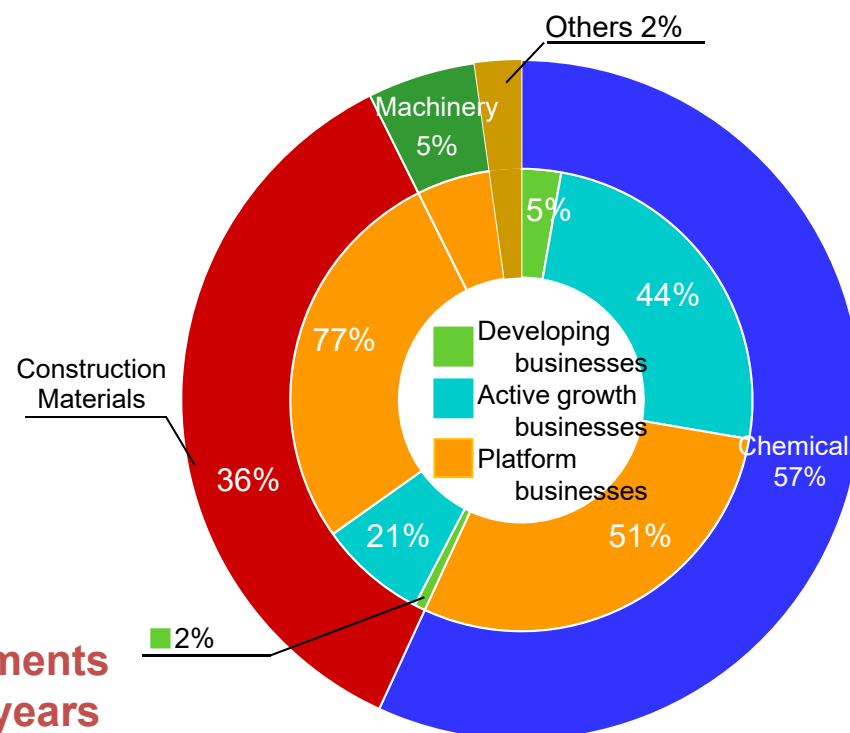
Chemicals	Allocate resources focusing on active growth businesses in UBE's specialty domains
Construction Materials	Focusing on platform businesses, allocate resources to reducing environmental impact and costs in order to maintain and expand profits
Machinery	Invest in preparing an optimized production framework, improving production efficiency, and increasing production capacity

■ Three-Year Cash Flow Plan

Operating cash flow: ¥200 billion

Investment cash flow: ¥(160) billion

Free cash flow: ¥40 billion





R&D Expenditure and New Business Development

UBE

- Create new businesses in the UBE Group's target business domains
- Allocate R&D resources focusing on active growth businesses
- Strengthen elemental technologies and expand advanced technologies
- Also focus on environmental solutions such as CO₂ utilization and application

R&D projects for new business creation

Environment and energy

- Inorganic specialty materials (strontium carbonate)
- Carbon-reducing businesses (CO₂ sequestration in minerals, CO₂ co-electrolysis methanation, waste plastics recycling)
- Thermal management components and materials (high-performance insulation materials)

Mobility

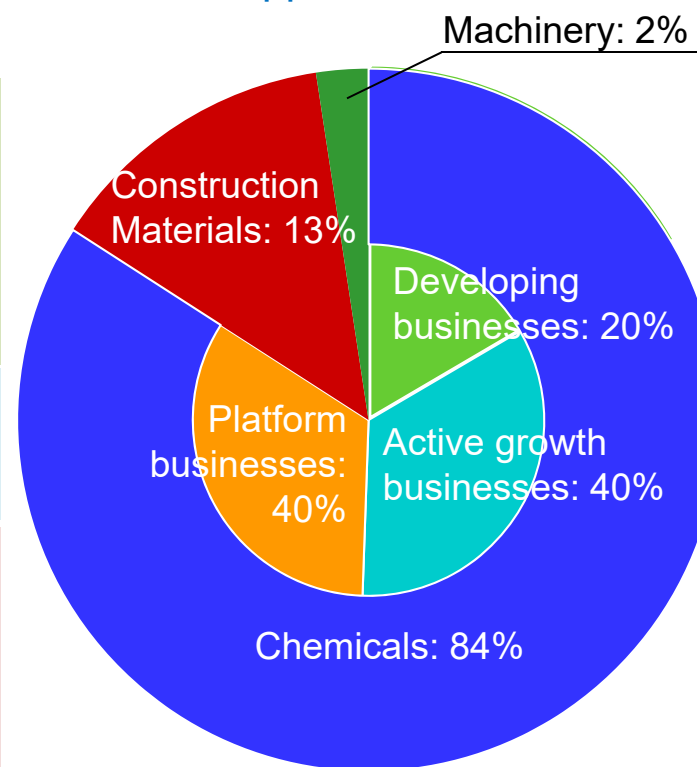
- Vehicle weight reduction components and materials (new composite materials and components)

Construction and infrastructure

- Next-generation maintenance and improvement systems (concrete spalling prevention solution, high-performance waterproofing system for concrete slabs, new foaming insulation materials)

Healthcare

- New drug discovery research
- Healthcare-related substance production system (cell culturing system, new multiporous membrane development)



Breakdown of 45 billion yen in R&D costs over three years



■ Key Figures

Operating profit

¥55.0 billion

Ordinary profit

¥58.0 billion

■ Key Indicators

Return on sales (ROS)

7%

Return on equity (ROE)

10%



Numerical Targets

UBE

(Billions of yen)

Item	FY2018 Results (A)	FY2019 Targets	FY2020 Targets	FY2021 Targets (B)	Difference (B) – (A)
Net sales	730.1	760.0	740.0	770.0	39.9
Operating profit	44.5	47.0	49.0	55.0	10.5
Ordinary profit	47.8	47.0	51.0	58.0	10.2
Profit attributable to owners of parent	32.4	31.0	32.0	35.0	2.6

- ✓ FY2021 assumptions (business factors):
Exchange rate at ¥105/USD
Naphtha at US\$640/tonne (CIF)
Australian coal at US\$125/tonne (CIF)



Net Sales and Operating Profits by Segment



(Billions of yen)

		FY2018 Results (A)	FY2019 Targets	FY2020 Targets	FY2021 Targets (B)	Difference (B) – (A)
Net sales	Chemicals	324.2	345.0	330.0	350.0	25.8
	Construction Materials	321.0	330.0	325.0	330.0	9.0
	Machinery	97.2	100.0	100.0	105.0	7.8
	Others	4.9	5.0	5.0	5.0	0.1
	Adjustment*	(17.3)	(20.0)	(20.0)	(20.0)	(2.7)
	Total	730.1	760.0	740.0	770.0	39.9
Operating profit	Chemicals	24.6	26.5	27.0	32.0	7.4
	Construction Materials	14.4	15.0	16.0	16.5	2.1
	Machinery	5.4	6.0	6.5	7.0	1.6
	Others	0.8	0.7	0.5	0.5	(0.3)
	Adjustment*	(0.7)	(1.2)	(1.0)	(1.0)	(0.3)
	Total	44.5	47.0	49.0	55.0	10.5

*Includes elimination of inter-segment transactions

- ✓ FY2021 assumptions (business factors):
 Exchange rate at ¥105/USD
 Naphtha at US\$640/tonne (CIF)
 Australian coal at US\$125/tonne (CIF)

Business Plan and Strategy by Segment





- Foster stability and further develop businesses by contributing to a low-carbon society while continuing to create value for customers
- Pursue further globalization and strengthen solutions-oriented business models
- Develop and expand environmentally friendly technologies and products



- A) Accelerate growth by prioritizing the allocation of business resources to the active growth businesses:
Nylons, fine chemicals, high-performance coatings, synthetic rubber, polyimides, separation membranes, and separators
- B) Maintain stable revenues and increase revenues of the platform businesses by reducing costs and pursuing differentiation in target markets:
Caprolactam, industrial chemicals, electrolytes, pharmaceuticals, etc.
- C) Create next-generation businesses by promoting developing businesses and rapidly capitalizing on R&D projects:
Tyranno Fiber and LTO



Chemicals Company: Nylon Strategy

UBE

- With the global perspective, establish close relationships with customers, expand the scale of production, and shift to a high-revenue structure

Business Conditions

- Growth in film applications due to improved living standards in newly emerging economies
- Further diversification of powertrains and weight reduction in the mobility domain

Results from Previous Medium-Term Management Plan

- Increased capacity in Spain: Up 40,000 tonnes
- Expanded compounding facilities: Established new facilities in Spain, acquired Repol S.L., started up facilities in North America

Strategies of Current Medium-Term Management Plan

- Expand scale of the business by further increasing the polymerizing capacity
- Expand compounding facilities outside of Japan and shift to high added-value products and technologies

Future Vision

Solution provider boasting industry-leading presence and reliability



New nylon plant in Spain



Chemicals Company: Caprolactam and Industrial Chemicals Strategy

UBE

- Pursue comprehensive cost reductions and revenue improvements that contribute to raising nylon chain competitiveness

Business conditions

- Companies have stopped building further caprolactam manufacturing capacity in China, but the supply and demand situation has eased due to the slowdown of the Chinese economy
- Business conditions for industrial chemicals continue to be favorable due to strong demand

Results from Previous Medium-Term Management Plan

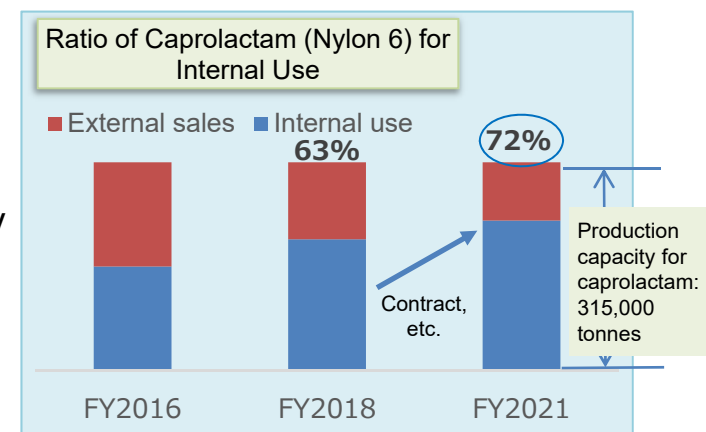
Made progress with cost reductions (liquid ammonia, caprolactam, ammonium sulfate)

Strategies of Current Medium-Term Management Plan

- Caprolactam
Reduce costs and improve revenues: Maximize benefits from cost reductions as a result of adopting phenol-based manufacturing facilities for cyclohexanone, and increase added value of ammonium sulfate
- Industrial chemicals
Maximize profits as a remaining player in the sector: Establish position as an industry leader for ammonia-related products (liquid ammonia, nitric acid, etc.) in Japan

Future Vision

Establish a structure that generates stable revenues as a platform for the UBE Group's value chain



*Achieve target for internal consumption of caprolactam during current medium-term management plan



Chemicals Company: Fine Chemicals Strategy



- Increase revenue generation by accelerating global business development

Business Conditions

- High-purity dimethyl carbonate (DMC): Steady growth for lithium-ion battery (LIB) applications
- 1,6-hexanediol: Growth in demand due to increased polycarbonate diol (PCD) demand

Results from Previous Medium-Term Management Plan

- Established joint venture for high-purity DMC in China and launched operations
- Ube Chemical Factory restarted production of 1,6-hexanediol by switching to a different raw material

Strategies of Current Medium-Term Management Plan

- Establish manufacturing facilities for C1 chemicals chain in North America
- Establish a business model that generates ordinary profits by investing in C1 technology (dimethyl oxalate (DMO), monoethylene glycol (MEG)) licensees
- Pursue alliances in diol business

Future Vision

Develop the international business by establishing new companies and through joint ventures



Chemicals Company: High-Performance Coating Strategy



■ Actively develop the global business and accelerate applications development

Business Conditions

Demand for environmental coatings has materialized due to tighter chemicals regulations

→ Growth in market for water-based and solventless polyurethane coatings

Results from Previous Medium-Term Management Plan

Drive market growth with customers, as the leading global supplier of PCD

Strategies of Current Medium-Term Management Plan

- Polycarbonate diol (PCD): Accelerate global business development and increase sales
 - Construct second production line for PCD in Thailand and further ensure the top share in the Asian market
 - Increase sales with a view toward establishing manufacturing facilities in the U.S. by capturing volume business in North and Central America and developing new applications and new specialty markets
- Polyurethane dispersion (PUD): Develop the business in the Asian market, beyond niche markets in Japan
 - Strengthen the formulation engineering by collaborating with acrylic and additive manufacturers, and accelerate the market development



Example of PCD applications:
Synthetic leather

Future Vision

Supply a broad range of solutions in global markets and develop the high-performance coatings business into a driver of the UBE Group's chemicals business



Chemicals Company: Synthetic Rubber Strategy



- Enhance collaboration with strategic customers: Create customer value through value-added products

Business Conditions

Steady annual growth of around 3% for both tire and butadiene rubber (BR) demand

Results from Previous Medium-Term Management Plan

Establish a framework for increasing sales by efficiently operating the four manufacturing facilities in Asia (start up production at Malaysia plant and shift to full production)

Strategies of Current Medium-Term Management Plan

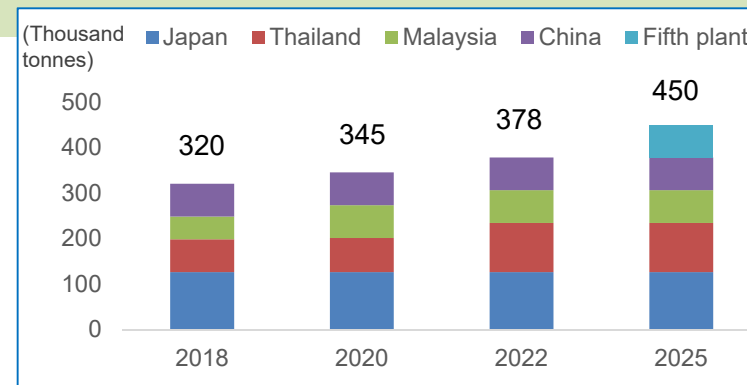
Increase added value products: Japan plant 75%, Thailand plant 60%, Malaysia plant 60%

- Develop new grades: Conduct joint development with strategic customers (major tire manufacturers), expand the lineup of VCR products, develop BR with better wear resistance, develop BR with better processability
- Develop new catalyst BR: Aim for dominant performance advantage
- Multipurpose, medium-scale test plant: Speed up development efforts

Increase production capacity to meet customer growth

- Expand production at the Malaysia plant (from 50,000 to 72,000 tonnes by October 2020)
- Expand capacity at the Thai plant (debottlenecking by October 2020 and increase capacity)
- Study fifth plant (Atlantic Rim region)

Future Vision



BR business that ranks No. 1 globally for customer satisfaction



- Continue to expand and stabilize revenues as an active growth business, and change the business structure

Business Conditions

- Market for varnishes for flexible displays gaining significant momentum in China
- Strong demand for chip-on-film (COF) for 4K and 8K displays
- Growth in markets for flexible printed circuit (FPC) substrates for smartphones in China, and on-board FPC substrates for vehicles

Results from Previous Medium-Term Management Plan

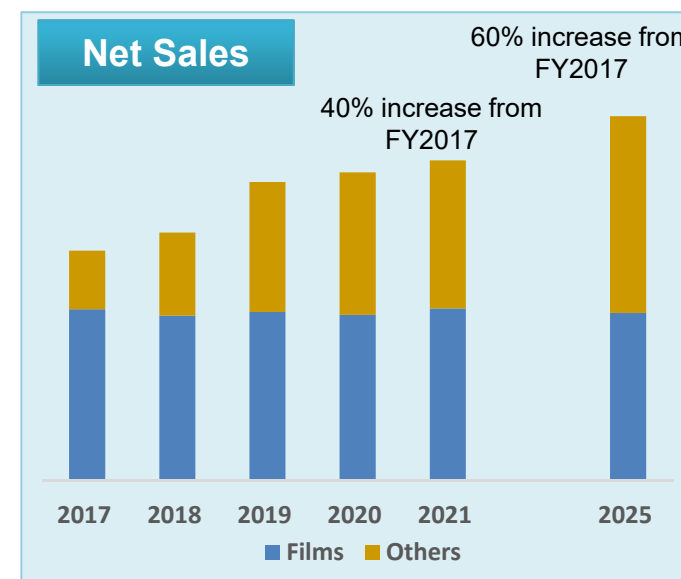
- Business restructured by reducing costs and increasing sales
- Started shipping significant volumes of varnishes for flexible OLEDs

Strategies of Current Medium-Term Management Plan

- Develop varnishes into a core product in addition to films
- Increase sales for displays, solar cells, and composite release liners, in addition to the market for electronic circuit substrates
- Increase production capacity and implement cost reductions: Increase production through debottlenecking of biphenyl tetracarboxylic dianhydride (BPDA), and start up a production line for films (FY2019)

Future Vision

Establish a business structure as an active growth business that generates steady profits by expanding the fields of application and markets





Chemicals Company: Separation Membrane Strategy



- Strengthen the business platform for nitrogen membranes, and focus on developing markets in the mobility and environment/energy domains by leveraging new nitrogen explosion-proofing solutions and dehumidifying membrane modules

Business Conditions

- Market for nitrogen explosion-proofing applications also recovering, due to recovery in crude oil prices
- Stable growth in railway and aircraft markets
- Growth in environmental/energy market
(Biogas: Growth in methane concentration applications in North America and Europe)
(Bioalcohol application in North America: Upgrade and increase capacity of 10-year old facilities)

Results from Previous Medium-Term Management Plan

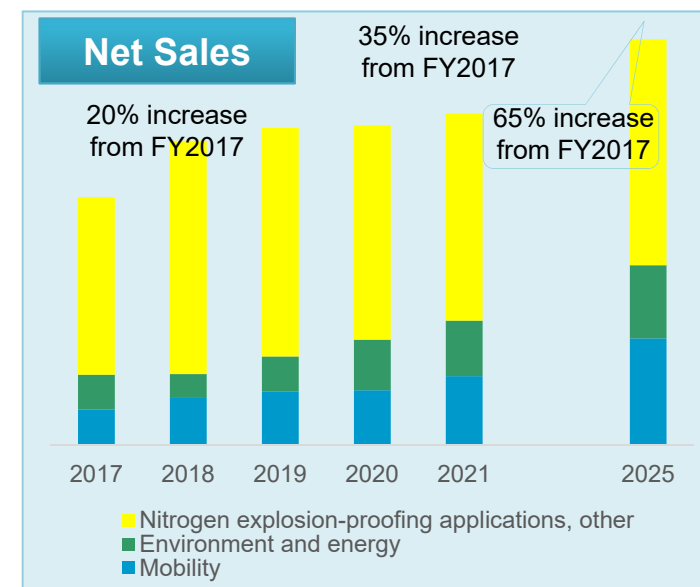
- Adopted in actual aircraft in addition to railway brakes, and adoption picked up for bioalcohol application in North America

Strategies of Current Medium-Term Management Plan

- Nitrogen explosion-proofing applications: Increase competitiveness by strengthening sales offices
- Mobility: Increase adoption for aircraft and railway
- Environment/energy: Increase sales in biogas and bioalcohol markets
- Development related: Development of new high-performance membranes and low-cost membranes

Future Vision

Introduce new products to markets by fiscal 2021 focusing on mobility and environment/energy domains and develop them into future pillars for revenue growth



Membrane Type	Main Applications
Nitrogen	Explosion-proofing (aircraft, oil wells, etc.)
Dehumidifying	Railway, instrumentation
Decarbonation	Biogas
Hydrogen, etc.	Recovery and purification of hydrogen, etc.



Chemicals Company: Separator Strategy

UBE

- Ube Maxell Co., Ltd. started integrated management of the non-coated and coated separators business as of January 1, 2019. Currently working to steadily expand the business focusing on vehicle applications, by continuously increasing the production capacity

Advantages for automotive applications

- Safety:
Low shrinkage in transverse direction, low-temperature shutdown
- High-rate performance Instantaneous power, rapid charge/discharge
- Stable performance for square and pouch batteries

Growth of dry separators

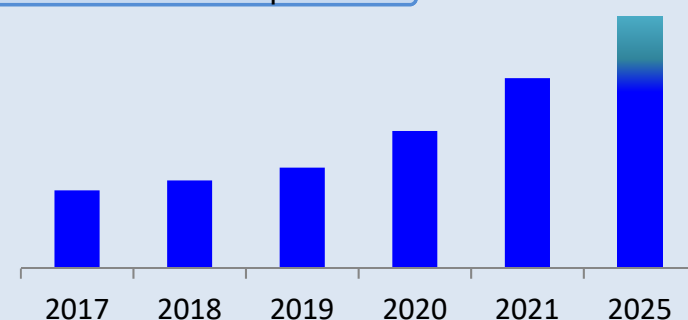
● Further enhance competitiveness

- Improve productivity and expand capacity by adopting new processes
 - New facilities began operation in spring of 2018
 - Scheduled to start up new facilities in FY2020
→ Increase total capacity to 320 million m²/year
- Increase efficiencies through integrated management of non-coated and coated separators business

Markets and strategies

Growth of automotive market (strong demand from large projects incorporating UBE's products)

Net Sales from Separators



Previous Medium-Term Management Plan

- Raised cost competitiveness by adopting new processes (strengthened revenues)

Current Medium-Term Management Plan

- Expand both non-coated and coated separators businesses
- Actively capture business with strong future promise

Future Vision

- Maintain status as No. 1 company for vehicle applications (based on number of vehicles)
- Further expand business



Chemicals Company: Electrolyte Strategy

UBE

- Increase the business presence for large battery applications such as vehicle batteries and storage batteries

Business Conditions

- Although the market has expanded due to growth of vehicle applications, there is a sense of excess supply capacity globally and business continues to be fiercely competitive
- Increasingly sophisticated demands on electrolytes in terms of battery performance (capacity, output, life, durability, etc.) and safety

Results from Previous Medium-Term Management Plan

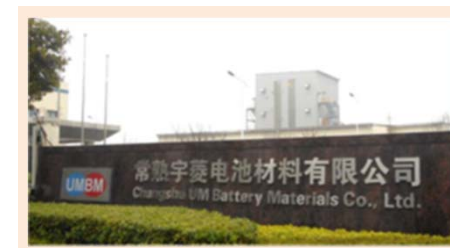
- Launched joint venture business with Mitsubishi Chemical in China (January 2018)
- Joint venture recorded revenue improvements benefitting from the merger

Strategies of Current Medium-Term Management Plan

- Develop proprietary additives for vehicle and storage battery applications, and supply products that advance the performance of batteries
- Further strengthen the technical development capabilities and cost competitiveness
- Effectively utilize intellectual property rights

Future Vision

Enhance revenue generation by further intensifying UBE's technical capabilities and the collaborative framework with Mitsubishi Chemical



Chinese joint venture (UBE owns 50% stake) with Mitsubishi Chemical



Chemicals Company: LTO and Tyranno Fiber Strategy

UBE

- Commercialize anode materials and LTO that realize high input/output, excellent safety, and long life of LIBs

Business Conditions

- Lithium-titanate batteries are becoming known and have started to establish a market presence in applications that are suited to their characteristics, such as mild hybrid vehicles, storage batteries, transport robots, and railway applications

Strategies of Current Medium-Term Management Plan

- Solidify the customer base needed for commercialization, and promote and execute facilities planning

Future Vision

Capture large market share for lithium-titanate batteries / Conduct evaluation of anode materials for solid-state batteries for future businesses

LTO



- Develop fibers for ceramic matrix composites (CMCs) used in civil aircraft engine components and materials, and develop mass production technologies for them

Business Conditions

- Projecting stable growth of approx. 5% for aerospace industry
- Active adoption of silicon carbide (SiC) fiber-reinforced SiC matrix composites (CMCs) for aircraft engine components and materials

Strategies of Current Medium-Term Management Plan

- Develop fibers for CMCs used in civil aircraft engine components and materials, and develop mass production technologies for them
 - Refine the production technologies, finalize the materials specifications for specialty fibers in accordance with the product applications, and acquire materials certifications

Future Vision

Tyranno Fibers chosen for use in aircraft engines, and a stable business foundation established

Tyranno Fiber





- Strengthen the drug discovery pipeline and establish a production framework that meets market needs

Business Conditions

- Global pharmaceuticals market continues to grow at an annual rate of around 5%
- Shift in drug discovery from lifestyle diseases to rare diseases and unmet medical needs
- Active pharmaceutical ingredient (API) needs are shifting toward small quantity, high-potency APIs with the shift in drug discovery targets and growth of the market for anti-cancer agents

Results from Previous Medium-Term Management Plan

- Brought glaucoma treatment agent to market and licensed fibrosis treatment agent
- Expanded supply chains to achieve manufacturing cost reductions and flexible and adaptable plant operations (tie-ups and collaborations with manufacturers of APIs and intermediates outside of Japan)



Four proprietary drugs

Strategies of Current Medium-Term Management Plan

- Expand the scope of basic research, and accelerate and increase the efficiency of the search cycle through computational chemistry
- Shift to a group of manufacturing facilities that support small quantity, high-potency APIs
- Commercialize contract API manufacturing for nucleic acid drugs, which is an emerging new market

Future Vision

Provide a stable supply of UBE's three proprietary drugs to the market and stabilize the drug discovery business

Accelerate incoming orders for contract manufacturing of new drugs, through groups of manufacturing facilities that support small quantity, high-potency APIs and dynamic supply chains



Results from Previous Medium-Term Management Plan

■ Maintained and enhanced revenues from platform businesses

● Initiatives for cost reductions, streamlined production, and increased waste use

Implemented first refurbishment at Ube Factory of Ube Material Industries, Ltd. (FY2016–FY2018)

Isa: Constructed fourth waste plastics processing facilities in FY2017 (Started operation in FY2018)

Isa: Began constructing exhaust heat recovery power plant in FY2017 (Start operation in FY2019)

Developed Kanayama mining zone (Started mining in FY2018)



Exhaust heat recovery power plant

● Business restructuring and integration

Transferred the resources business to Ube Material Industries (April 2016)

Made Ube Shipping & Logistics, Ltd. and Hagimori Industries, Ltd. into wholly-owned subsidiaries (August 2017)

Merged construction materials business with Ube Kenzai Corporation (April 2018)

■ Expanded and extended growth strategies

● Expansion of the business scope and domains

Established joint venture for coastal shipping business in Indonesia (FY2016)

Acquired stake in Tokyo Cement Company (Sri Lanka) PLC (FY2016–2017)

Launched the waste gypsum board recycling business in FY2017

Began constructing MOS-HIGE plant in Thailand in April 2018 (Start operation in FY2020)



Isa limestone mine



Future Vision

- Continue to supply products that offer value for social infrastructure

Basic Strategy for Realizing the Vision

1. Strengthen and expand the businesses

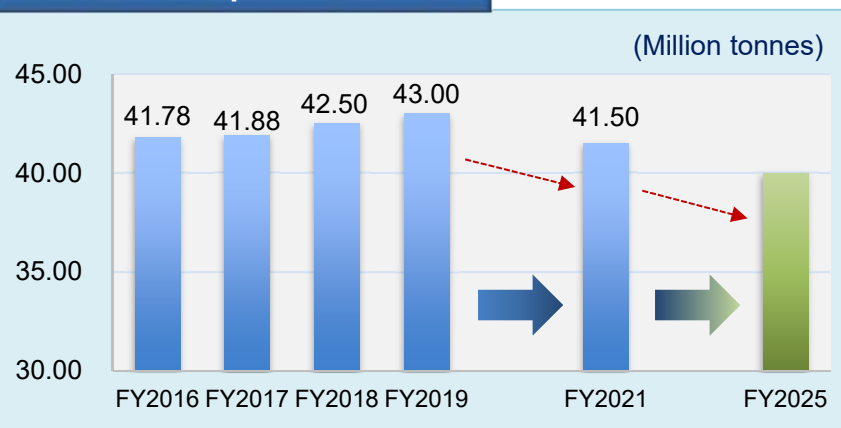
- Increase revenue generation from **cement and ready-mix concrete business, magnesia and calcia business, and energy business**
 - Address adverse business conditions such as declining cement demand in Japan and rising thermal energy costs, by implementing energy conservation measures, reducing costs, establishing a stable shipping framework, and adjusting prices
- Position the **biomass and recycling businesses** as active growth businesses and accelerate their growth, and develop the **fine chemicals business**

2. Pursue Group synergies

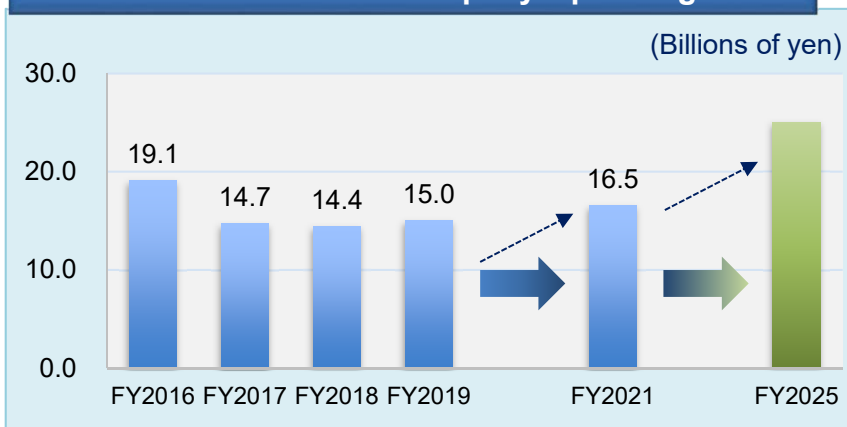
- Continue to strengthen collaborations with Group companies and pursue new synergies with the integrated energy business

Business Conditions

Demand in Japan for Cement



Construction Materials Company Operating Profit





Strategies of Current Medium-Term Management Plan

1. Strengthen and expand the businesses

- **Cement and ready-mixed concrete**

Continue adjusting prices

Implement energy conservation measures, reduce costs → Deploy high-efficiency facilities, increase waste use as alternative fuel

- **Magnesia and calcia**

Realize stable operations and shift to high added-value products → Refurbish the second production line at the Ube Factory

- **Energy**

Realize the stable supply of competitive energy → Implement environmental measures, address aging facilities, increase efficiency

- **Biomass, recycling, fine materials**

Increase biomass fuel use at independent power produce (IPP) facilities, study manufacturing of torrefied pellets outside of Japan

Create new recycling businesses, increase sales of environmental materials

Increase production capacity for MOS-HIGE (outside of Japan)

→ Shift to full production at fourth production line in Thailand

2. Pursue Group synergies

Increase and optimize waste and biomass use

Effectively leverage human resources and energize the human resources development



Torrefied pellets



Machinery Company: Business Plan



- Benefit customers by supplying products and services with brand appeal

With a focus on **mobility, global business development, and environmental equipment**, the Machinery Company will aim to **increase profits** and **continue expanding the servicing business**

- **Develop products that anticipate market needs and optimize the production framework**

Molding machines

- Die casting machines and extrusion presses: Develop products that meet **needs for vehicle weight reduction**, and develop markets
- Injection molding machines: Realize **unified global management of the business** in accordance with merger, and strengthen efforts to increase sales outside of Japan

Industrial machines

Enter new markets for **environmentally friendly machinery and resource recycling**

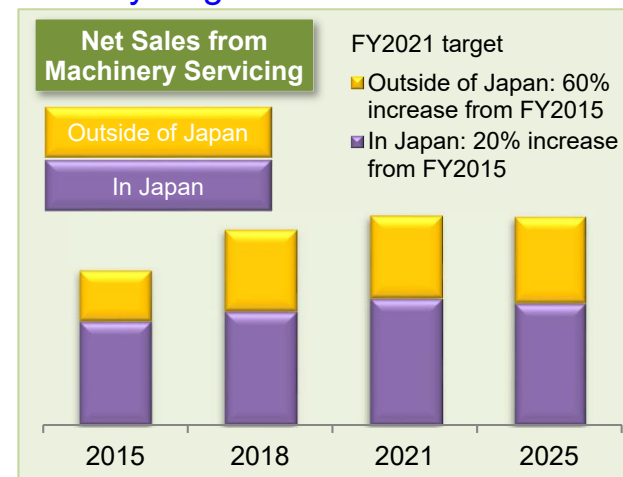
Steel products

Establish optimized production framework and expand recycling business for industrial waste

- **Expand machinery servicing business by proposing innovative solutions**

Further strengthen the servicing and support capabilities of servicing offices outside of Japan

- Integrate and expand servicing offices
- Develop and increase the number of servicing personnel outside of Japan, and expand the inventory of products





Machinery Company: Molding Machine Strategy

UBE

Business Conditions

- **The automotive market** is projected to see stable growth over the medium and long term despite the current slowdown due to **U.S.-China trade friction**, as newly emerging economies such as India begin to occupy an important position alongside China and North America.
- The shift to next-generation vehicles is accelerating, which means the **need for vehicle weight reduction** will keep growing

Results from Previous Medium-Term Management Plan

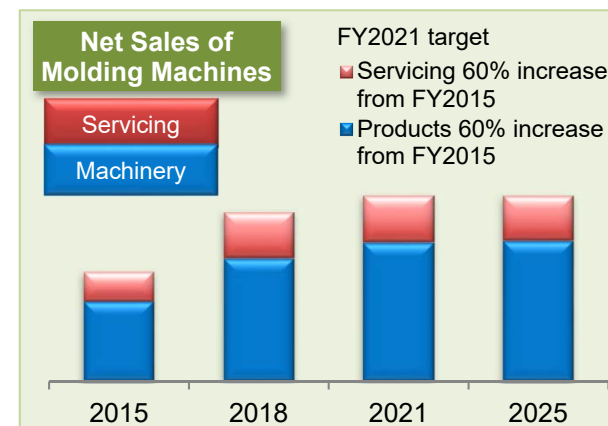
- **Increased business scale and expanded servicing business**
(Merged the injection molding machine business with that of Mitsubishi Heavy Industries, expanded the assembly facility in the U.S., and integrated and expanded the servicing offices, etc.)

Strategies of Current Medium-Term Management Plan

- Die casting machines and extrusion presses: Increase profits by **developing products** that meet needs for vehicle weight reduction and **developing markets**
- Injection molding machines: Secure stable revenues by **unified global management** of sales, engineering, manufacturing, and servicing, and **increased sales outside of Japan**
- Machinery servicing: Continue to increase revenues by integrating and expanding the global servicing network
- All businesses: **Increase productivity** to support growth in the scale of the businesses (reduce lead times, establish a globally optimized framework for production, utilize ICT, etc.)

Future Vision

- **Die casting machines and extrusion presses:**
Establish a position as the leading manufacturer in Japan, and become a global brand
- **Injection molding machines:**
Become one of the top five global companies for the large injection molding machine market





Machinery Company: Industrial Machine and Steel Product Strategy

UBE

Business Conditions

- Although **no significant growth is projected either in or outside of Japan for existing infrastructure-related markets** (such as for electricity, cement, and steel products), the global shift to a low-carbon society will increase demand for **environmentally friendly equipment**

Results from Previous Medium-Term Management Plan

- Secured order volumes for electricity projects that comprise the base load of the business, and expanded the machinery servicing business
(Have already secured orders for electricity projects in Japan that amount to roughly 40% of the net sales target from the medium-term management plan)

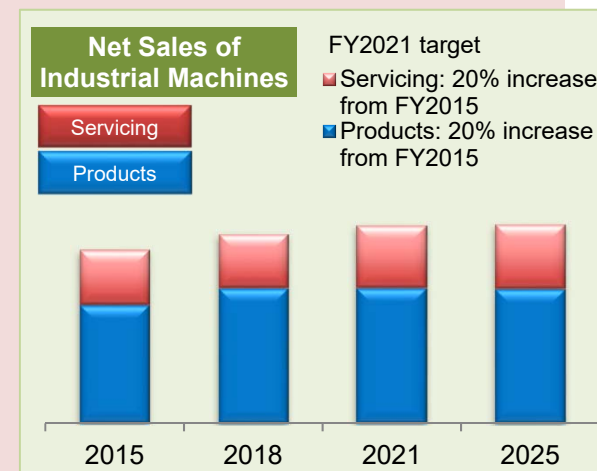
Strategies of Current Medium-Term Management Plan

- Focus on **processes and cost management** for electricity projects to secure profits
- Create new revenue sources by **developing environmentally friendly equipment and resource recycling equipment**
- Machinery servicing: Increase revenues by strengthening the servicing and support capabilities outside of Japan

Future Vision

- Leverage environmentally friendly machinery for a low-carbon society and UBE's technology strengths to record stable revenues**
- Steadily increase revenues by realizing growth in servicing and support activities outside of Japan and servicing and support for machinery from other companies**

Industrial machines



Business conditions

- Competition is intensifying** in the electric furnace sector due to industry restructuring in Japan and increased electric steel production in China

Strategies of Current Medium-Term Management Plan

- Build an optimized framework for production and improve revenues by pursuing the best product mix

Future Vision

- As a planet-friendly resource recycling business, supply high added-value through specialty and high-grade products**

Steel products



Shareholder Returns

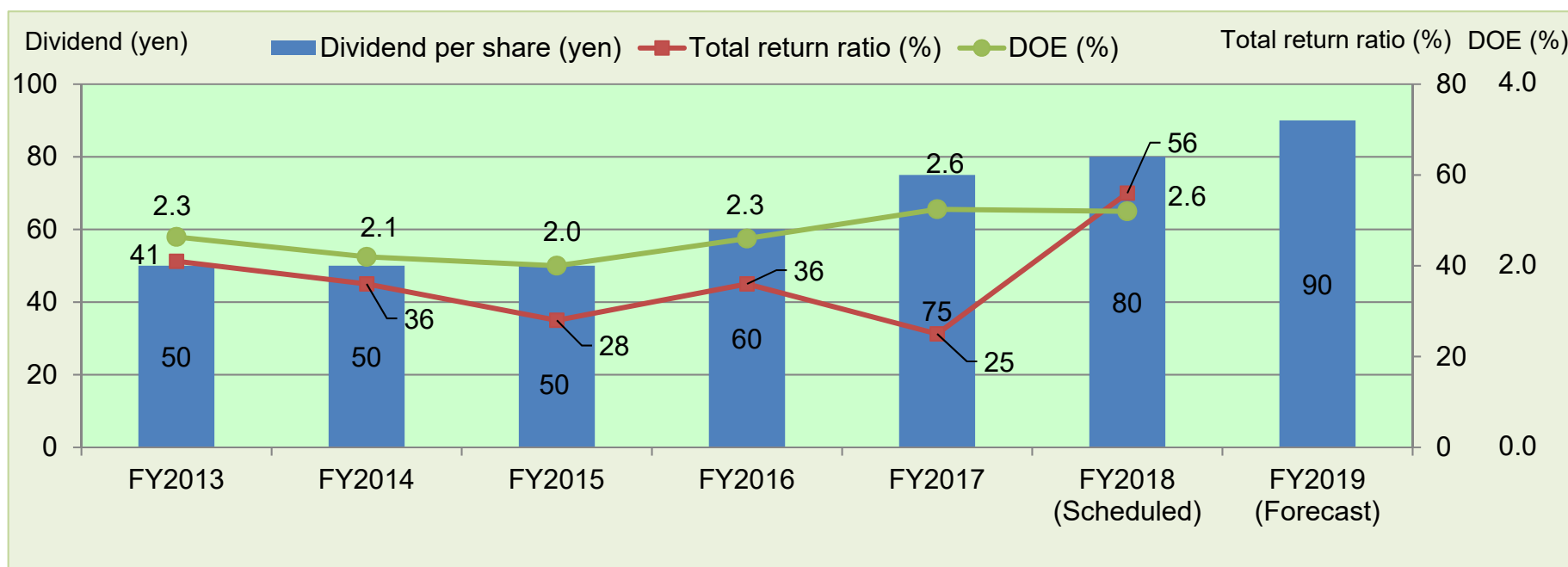
UBE

- ◆ Emphasis on dividend on equity (DOE) ratio and consolidated total return ratio (including purchase of treasury stock)
- ◆ In accordance with the equity and cash flow situation, actively pursue growth investments and further increase shareholder dividends in the future



Dividend on equity (DOE) 2.5% or higher

Consolidated total return ratio 30% or higher (average over three years)



Note: Ube Industries conducted a consolidation of shares by consolidating every 10 shares into one share effective October 1, 2017. Dividends per share for FY2016 and earlier have been converted based on the shares after the share consolidation.



The forecasts contained in this presentation are based on certain assumptions judged to be reasonable by the Company when preparing this report. Actual results can vary significantly from forecasts, due to changes in a wide range of conditions. These conditions can include the economic status of major markets, demand and supply of products, prices for raw materials and fuel, interest and foreign exchange rates, and other prevailing conditions that can impact the business results of the Company. ©2020 Ube Industries, Ltd. All Rights Reserved. Duplication or reuse of any of part of this document is expressly forbidden without the written consent of Ube Industries.





Net Sales and Operating Profits for Five Segments (Reference)



(Billions of yen)

Segment	Net sales			Operating profit		
	FY2018 Results	FY2019 Targets	YOY	FY2018 Results	FY2019 Targets	YOY
Chemicals	314.9	333.0	18.1	23.7	25.5	1.8
Pharmaceuticals	10.1	12.0	1.9	0.8	1.0	0.2
Construction Materials	250.2	250.0	(0.2)	11.8	12.0	0.2
Machinery	97.2	100.0	2.8	5.4	6.0	0.6
Energy & Environment	75.8	80.0	4.2	2.5	3.0	0.5
Others	4.9	5.0	0.1	0.8	0.7	(0.1)
Adjustment*	(23.2)	(20.0)	3.2	(0.7)	(1.2)	(0.5)
Total	730.1	760.0	29.9	44.5	47.0	2.5

✓ FY2019 assumptions (business factors):
 Exchange rate at ¥110/USD
 Naphtha at US\$570/tonne (CIF)
 Australian coal at US\$125/tonne (CIF)

*Includes elimination of inter-segment transactions