

# **Change & Challenge 2018**

## **Management Overview Briefing**

**June 7, 2018**

**Ube Industries, Ltd.**

**Yuzuru Yamamoto, President and CEO**

# Agenda

**I**

**FY2017 Business Results and FY2018 Forecast**

**II**

**Progress on the Change & Challenge 2018  
Medium-Term Management Plan**

I

# **FY2017 Business Results and FY2018 Forecast**

## ■ Year-on-Year

- Revenues increased mainly due to revised prices for chemicals based on strong demand and rising prices for raw materials and fuel
- Profits were down from the Cement & Construction Materials and Energy & Environment segments, which were impacted by rising coal prices. However, operating profit increased overall, supported by improved spreads for chemicals, increased sales of specialty products, and the absence of scheduled maintenance for ammonia manufacturing facilities.
- All-time highs for ordinary profit and net income

## ■ Versus Forecast

- Net sales targets were largely achieved overall due to strong sales from the ready-mix concrete business, despite market conditions for chemicals deteriorating more than expected
- Exceeded the operating profit target, due to increased spreads for caprolactam and synthetic rubber and increased sales of polyimides

## ■ Main Strategies Implemented in FY2016

- Capacity increases: Production expansion for nylon completed in February, adding 40,000 tonnes of capacity (Spain)  
Production expansion for separators completed in June, adding 200 million square meters of capacity with further expansion planned (Sakai)
- Strengthened business through alliances: New Chinese JV for electrolyte business launched in January 2018
- Strengthened cost competitiveness: Started operating phenol-based production method for cyclohexanone, completed construction of facilities for manufacturing large-grain ammonium sulfate (Ube)  
Started construction of exhaust heat recovery system, scheduled to begin operating in FY2019 (Isa)

		FY2016	FY2017	YOY
Key Figures	Operating profit	¥34.9 billion	¥50.2 billion	¥15.2 billion
	Ordinary profit	¥33.3 billion	¥50.7 billion	¥17.3 billion
Key Indicators	Return on sales (ROS)	5.7%	7.2%	1.5%
	Return on equity (ROE)	8.7%	10.5%	1.8%



- Net sales are projected to increase year-on-year (YOY) due to increased sales of chemicals and pricing revisions for cement and construction materials. Operating profits are projected to decrease YOY as spreads for chemicals are projected to stabilize while coal prices are expected to remain high.
- Compared with the medium-term management plan, the net sales target will be mostly achieved, while operating profits and ordinary profits are projected to fall short of targets, mainly due to rising coal prices.

## Key Figures

(Billion yen)

Item	FY2016 (Results)	FY2017 (Results)	FY2018 (Forecast)	FY2018 (Original plan)
Net sales	616.5	695.5	740.0	750.0
Operating profit	34.9	50.2	44.0	50.0
Ordinary profit	33.3	50.7	45.5	49.0
Profit attributable to owners of parent	24.1	31.6	30.5	29.0

## Key Indicators

(%)

Return on sales (ROS)	5.7	7.2	5.9	6.5 or above
Return on equity (ROE)	8.7	10.5	9.4	9.0 or above

# FY2018 Net Sales and Operating Profit: Progress by Segment



- Net sales are projected to increase YOY in most segments, while operating profits in the Chemicals segment are projected to decrease YOY due to the stabilization of temporarily increased spreads
- Compared with the medium-term management plan, the net sales target will be achieved in all segments except Chemicals, while operating profits and ordinary profits are projected to fall short of targets in Cement & Construction Materials due to rising coal prices.

(Billion yen)

Segment	Net sales				Operating profit			
	FY2016 (Results)	FY2017 (Results)	FY2018 (Forecast)	FY2018 (Original Plan)	FY2016 (Results)	FY2017 (Results)	FY2018 (Forecast)	FY2018 (Original Plan)
Chemicals	258.3	305.4	320.0	345.0	9.6	28.9	22.5	20.0
Pharmaceuticals	10.9	10.2	10.0	9.0	2.4	2.1	0.5	0.5
Cement & Construction Materials	227.2	238.8	250.0	250.0	16.2	12.3	12.5	20.0
Machinery	71.6	90.1	100.0	83.0	3.6	5.5	6.0	6.5
Energy & Environment	59.7	71.3	80.0	73.0	2.8	2.3	2.5	3.5
Others	12.5	4.7	5.0	18.0	0.7	0.8	1.0	1.0
Adjustment	(23.9)	(25.2)	(25.0)	(28.0)	(0.7)	(1.9)	(1.0)	(1.5)
Total	616.5	695.5	740.0	750.0	34.9	50.2	44.0	50.0

## II

# **Progress on the Change & Challenge 2018 Medium-Term Management Plan**

## ■ Management Policy

### Business Principles

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

### What we want to become in 10 years (around 2025)

“An enterprise that continues to create value for customers”

The UBE Group will have a positive social impact as a corporate entity having a presence in expanding business domains by developing products and services that anticipate market needs

## ■ Medium-Term Management Plan: Management Strategies

### Strengthen the business foundation to enable sustainable growth

“Strong focus on profitability,” “implement investments to achieve growth and make certain to generate results from investments,” and “restore results from the Chemicals segment”

### Address and be part of the solution for resource, energy, and global environmental issues

“Reduce greenhouse gas emissions” and “expand businesses that help reduce environmental impact”



- No change in the positioning of businesses in the portfolio, but the polyimide and electrolyte businesses have been restructured

Target business domains: Environment and energy, mobility, construction and infrastructure, healthcare

	Chemicals and Pharmaceuticals	Cement and Construction Materials	Machinery	Energy and Environment
Developing Fields	New battery materials, specialty inorganic materials (phosphor, optical materials, etc.), biomass fuel, aeronautical fields (Tyranno fiber), environmental materials (neutral solidification material, heavy metal immobilizer, etc.), biomaterials			
Active Growth Businesses	Nylon, synthetic rubber, separators, high-performance coatings, Pharmaceuticals	Fine materials (MOS-HIGE, etc.)	Machinery servicing	
Platform Businesses	Caprolactam and industrial chemicals, fine chemicals, separation membranes, ceramics	Cement and ready-mixed concrete, calcia and magnesia, recycling	Molding machinery, industrial machinery, steel products	Coal, power
Restructuring Businesses	Polyimide, electrolytes			

Growth from restructuring

Developing Fields: UBE will promote growth in these fields to turn them into future sources of income.

Active Growth Businesses: Market expansion is expected and UBE will pursue further growth in its fields of strength.

Platform Businesses: UBE will aim to maintain and expand stable income.

Restructuring Businesses: UBE will revamp the business models and undertake business restructuring.

- Expand existing and peripheral businesses and foster new businesses in the four target business domains

## Environment and energy

(resource and energy conservation, new materials)

Battery materials

Coal

Power

Recycling

New battery materials

Biomass fuel

Phosphors

Optical materials

## Mobility

(automotive, rail, aeronautical fields)

Nylon

High-performance coatings

Battery materials

Synthetic rubber

Separation membranes

Molding machinery

Fine materials

Tyranno fiber

New battery materials

## Construction and infrastructure

(infrastructure, living environment, smart cities)

Ceramics

High-performance coatings

Separation membranes

Cement and ready-mixed concrete

Calcium and magnesia

Industrial machinery  
Steel products

Neutral solidification material

Heavy metal immobilizer

## Healthcare

(foods, pharmaceuticals, lifestyle enhancement)

Pharmaceuticals

Industrial chemicals

Fine chemicals

Nylon

Biomaterials

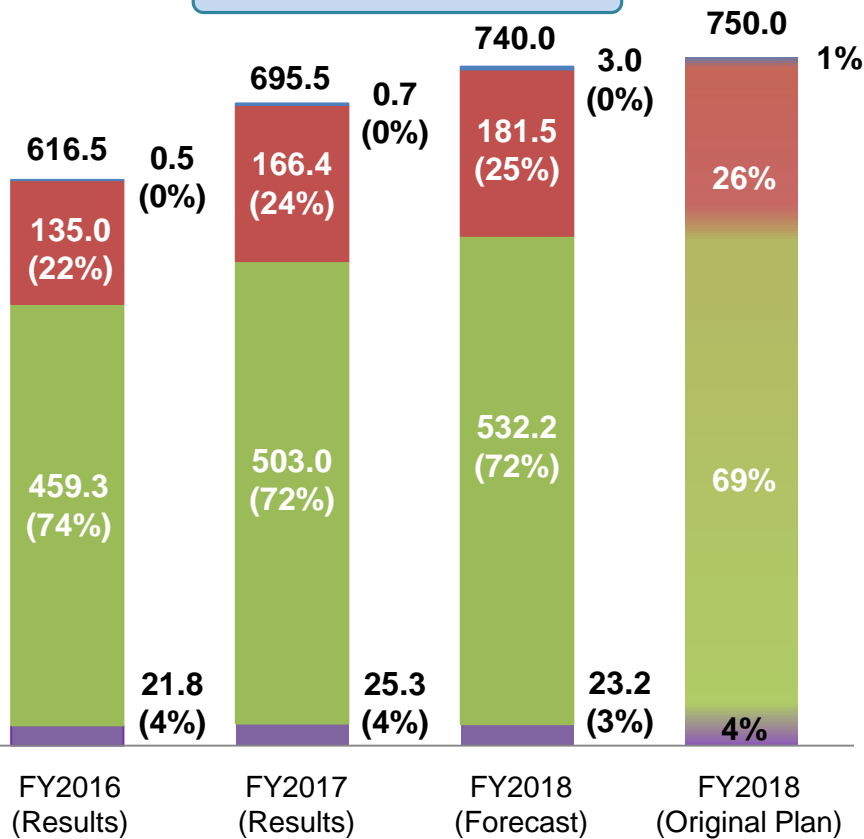
# Net Sales and Operating Profit: Progress by Business Portfolio Categorization



**Net sales:** Increased revenues in both FY2017 and FY2018 due to rising selling prices in platform businesses and increased sales from active growth businesses

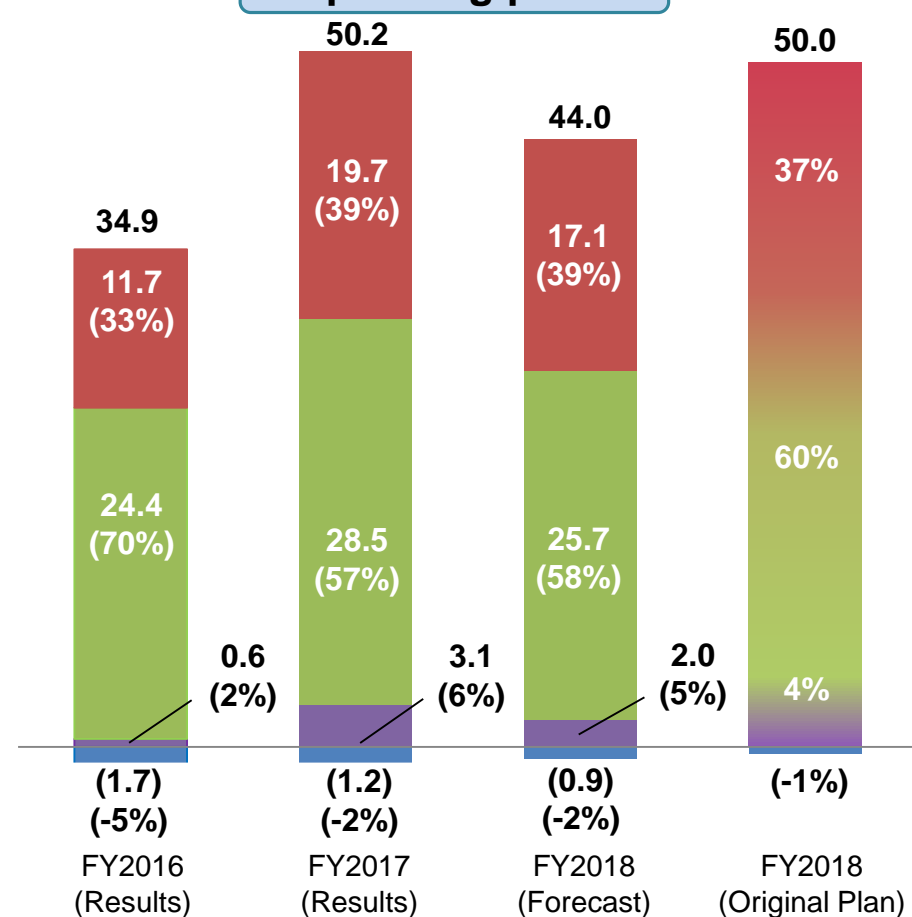
**Operating profit:** In FY2017, there was growth in platform businesses and active growth businesses due to increased spreads for chemicals. In FY2018, profits from both platform businesses and active growth businesses are projected to decrease due to the stabilization of spreads for chemical products.

## Net sales



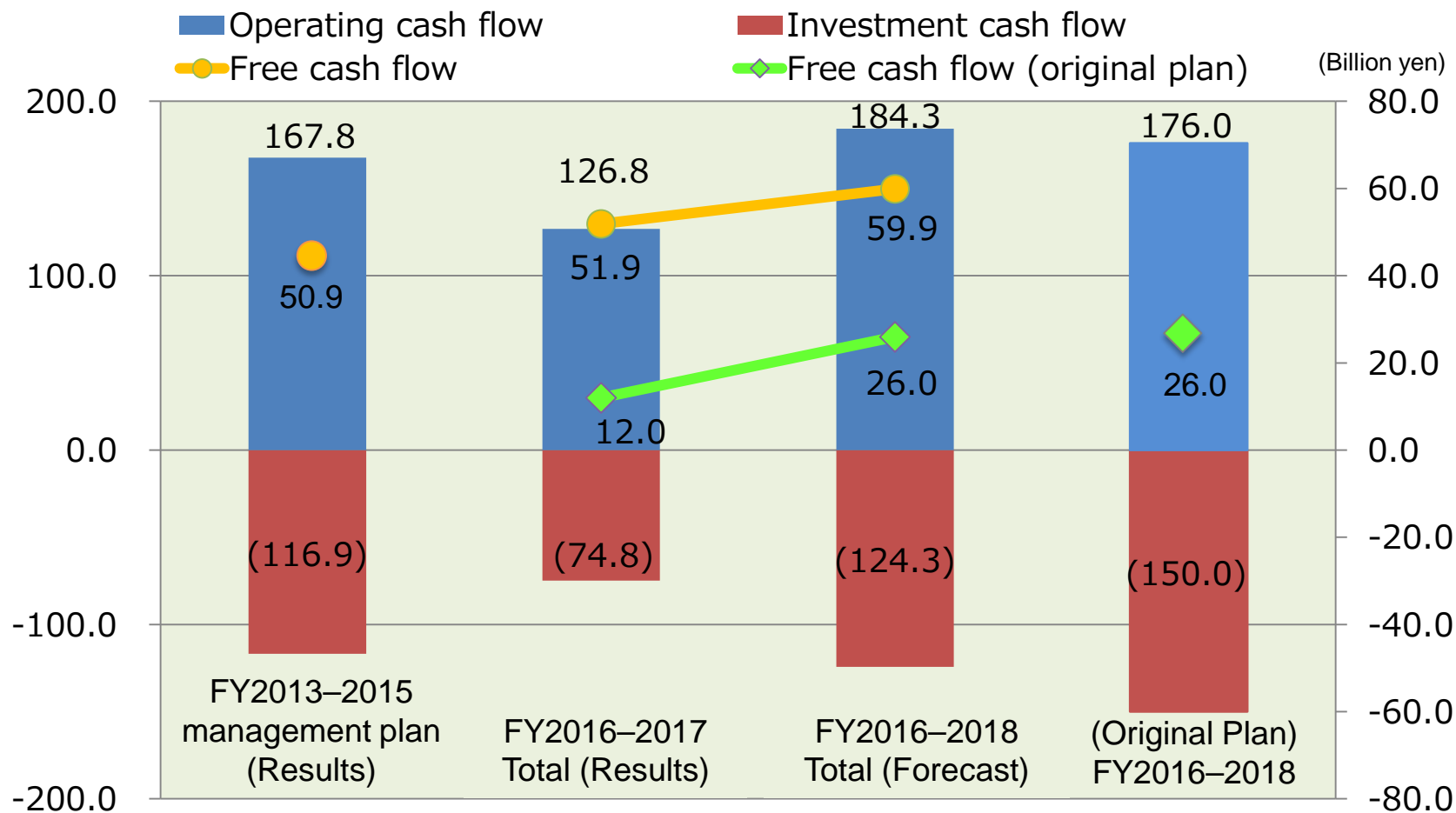
## Operating profit

(Billion yen)



- Total cash flow over three years is projected to increase by more than double the original plan, due to increases in operating cash flow and as a result of revising investments to reflect changing conditions

→ Take flexible approach to considering cash use





# **Business Strategy by Segment (Changing Conditions, Implementation Status and Future Outlook)**

## ■ Current business strategies: Achieve a full recovery for the Chemicals segment and create growth-driving products

- Active Growth Businesses (Priority implementation of capital investment, make certain to generate results)
  - Synthetic rubber:** Strengthen collaboration with production facilities outside of Japan, create value through quality differentiation and specialization
  - Nylon:** Maximize benefits derived from increased capacity in Spain
  - Separators:** Maximize revenue generation from increased capacity at Sakai Factory
  - High-performance coatings:** Accelerate global business development, explore solution-oriented sales approach and development business models
- Restructuring Businesses (Rapidly emerge from restructuring and contribute to increased revenues)
  - Polyimides:** Increase revenues in the films and varnish business by improving the technologies for stable production
  - Electrolytes:** Rapidly realize increased revenues as a resulting merging the business in China with Mitsubishi Chemical Corporation
- Business Restructuring (Shift from general purpose products to products and services that incorporate added value unique to UBE)

## ■ Progress

- FY2017: Significantly exceeded the target with operating profit of ¥28.9 billion, supported by favorable external conditions
- FY2018: Operating profits projected to decrease YOY in the absence of temporary revenue-increasing factors. Aim to generate operating profits in excess of the ¥20.0 billion target in the last fiscal year of the medium-term management plan, by making certain to get results from major capital investments.

## ■ Issue

- Fundamentally improve the framework for quality assurance, and strengthen risk management and internal controls
- Meet strong demand, secure stable production, and minimize avoidable losses
- Strengthen business infrastructure by actively using ICT and developing human resources

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

**Increase Added-Value Products:** Chiba 75%, TSL (Thailand) 60%, LUSR (Malaysia) 60%

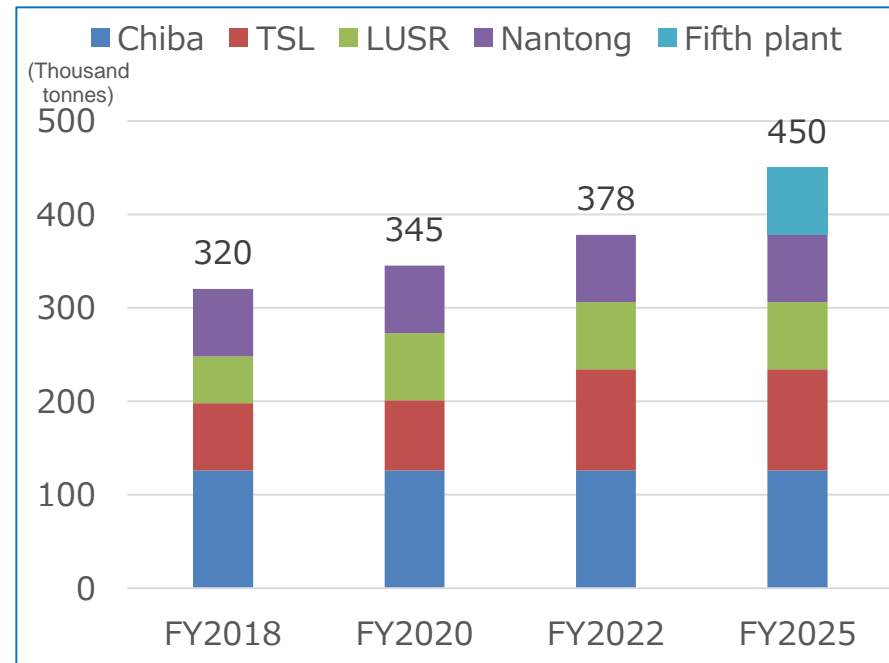
- Develop new grades: Conduct joint development with strategic customers (major tire manufacturers), expand the lineup of VCR products, develop BR with better wear resistance, develop BR with better processability
- Develop new catalyst BR: Aim for dominant performance advantage
- Multipurpose, medium-scale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

## Build trusted supply chains

- Use the advantages of operating four plants to strengthen multi-supply frameworks  
→ Business continuity planning
- VCR plan at LUSR → Meet increases in demand

## Increase production capacity to meet customer growth

- Expand production at the Malaysian plant (from 50,000 to 72,000 tonnes)
- Expand capacity at TSL (debottlenecking and increase capacity)
- Study fifth plant (Atlantic Rim region)

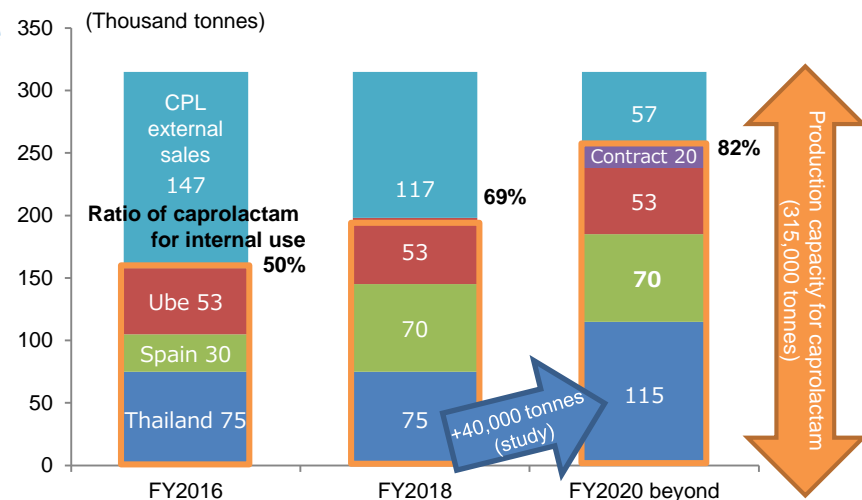


## Overall strategy: Expand nylon capacity, increase rate of caprolactam used internally

- Expand nylon capacity to increase rate of caprolactam used internally
- Ensure cost reductions are achieved for caprolactam and industrial chemicals

## Nylon: Firmly execute the growth strategy

- Make certain to realize business growth by expanding the supply capacity and increasing the global presence



Business conditions	<ul style="list-style-type: none"> <li>In addition to caprolactam manufacturers from other countries expanding into nylon polymerizing, manufacturers targeting further downstream markets (films) have emerged</li> </ul>
Achieved during FY2016–2017	<ul style="list-style-type: none"> <li>Added 40,000 tonnes of capacity (Spain)</li> <li>Began operating new compounding facilities (Spain)</li> <li>Developed materials (such as copolymers) for new films: Provided customers with samples and collected feedback</li> <li>Global sales of nylon compound for injection molding: Provided customers with samples and collected feedback</li> </ul>
Not achieved during FY2016–2017	<ul style="list-style-type: none"> <li><u>Fell short of global sales volume target of nylon compound for injection molding</u></li> </ul>
Implement in FY2018, next medium-term management plan and beyond	<p><b>Extrusion applications</b></p> <ul style="list-style-type: none"> <li>Strengthen the global presence based on superior and consistent quality Expand the scale of the business by proposing solutions in collaboration with molding machinery manufacturers</li> </ul> <p><b>Injection molding applications</b></p> <ul style="list-style-type: none"> <li>Globally develop the compound business, and develop technologies and products (markets) that offer customers new value in response to the weight reduction and hybridization of diversifying powertrains</li> </ul>



## ■ Caprolactam and industrial chemicals: Continue realizing cost reductions, increase the price of industrial chemicals

Strategies for improving caprolactam competitiveness are progressing according to plan

	Caprolactam	Industrial chemicals
<b>Business conditions</b>	<ul style="list-style-type: none"> <li>Market conditions are recovering due to factors such as environmental regulations in China, but excess supply capacity in China is expected to continue in the future</li> </ul>	<ul style="list-style-type: none"> <li>Increased demand Tight supply and demand situation in Japan</li> </ul>
<b>Achieved during FY2016–2017</b>	<ul style="list-style-type: none"> <li>Changed the manufacturing process for cyclohexane</li> <li>Expanded production of large-crystal ammonium sulfate</li> <li>Improved production efficiency by improving the cyclohexanone production process and other measures(Thailand)</li> <li>Improved the steam energy intensity (Spain)</li> </ul>	<ul style="list-style-type: none"> <li>Maximized the benefits from increasing the maintenance interval for ammonia production</li> </ul>
<b>Implement in FY2018, next medium-term management plan and beyond</b>	<ul style="list-style-type: none"> <li>Continue implementing cost reductions</li> <li><u>Review commercial distribution for ammonium sulfate</u></li> </ul>	<ul style="list-style-type: none"> <li>Increase and revise prices in response to increases in facility maintenance costs and rising logistics costs</li> </ul>

New nylon plant in Spain



New cyclohexanone plant in Ube



- Steadily increase sales revolving around automotive applications. Prepare the framework needed for sustainable growth by increasing capacity in a timely manner and strengthening competitiveness (products)

## 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 and coated separators

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

Raise cost competitiveness by leveraging newly adopted processes (strengthen revenues)

### Further enhance competitiveness

- Improve productivity and expand capacity by adopting new processes

### Projected Capacity Increases

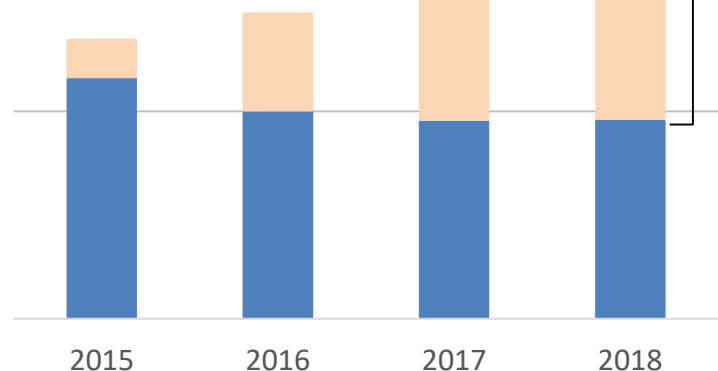
- New facilities begin operating in spring of 2018 (25% increase)
  - Studying further capacity increase to begin operating in FY2020 (40% increase)
  - Implement initiatives to derive greater benefits and increase efficiencies from unified management of entire separators business covering both base films and coated films
- ### Expand the product lineup (enhance development)
- High-strength, thin separators for high-capacity cells used for EVs
  - Low-temperature shutdown separators for high-safety cells
  - Development of organic coatings to enhance thermal resistance and adherence strength

Net sales

80% increase from FY2016

Progressive shift to electric vehicles. As projected, demand for coated separator films used in leading projects is increasing sharply. Sales in FY2018 to grow by roughly four times over FY2016.

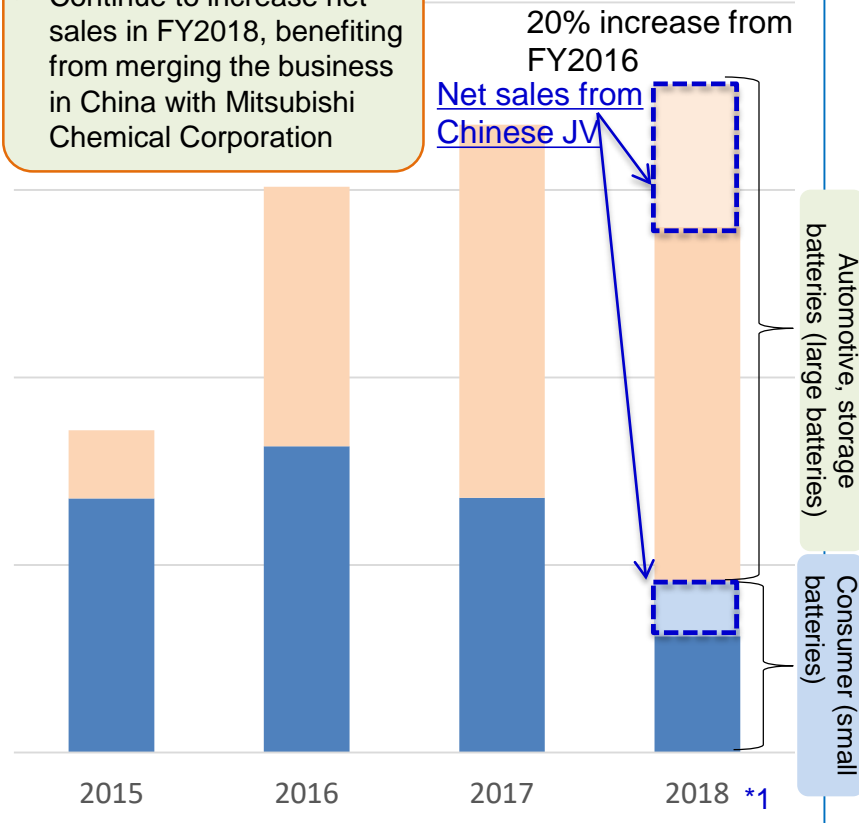
Coated Separator Films



## Electrolytes: Develop the business for automotive and storage battery applications

- Steadily shift to sales for large battery applications
- Reversal in ratio of sales for automotive applications (large batteries) and ratio for consumer applications (small batteries) in FY2017
- Continue to increase net sales in FY2018, benefiting from merging the business in China with Mitsubishi Chemical Corporation

### Global Net Sales



### Increase sales, targeting large battery applications

- Develop proprietary additives for automotive and storage battery applications  
→ Lay the foundations for sustainable growth by getting UBE's products adopted for next-generation projects
- Effectively leverage UBE's intellectual property
- Chinese JV with Mitsubishi Chemical Corporation began operating in January 2018  
Projecting a significant improvement in revenues starting from the initial fiscal year, benefitting from the merger

- Pursue technology differentiation and raise competitiveness to increase UBE's presence in large battery (automotive battery, storage battery) segment that is projected to grow**
- Aim to strengthen the partnership with Mitsubishi Chemical Corporation globally, building on the Chinese JV**

\*1 Net sales from Chinese JV is based on a percentage of sales equivalent to UBE's equity stake

- Accelerate the growth of the eco-friendly coatings business, by proposing solutions in collaboration with customers and building on the global expansion of the polycarbonate diol (PCD) business

Changes in business conditions: Strengthening of chemical regulations in various countries, particularly VOC regulations in China  
 → Growth of market for water-based polyurethane dispersion (PUD) materials

- Polycarbonate diol (PCD): Establish a global supply framework from three production bases in Japan, Spain, and Thailand

Growth strategy toward next medium-term management plan:

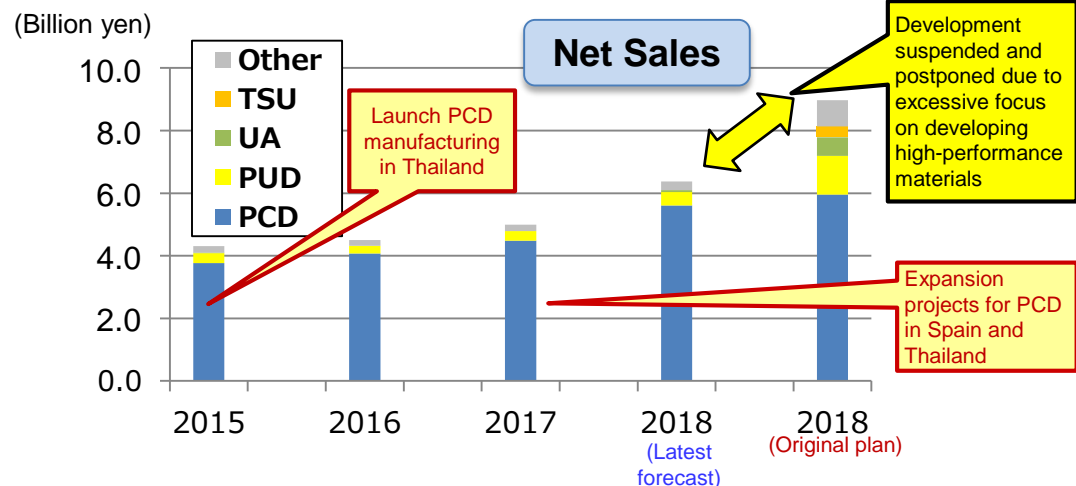
**Develop the North American market with its significant latent demand**

- Polyurethane dispersion (PUD) materials: Business growth has been slowed by delayed adoption for new large projects, due to many development projects focusing on niche functionalities which make commercialization difficult and lack of compounding technology

Growth strategy toward next medium-term management plan:

**Shift in strategy away from exclusively developing high-performance PUD materials using PCD**

- (1) Develop middle-range market that balances cost and performance, by collaborating with manufacturers of general purpose water-based resins
- (2) Supply as compounds by collaborating with additive manufacturers that have expertise in compounding different additives



Aim to realize net sales of ¥6.5 billion and 20% ROS in FY2018



## ■ Stabilize the revenue base and change the business structure

### (1) Market

Strong net sales in FY2017 for both LCD/television and OLED/smartphone markets

Slightly adjust production for LCD/television market in FY2018, expect decrease in installations for smartphone OLEDs

**Varnishes:** **Increase sales for OLED flexible displays** (new market: launch mass production in Chinese market)

\*Advantage is that UBE is global leading producer of raw material BPDA, track record of supplying super-heat-resistant varnishes to the market for many years including to JV with Samsung, and highly evaluated quality.

**Films:** Increase market share for FPCs and adopt new production processes focusing on materials

\*Aim to increase sales by expanding sales of new VT films and starting up new production processes

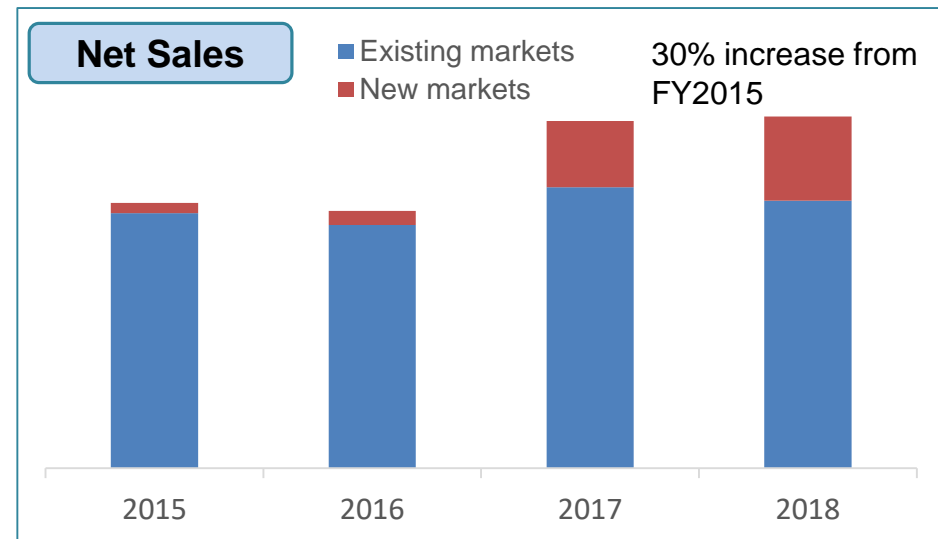
→ Increase sales for single-sided COF for LCDs and for double-sided COF for OLED flexible displays

### (2) Development

- New varnishes for flexible displays
- Develop of new film grades for fine pitch circuit substrates (FPC, COF)
- Develop film grades compatible with new production processes

### (3) Production

- Increase production of varnishes for flexible displays
- Improve stable production technologies as film sales increase
- Secure further cost reductions



## Ceramics

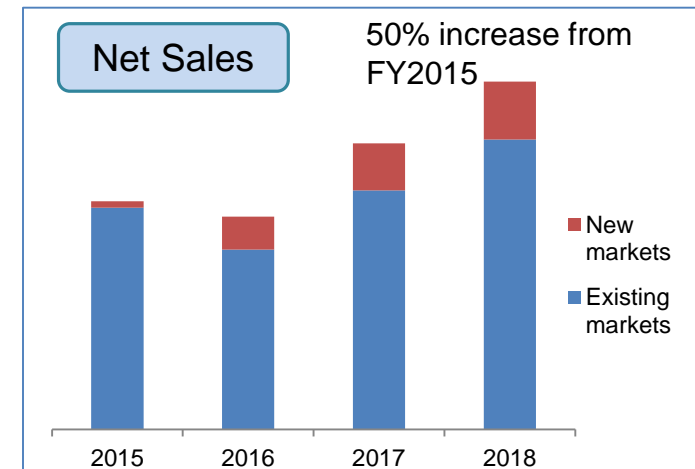
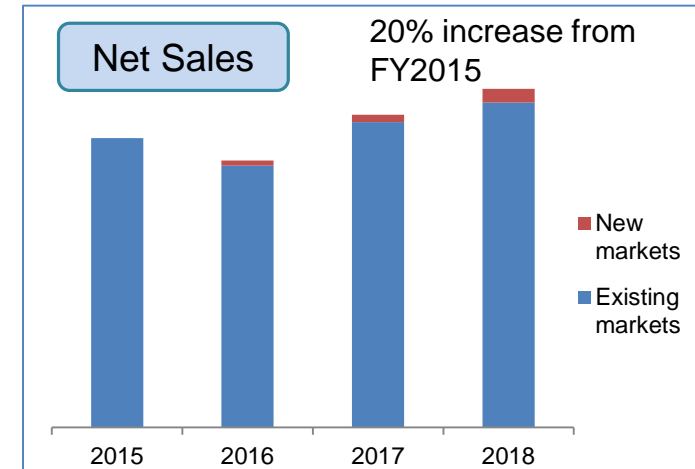
- Increase sales to new and downstream markets, leveraging new materials and new grades

- (1) Market** Expect continued growth in demand in FY2018 and beyond, with market growth for aircraft engine bearings and substrate applications for EVs
- (2) New materials** Introduce silicon nitride powders utilizing new technologies

## Separation membranes

- Maintain strong revenues and increase sales by leveraging new applications and new grades

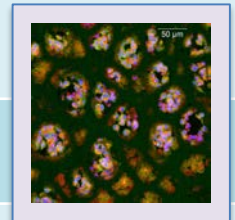
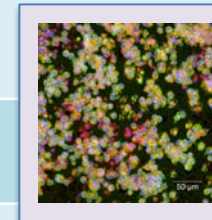
- (1) Market** Strong resource-related demand centering on nitrogen explosion-proofing applications
- (2) New grades** Increase sales in biomethane market by introducing high-performance modules for main explosion-proofing applications as well as dehumidifying applications, and by leveraging new high-pressure, high-recovery membranes
- (3) New applications** Expand the market for aircraft applications (OBIGGS) that is realizing 50–100% annual sales growth, and expand the market for biogas decarboxylation, capture orders for large projects



- Advance developing and new businesses in three business domains, leveraging strategic technologies with competitive advantages

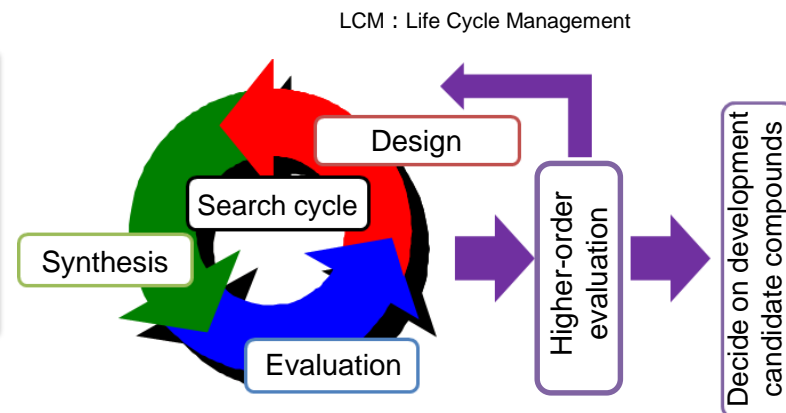
Accelerate business development by enhancing advanced technologies and using open innovation

Business Domain	Developing Businesses	New Businesses
Mobility	<p><b>New battery materials (LTO)</b></p> <ul style="list-style-type: none"> <li>Concrete study to increase scale of facilities</li> </ul> <p><b>CMC for next-generation jet engines (Tyranno fiber)</b></p> <ul style="list-style-type: none"> <li>Establish framework for mass production, develop high-performance fibers for aircraft engines</li> </ul>	<p><b>Automotive weight-reducing materials and components</b></p> <ul style="list-style-type: none"> <li>Develop composite materials</li> </ul>
Environment and energy	<p><b>Strontium carbonate nanoparticles for optical films</b></p> <ul style="list-style-type: none"> <li>Aim for rapid market introduction through function verification and customer assessment</li> </ul>	<p><b>Heat management-related components and materials</b></p> <ul style="list-style-type: none"> <li>Develop high-performance insulating materials</li> </ul>
Healthcare	<p><b>Development of new cell culturing technology using polyimide multiporous membranes</b></p>	
	<ul style="list-style-type: none"> <li>Rapidly commercialize the bioreactor system for manufacturing biomedicines (establish and accelerate the project organization)</li> </ul>	<ul style="list-style-type: none"> <li>Components and materials for next-generation healthcare applications, leveraging the functionality of polyimide multiporous membranes</li> </ul>



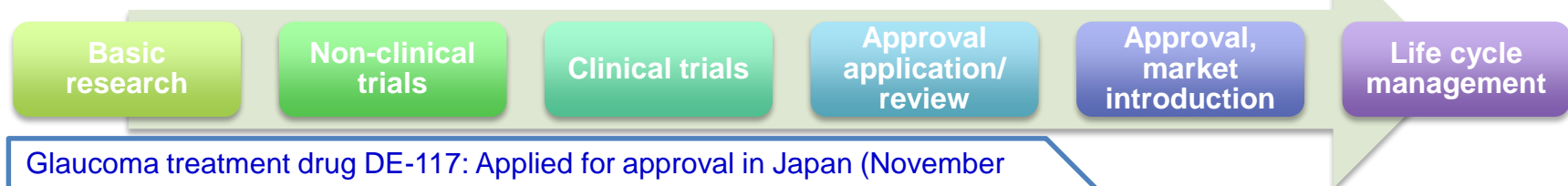
- Expand the pipeline for proprietary pharmaceuticals and implement life cycle management

## Aims of UBE's drug discovery research



## Expand the pipeline for drug discovery

## Status of Pipeline (Drivers for Future Growth) as of March 2018



**Glaucoma treatment drug DE-117:** Applied for approval in Japan (November 2017), currently in Phase III clinical trials in Asia

DE-117 (omidenepag isopropyl): Jointly co-developed with Santen Pharmaceutical Co., Ltd.

**Pruritis treatment drug SK-1405:** Currently in Phase II clinical trials

SK-1405: Co-developed with Sanwa Kagaku Kenkyusho Co., Ltd

**Fibrosis treatment drug (CP2090)**

Licensing to Curadim Pharma Co., Ltd.

- Own research
  - Joint research
- License results from own research
- Diabetic nephropathy treatment drug
  - Anti-cancer drug
  - Advanced obesity treatment drug (identification of new development candidate compound)

Implement life cycle management with partner pharmaceutical manufacturers

- Calblock® (antihypertensive agent)
- Efient® (antiplatelet agent)
- Talion® (anti-allergy agent)

Release of authorized generics

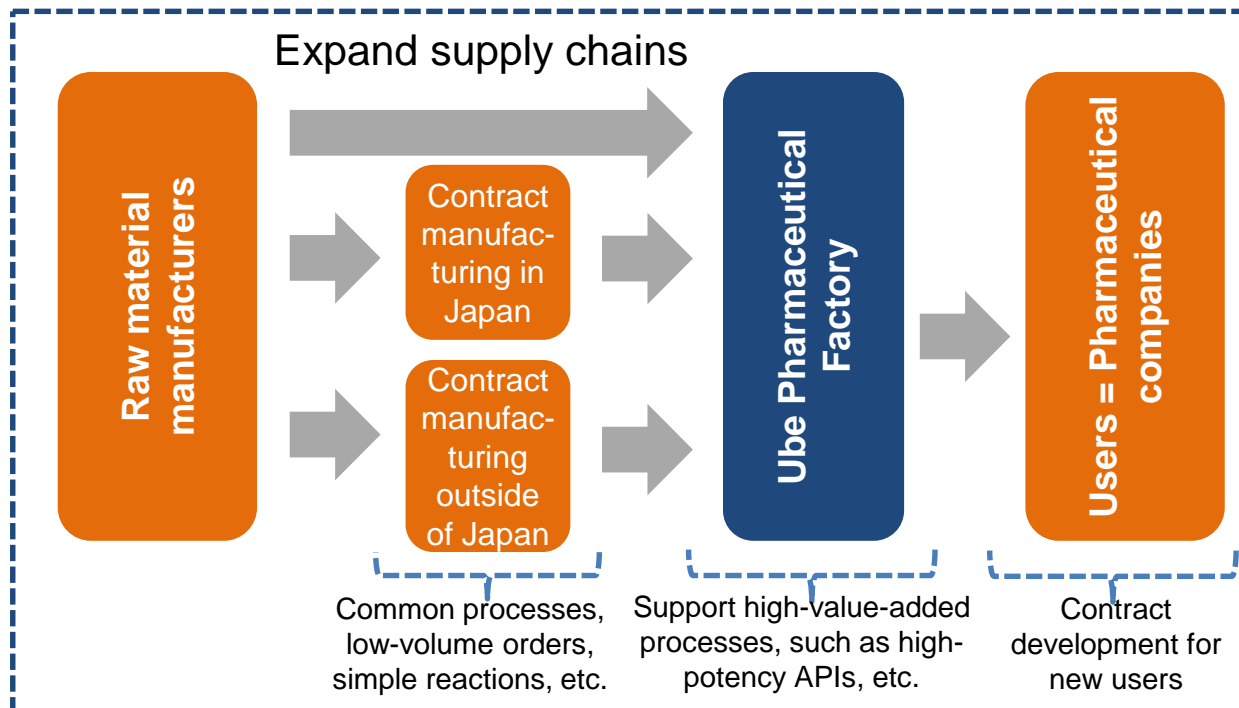


- Aim for business operations that meet changing business conditions and needs

Unmet needs, high-potency drugs, generic drugs: Establish a production framework for high-mix, low-volume manufacturing of APIs and intermediates to meet the diverse needs of pharmaceutical manufacturers (users)

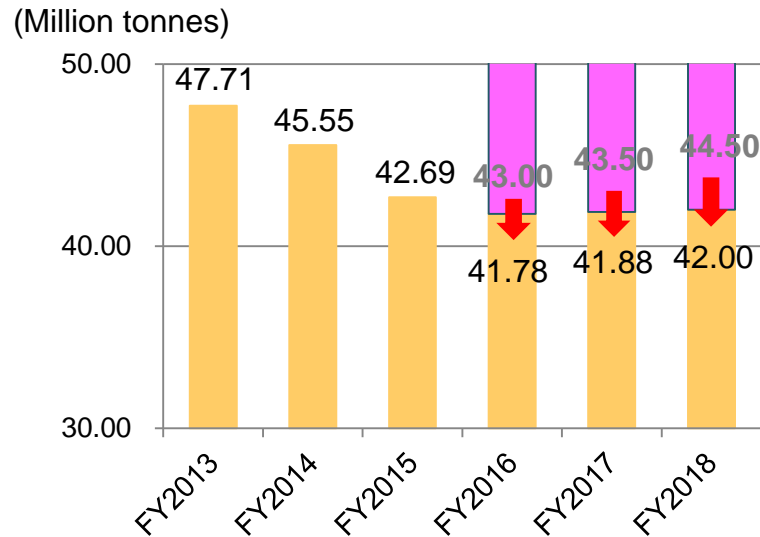
- ▶ Aim for compact and high-added-value pharmaceutical plants
- ▶ Expand supply chains to reduce total production costs
- ▶ Add support for complex reaction processes, and strengthen the marketing

## Flowchart for Division of Functions

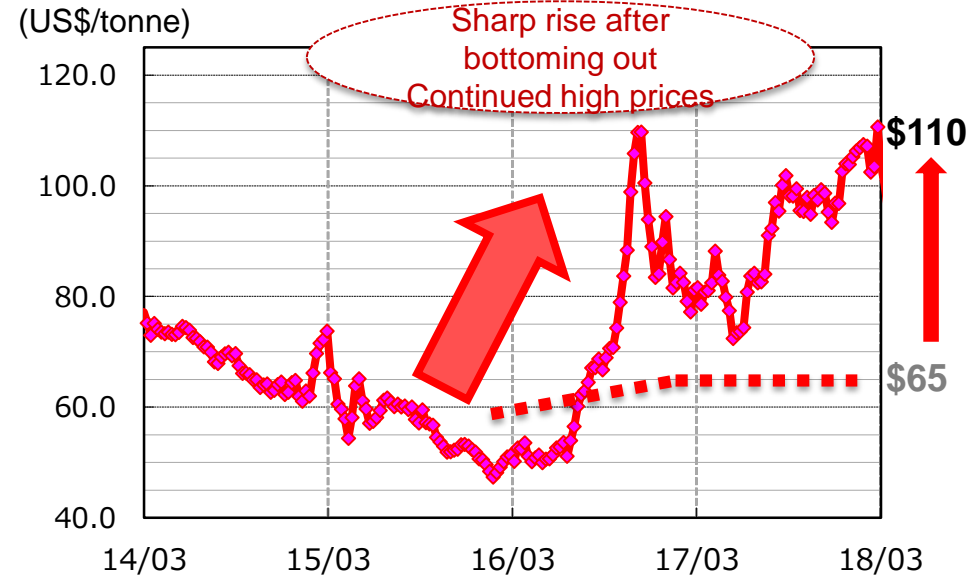


- ▶ Started contract manufacturing by installing equipment to support high-potency APIs
- ▶ Registered Master Files (MFs) for generic APIs in preparation for commercialization
- ▶ Secured and strategically used multiple raw materials manufacturers capable of stable supply and with excellent cost and quality
- ▶ Worked closely with highly cost-competitive contract manufacturers outside of Japan
- ▶ Continued to realize increases in contract manufacturing for development drugs including for new customers

## Projected Demand in Japan for Cement



## Changes in Coal Prices



**Demand:** Cement demand and market conditions (Japan, export markets) are worse than projected in medium-term management plan

**Costs:** Coal prices rose sharply starting from 2nd half of FY2016



**Lower revenues and profits** than original plan



**Secure business revenues** by **increasing prices** for cement products and calcia- and magnesia-related products

**Confirm the future targets and objectives, and rapidly adapt to changing business conditions**

# Cement & Construction Materials Company: Progress of Medium-Term Management Plan



## ■ Maintain and enhance revenues from platform businesses

### ● Cement, ready-mixed concrete, and recycling

Cost reductions, production streamlining

Isa: Began constructing exhaust heat recovery system in FY2017 (**Start operation in FY2019**)

Increased use of waste

Isa: Began constructing fourth fuel-based waste plastics processing facilities in FY2017 (**Start operation in FY2018**)

Exhaust heat recovery system



### ● Limestone, calcia, and magnesia

Secure limestone resources

Development of Kanayamadai mining zone (start mining in FY2018)

Production streamlining

Conduct renovations for Ube Material Industries/Ube Factory (FY2016–2019)

Isa limestone mine



### ● Construction materials

Construction materials, chemicals for infrastructure applications

Developing new organic products for construction and infrastructure applications

### ● Enhance the level of collaboration with Group companies

→ Maximize synergies within the Group

Business restructuring and integration

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)

## ■ Strengthen the quality assurance system and corporate governance of the UBE Group

# Cement & Construction Materials Company: Progress of Medium-Term Management Plan

UBE

## ■ Expand and extend growth strategies

### ● Expand the business areas

#### **International business:** Business development in Southeast Asia and Oceania

Securing steady cement export customers

Acquired stake in Tokyo Cement Company (Sri Lanka) PLC (FY2016–2017), studying business collaboration

Growth of MOS-HIGE (filler for automotive applications)

Constructing MOS-HIGE plant in Thailand (started construction in April 2018, scheduled to begin operating in FY2019)

Expand vessel technical consulting business and logistics/trading business

Established JV for coastal shipping business in Indonesia (FY2016), studying business collaboration

### ● Expand the business scope

#### **Environmental materials:** Develop environmental businesses for water, soil, and air quality

Increase sales of neutral solidification material and heavy metal immobilizer

Working to secure orders for large projects through stronger collaboration within UBE group

Strengthen the water purification business

Studying expansion into markets in Southeast Asia

Waste recycling and advanced waste use (waste gypsum board, etc.)

Waste gypsum board recycling business (launch in FY2017)

MOS-HIGE



Cement vessel



Clear Water (water purification agent)





## ■ Molding machinery (die casting machines):

Develop products to address fuel economy regulations and the shift to EVs

- Develop and introduce products to support shift to aluminum die casting of body and chassis components for vehicle weight reduction
- Introduce new series to meet increased demand and market needs, and increase production by further exploring collaboration (Japan, China)

## ■ Molding machinery (injection molding machines):

Realize benefits from merger with Mitsubishi Heavy Industries

- Released **UM-HH Series** under unified brand (February 2018)
- Establish globally optimized manufacturing framework (plant expansion in Japan, China, and US expected to be completed in September 2018)
- Implement unified business management to further increase competitiveness

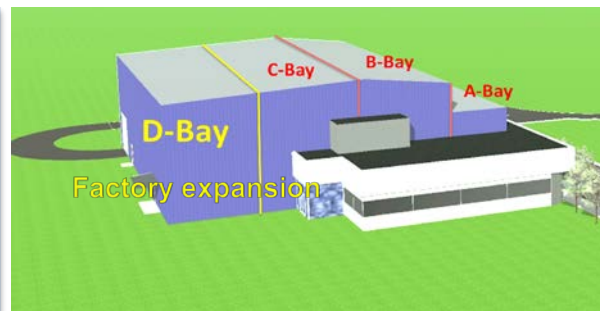
## ■ Industrial machinery:

Manage baseload power station projects and create post-IPP products

- Execution and management of large IPP project
- Develop new environmental (recycling) products



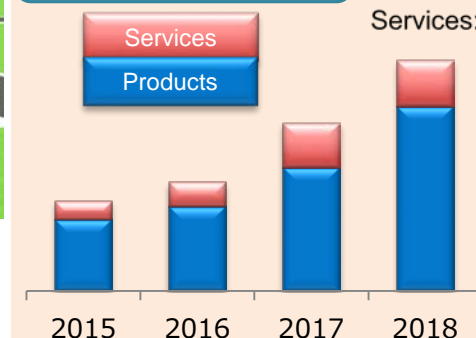
HH Series electric injection molding machine (850-ton model)



- Factory expansion: 2,000 m<sup>2</sup>
- Cranes: 60T/30T, 10T
- Double the annual production capacity for large machinery

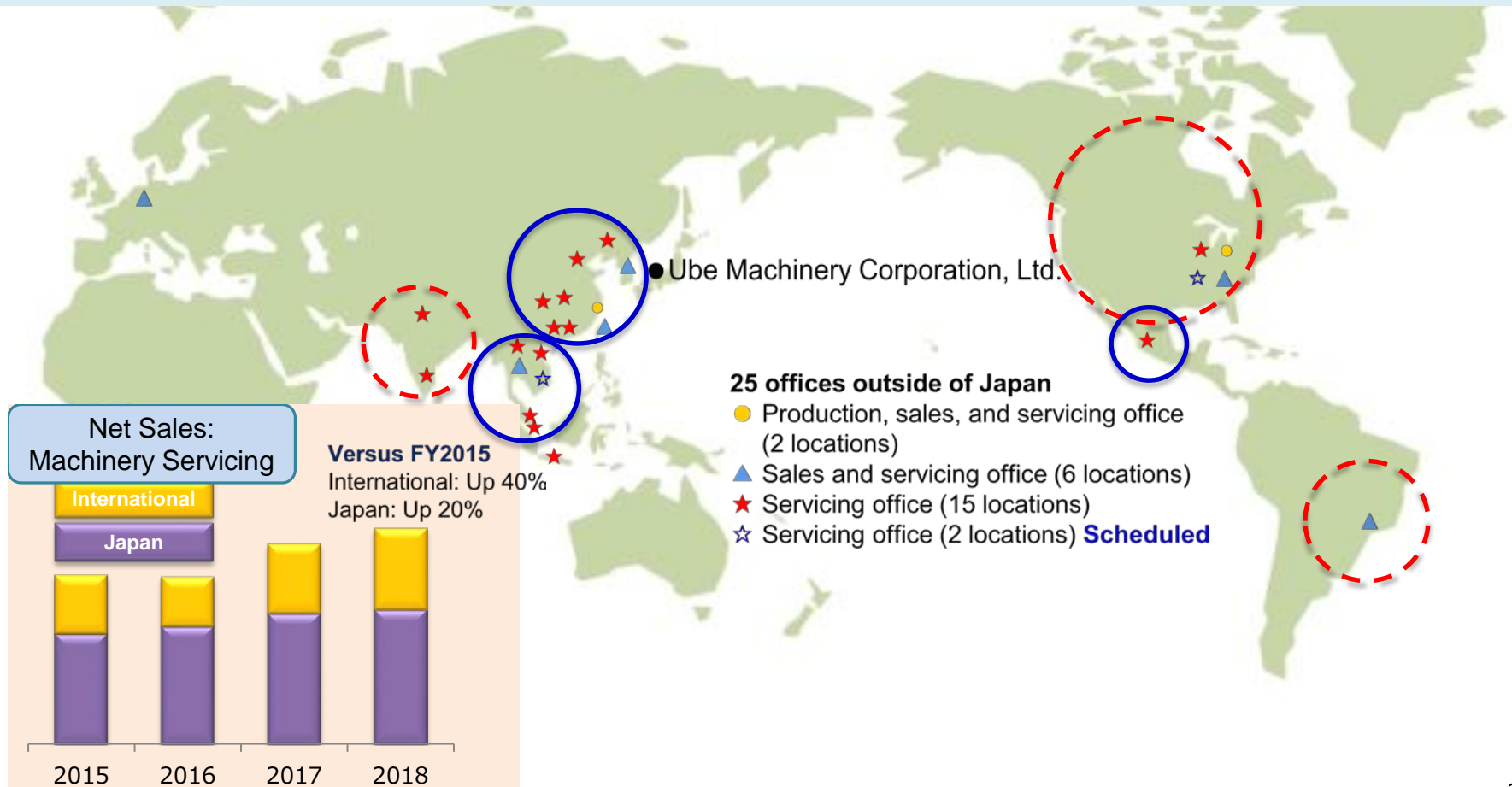
## Net Sales: Injection Molding Machinery

Versus FY2015  
Products: Up 160%  
Services: Up 150%



# Machinery Company: Increase Revenues from Machinery Servicing Business

- **Machinery servicing:** Strengthen the servicing outside of Japan to drive Machinery Company revenues
  - Expand servicing in Southeast Asia (add servicing staff and capture servicing business for non-UBE machinery)
  - Create unified servicing network outside of Japan by absorbing servicing centers for Mitsubishi Heavy Industries injection molding machines  
Already absorbed: [China, Thailand, Mexico](#); to be absorbed in FY2018: [North America, India, Brazil](#)
  - Expand the global spare parts inventory and strengthen customer support



- Provide stable supply of competitive energy (coal, electricity) and address global warming

- **Business conditions**

- Accelerated shift toward low-carbon society
- Rising coal prices



- **Coal business**

- Efficient operation by adopting Coal Center logistics planning system
- Implement plans for Yamaguchi-Ube Power Generation Co., Ltd. and maintain port facilities

- **Power business**

- Energy liberalization for IPP facility (March 2019)

- **Biomass Fuel Business**

**Started construction of demonstration facility for torrefied pellets carbonized from woody biomass**

- Scheduled to be provided in October 2019
- Testing a business solution for co-storage, transport, pulverizing, and co-firing of torrefied pellets with coal
- Identify market needs and start selling coal-pellet fuel

Biomass fuel with greatly enhanced hydrophobic properties and grindability with coal compared to white pellets





# Environment: Address and Be Part of the Solution for Resource, Energy, and Global Environmental Issues



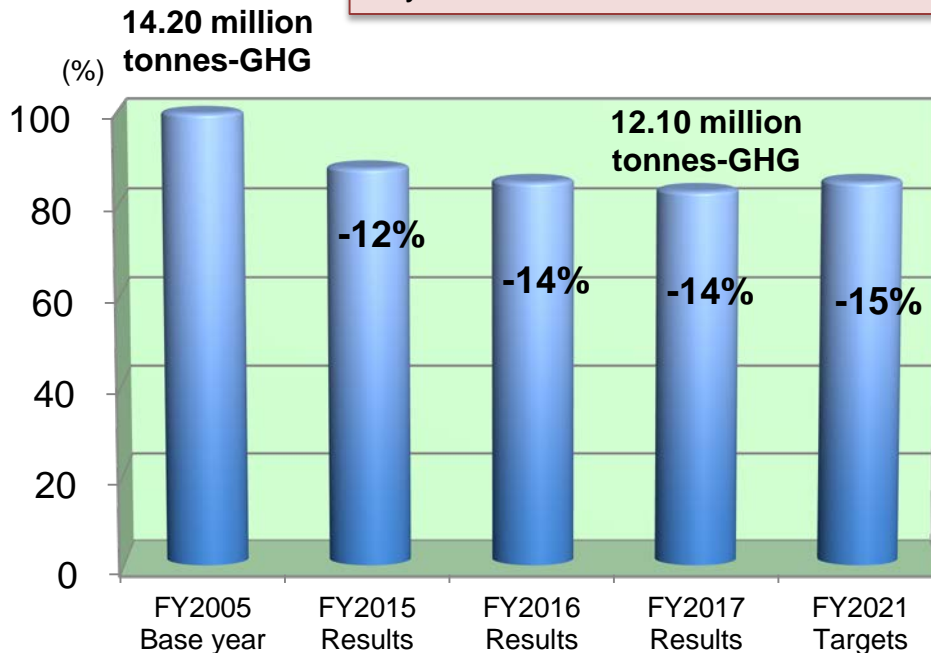
## ■ Greenhouse Gas Emissions

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 new production method for cyclohexanone using phenol
- Increase waste plastics use
- Deploy exhaust heat recovery systems

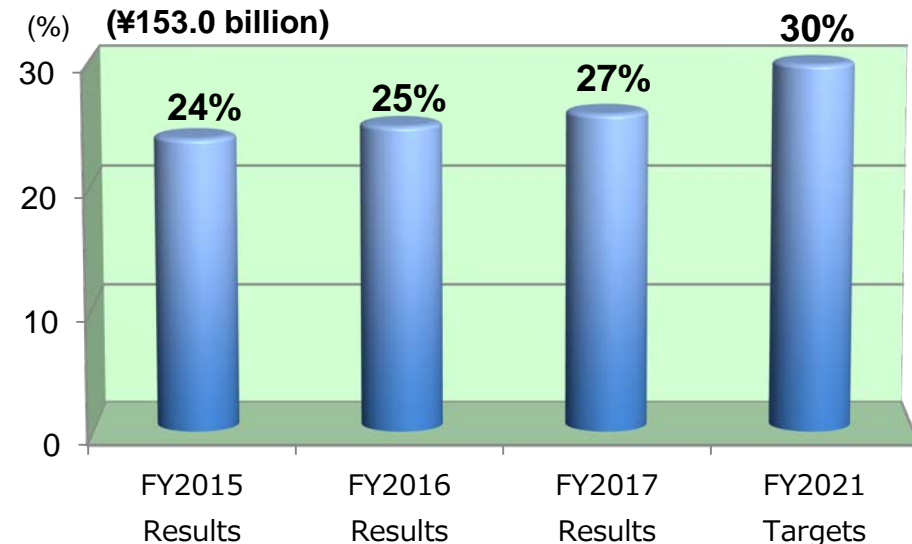


## ■ Percentage of Net Sales from Environmental Businesses

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

### Main Environmental Products and Technologies

Synthetic rubber, nylon, recycling business, energy-efficient machinery, polyimide products, LIB electrolytes, LIB separators, gas separation membranes, high-performance coatings, biomass fuel



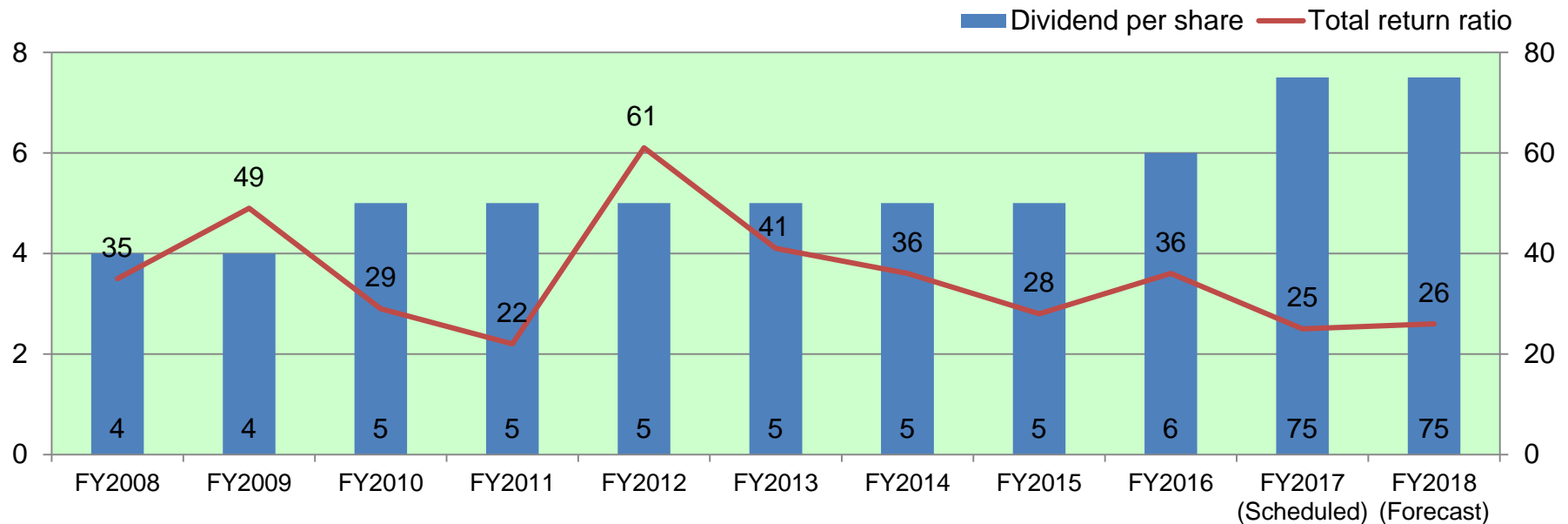


# **Approach to Shareholder Dividends**

## Shareholder Dividends

- Consistent and sustainable dividends as a platform for shareholder returns
- Consider acquiring treasury stock based on profits and cash flow, while weighing the Company's financial health and future investments

➡ Aim for a 30% or higher total return ratio (consolidated) comprising dividends and treasury stock acquisitions



Note: Ube Industries conducted a consolidation of shares by consolidating every 10 shares into one share effective October 1, 2017.



# Wings of technology Spirit of innovation **UBE**

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.

©2018 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.