Fiscal Year Ended March 31, 2014 Change & Challenge Driving Growth— May 20, 2014 UBE INDUSTRIES,LTD.



## **Briefing Contents**

- I. FY2013 Business Results and FY2014 Forecast
- II. Change & Challenge—Driving Growth
  - (1) Strategies Implemented in FY2013 and Changes in Business Conditions
  - (2) Issues and Strategies

## I. FY2013 Business Results and FY2014 Forecast

## 1. FY2013 Business Results—Key Items



© Operating income down due to slow market conditions for chemicals such as caprolactam and specialty materials, and problems at independent power producer (IPP) facility

(Billion yen)

Item FY2012 FY2013 YoY Change **Factors** (Effect of change in foreign exchange 650.5 Net sales 626.0 24.4 rate + 24.8) see next page for -5.5 29.9 24.4 Operating income Segment breakdown Lower equity earnings of affiliated -9.3 28.0 18.6 Ordinary income companies, lower foreign exchange income, other Improvement in extraordinary losses (recorded extraordinary loss from 8.2 12.6 4.3 Net income shutting down lactam manufacturing at Sakai Factory in FY2012) Net interest-210.6 215.7 5.0 Bearing liabilities Net profits, increase in retained 26.2 **Equity capital** 215.5 241.7 earnings, foreign currency translation adjustments, other Dividend 5.0 5.0 (Yen/Share)

## 2. FY2013 Consolidated Results

## Sales and Operating Income by Segment



(Billon yen)

	Sales			Operating Income		
Segment	FY2012	FY2013	YoY Change	FY2012	FY2013	YoY Change
Chemicals & Plastics	219.3	230.5	11.2	5.0	0.8	-4.2
Specialty Chemicals & Products	61.1	63.1	2.0	1.2	-0.4	-1.6
Pharmaceutical	11.4	9.7	-1.7	3.4	1.6	-1.7
Cement & Construction Materials	208.3	223.5	15.1	11.4	15.5	4.0
Machinery & Metal Products	71.3	75.5	4.2	3.6	4.4	0.7
Energy & Environment	68.7	59.0	-9.6	5.9	1.9	-3.9
Others	25.2	28.8	3.5	1.0	1.0	0
Adjustments*	-39.6	-39.8	-0.2	-1.9	-0.6	1.2
Total	626.0	650.5	24.4	29.9	24.4	-5.5

<sup>\*</sup> Including offset from intersegment transactions

## 3. FY2014 Forecast—Key Items



#### © Project some recovery in chemicals segment

(Billon yen)

Item	FY2013	FY2014	YoY Change	Factors
Net sales	650.5	670.0	19.5	
Operating income	24.4	30.0	5.6	see next page for Segment breakdown
Ordinary income	18.6	24.0	5.4	
Net income	12.6	13.5	0.9	
Net interest- Bearing liabilities	215.7	216.0	0.3	
Equity capital	241.7	250.0	8.3	
Dividend (Yen/Share)	5.0	5.0	0	

### 4. FY2014 Forecast



## —Sales and Operating Income by Segment

(Billon yen)

	Sales			Operating Income		
Segment	FY2013	FY2014	YoY Change	FY2013	FY2014	YoY Change
Chemicals & Plastics	230.5	227.0	△3.5	0.8	4.5	3.7
Specialty Chemicals & Products	63.1	73.0	9.9	△0.4	1.0	1.4
Pharmaceutical	9.7	10.0	0.3	1.6	1.7	0.1
Cement & Construction Materials	223.5	228.0	4.5	15.5	15.5	0
Machinery & Metal Products	75.5	77.0	1.5	4.4	4.5	0.1
Energy & Environment	59.0	64.0	5.0	1.9	2.5	0.6
Others	28.8	31.0	2.2	1.0	1.0	0
Adjustments*	△39.8	△40.0	△0.2	△0.6	△0.7	△0.1
Total	650.5	670.0	19.5	24.4	30.0	5.6

<sup>\*</sup> Including offset from intersegment transactions

# **II.** Change & Challenge—Driving Growth (1) Strategies Implemented in FY2013 and Changes in Business Conditions

## 5. Strategies Implemented in FY2013 (1)



#### ■ Shutdown of caprolactam chain production at Sakai Factory:

- ·Oversupply expected to continue from competitors continuing to bring new production online in China, with continued poor spreads
- ⇒Shutdown of production at Sakai Factory (high costs) at end of March 2014. Currently rebuilding a cost competitive framework for global production

#### Strengthening of nylon resin production capacity:

- •Strong demand for automotive applications and food wrapping film. Expand production framework and accelerates expansion of sales
- ⇒Shift to full capacity production (50 kt) at facilities in Thailand; currently adding 10 kt capacity in Spain (to go online in March 2015)

Scrap and build of compound production facilities in Ube; currently establishing an optimal framework for global production

#### ■ Strengthening of synthetic rubber production capacity:

- Meet strong demand from Japanese tire manufacturers
- ⇒Completed debottlenecking project to increase production by 16 kt in Chiba (from 110 to 126kt)

Currently building new plant in Malaysia, with 50 kt production capacity scheduled to go online in November 2014 Initiated study for fifth plant in addition to plants in Chiba, Thailand, China, and Malaysia

#### ■ Launch of battery materials production facilities:

- Electrolytes: Launch of Advanced Electrolyte Technologies (Zhangjiagang) Co., Ltd. joint venture with Dow Chemical of the US in June 2013
- Separators: Launch of eighth production line in May 2013, with 10th and 11th production lines scheduled to go online in July 2014

#### Strengthening of pharmaceuticals production facilities :

•Installation of facilities to improve productivity and better accommodate contract manufacturing orders

## 6. Strategies Implemented in FY2013 (2)



#### ■ Made Ube Material Industries, Ltd. into wholly-owned subsidiary :

- Made Ube Material Industries, Ltd. into wholly-owned subsidiary through stock swap in August 2013
- ⇒Further advance the consolidated management and business centralization, to accelerate decision making and maximize synergies

#### Strengthening of platform for cement business :

- Expansion of recycling business
- ⇒Launch of sludge drying facilities at Isa Cement Factory in June 2013, full capacity operation of waste plastics processing facilities at Kanda Cement Factory
- Advancement of energy-conservation measures
- ⇒Started construction of 12.7-megawatt waste heat recovery power plant in Kanda, to be completed in December 2015

#### ■ Merger of Ube Machinery Corporation, Ltd. and UBE Techno Eng Co., Ltd. :

- Merger of Ube Machinery Corporation, Ltd. and its subsidiary UBE Techno Eng Co., Ltd., which provides maintenance services for equipment and machinery, in October 2013
  - ⇒Further strengthen the services business and unify manufacturing and sales; establish global network

#### ■ Rebuild and further strengthen the energy and environment business:

- Restart IPP facility
  - ⇒Projected for second half of FY2014
- Expand renewable energy business
- ⇒Operation of trial facilities for low-temperature carbonization of palm kernel shells (PKS) in Indonesia in April 2013 21.3-megawatt megasolar power project (US Power Co., Ltd.) in Ube to go online in July 2014

## 7. Changes in External Business Conditions



#### Currencies: From strong yen to weak yen :

•Currency impact is neutral for Ube Group overall, but there were positive and negative impacts according to the business segment Positive impact: Increased competitiveness (machinery, fine chemicals, cement exports, other)

Negative impact: Increased coal prices (cement, power, and other businesses in Japan)

#### ■ Further downturn in market conditions for caprolactam:

- Planned new or expanded production capacity in China: 600 kt in 2013,600-1,000 kt in 2014
- ⇒Significant oversupply expected to continue

Spreads: \$1,200 per tonne in FY2013 under mid-term management plan → Actual: \$1,038 per tonne

#### ■ Battery Materials: Continuing Price Deflation:

- •Lower than expected demand for automotive applications
- Increased supply capacity due to preemptive capital investment, and increasing competition due to the diversification of suppliers
- Initial delay of entry of electrolytes into automotive application markets

#### ■ Electronics Materials: Falling Prices for Applications:

- Rapid change in user map (rise of low-priced smartphones and tablets from China)
- Higher performance and thinner films

#### Positive turnaround in market conditions for cement :

- •Turnaround with demand in Japan now increasing and stable demand to continue in the future
- ⇒Japan Cement Association initial forecast for FY2013: 46 million tonnes → Actual: 47.7 million tonnes → Projected to reach 48 million tonnes in FY2014
- Prices of cement for export also up on a dollar basis. Improved profitability due to weaker yen and other factors.

## II. Change & Challenge—Driving Growth(2) Issues and Strategies

### 8. Issues



## Vision for the UBE Group

- Growth centering on differentiated chemicals businesses
- Achieve stability through diversification amid shifting business conditions



#### **Chemicals business:**

Driving force for growth Non-chemicals business:

**Anchor revenues** 

### Rebuild the chemicals business:

- Rebuild the nylon chain
- Actively strengthen strategic growth businesses such as battery materials, and core platform businesses that can be expanded in the future such as synthetic rubber
- Pursue a selective focus for strategic growth businesses that are struggling to expand while revising the business strategy to adapt to changing conditions, accelerating their development into cornerstone businesses

## ■ Further increase profits from the non-chemicals businesses:

- Construction materials: Maximize profits amid strong demand (secure cost reductions and appropriate pricing)
- Machinery and metal products: Establish a global network and strengthen the services business
- Energy and environment: Make certain to restart the IPP facility, and expand the renewable energy business

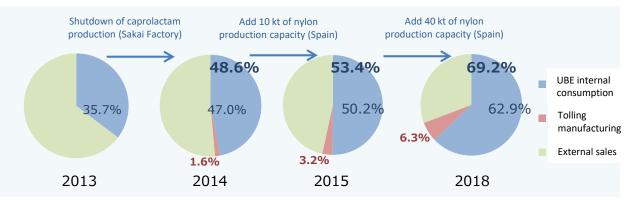
## 9. Chemicals and Plastics (1) Strategy for Lactam Business LIBE

## **Shift to Competitive Nylon Raw Materials**

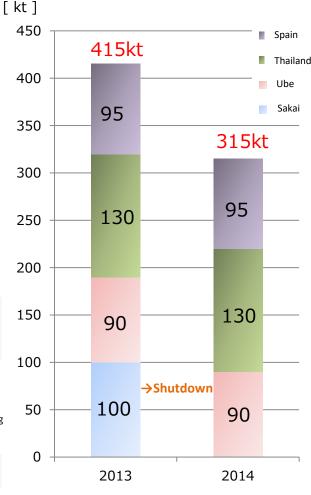
#### **Strengthen cost competitiveness**

- ⇒Achieve early break-even point for lactam business separately
- Shutdown of production at Sakai Factory
- →Minimize residual fixed costs
- Comprehensive cost reductions (short-term strategy)
- →Ongoing streamlining, improve revenues, reduce production issues, etc.
- Increase resilience of global supply chain (medium- and long-term strategy)
- →Strengthen competitiveness of raw materials such as ammonia and cyclohexanone, secure high added value for ammonium sulfate, etc.

#### **Increase Internal Consumption of Lactam**



#### **Lactam Production Capacity**



## 10. Chemicals and Plastics (2) Strategy for Nylon Business LIBE

#### **Nylon 6 Business: Expansion Strategy**

#### **Extrusion Applications**

#### Become No. 1 in the global market

•Expand production capacity (additional 10 kt in 2014 and 40 kt in 2018 in Europe)

#### **Injection Applications**

#### **Strengthen and expand compound business**

- •Establish compound production in China, Europe, USA, and Mexico in addition to existing production in Japan (15 kt) and Thailand (11 kt)
- $\rightarrow$ Tolling manufacturing, mergers and acquisitions, and alliances with local companies
- Strengthen development capabilities in Ube, Spain, and Thailand
  - →Accelerate global development

#### Accelerate sales expansion through tolling manufacturing

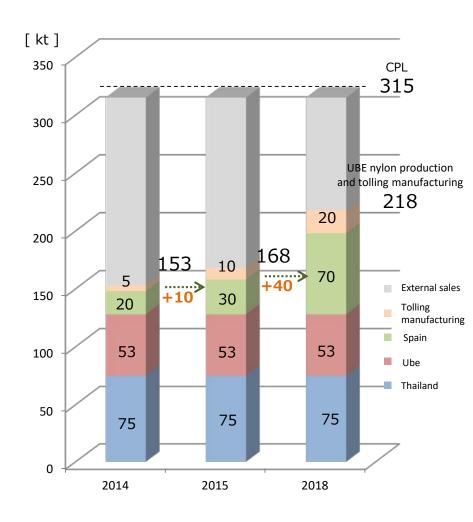
 Currently negotiating tolling manufacturing agreements with three European and American partners for polymers and compounds respectively

#### Nylon 12 Business: High Added Value Strategy

#### **Expand applications that reduce environmental impact**

- Multilayer tubes (for automotive fuel supply lines and pneumatic brakes)
- Elastomers
- · Multi-layer films for food wrapping

#### **Caprolactam and Nylon 6 Production Capacity**



## 11. Chemicals and Plastics (3) Strategy for Synthetic Rubber Business



### Become Global No. 1 for High-End Butadiene Rubber

#### **Features of UBE butadiene rubber**

- Specialist in butadiene rubber
- →Segregate from styrene-butadiene rubber (SBR)
- Have already secured stable supply of butadiene raw material for all plants
- Joint development with major users
- →Users have strong confidence in material properties and quality
- Achieve differentiation and cost reductions
- →73% specialty grades (vinyl cis, metallocene, linear, other). Differentiation from general purpose grades from China
- Expand capacity according to user demand
   Malaysia plant
- →November 2014: Scheduled start of commercial operations
- →During FY2017: Scheduled to reach 72 kt annually (up 22 kt)

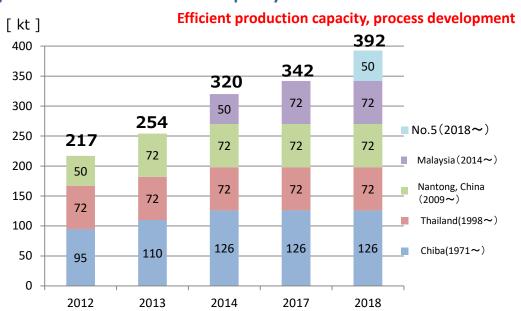
#### Prerequisites for plan to construct fifth plant

- →Secure cost competitive source for butadiene raw material
- →Industrial base infrastructure
- →Close proximity to major users
  - \*Also studying possibilities for M&As

Bubber Type Usage		Features	Tire Material Application		
Rubber Type	Ratio	reatures	Tread	Sidewall	Chafer
Styrene- butadiene rubber (SBR, S-SBR)	19%	<ul><li>Braking on wet road surfaces</li><li>Reduced rolling resistance</li><li>Workability</li></ul>	0		
Butadiene rubber	14%	<ul> <li>Wear resistance,</li> <li>rebound resilience</li> <li>Low temperature</li> <li>characteristics, flex cracking</li> <li>resistance</li> <li>OTear strength</li> </ul>	0	0	0

Features/Application: Excellent (◎), Good (○)

#### **Synthetic Rubber Production Capacity**



## 12. Specialty Chemicals and Products (1) Strategy for Polyimide Chain Business



Take Maximum Advantage of Properties of BPDA-Based Polyimide (Ultra Heat Resistance, Dimensional Stability, Chemical Resistance, Durability)

#### **Existing Application Fields: Platform to Stabilize Profit/Loss**

- Films for chip-on-film (COF) in large LCD panels
- Varnish for seamless belts in copiers
- Flexible printed circuits (two-layer copper clad laminate films): Rapid growth in smartphone market. Urgent demand to expand range of applications including for high-end devices from China. (Strengthen product lineup and technical services outside of Japan.)
- Strengthen competitiveness through cost reductions and productivity improvements

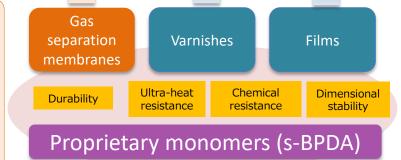
#### New Markets and Application Fields: New Cornerstone Businesses Needed to Strengthen Revenues

- \*To address the increased performance and advancements in the required performance of devices, there is a steady shift to polyimide materials and their adoption
- Flexible displays (varnishes, films)
- Semiconductor packages (films)
- Heat-resistant paints and coatings (varnishes)

#### **Bring to New Markets and Applications** OBIGGS for explosion prevention in airplanes Heat-resistant Multilayer circuit boards paint and coatings Semiconductor packages Biogas concentration Flexible displays Bioethanel dehydration Nitrogen separation **Existing Main Markets** membranes for explosion prevention Dehumidification COF membranes for rail vehicles Flexible printed circuits (dual-Humidification membranes for layer copper clad laminates) medical devices Decarboxylation and Seamless belts dehydration membranes

#### **Thoroughly Explore Markets in Strong Environment and Energy Sector**

- Increase in demand for nitrogen separation membranes for explosion prevention applications in North American oil wells, shale gas exploration, and mining operations in China. (Strengthen sales promotion outside of Japan, increase module performance.)
- Strong demand for dehumidification membranes for rail vehicles and humidification membranes for medical devices
- New applications: Advance the development of on-board inert gas generation systems (OBIGGS) for explosion prevention in airplanes, other



## 13. Specialty Chemicals and Products (2) Strategy for Battery Materials Business



Leverage Technology and Solution-Proposing Capabilities in Increasingly Competitive Markets

#### **Market Conditions**

- •Slow emergence of demand for lithium-ion batteries for vehicles
- Shift to overcapacity in supply for battery materials
- Intensifying price competition
- Advancements in performance and quality requirements for battery materials



Electrolyte manufacturing at Advanced Electrolyte Technologies (Zhangjiagang)

#### Separator

- Have already become de facto standard for automotive applications (dry manufacturing method)
- Preemptively addressing further advancements in quality requirements
- •Expand sales based on additional performance from coatings (launch mass production in 2014–2015 for automotive applications)
- Timely expansion of production capacity
- Comprehensive pursuit of productivity improvements (cost reductions)

#### **Electrolyte**

- •Consumer applications: Room to expand market share for smartphone applications
- Automotive applications: Slow to develop market compared with the competition
- \*The development of the automotive application market is a critical issue over the medium and long term
- •Realize performance that surpasses the competition, by leveraging ability to develop superior additives and propose formulations
- Launch global supply framework by bringing China plant up to full operating speed
- · Leverage strengths in own manufacturing of main solvents





Priority allocation of business resources to conduct technology development

## 14. Specialty Chemicals and Products (3) Strategy for Fine Chemicals Business: Expand Business Centering on C1 Chemicals Technology



Promote shift from chemicals to high added value downstream products. "From a materials business to a solutions business."

#### Environmentally-friendly coatings

#### Polycarbonate diol (PCD)

- No. 1 global share
- Move up investment to increase production capacity (in Thailand)

#### Polyurethane dispersion (PUD) materials

- Environmentally-friendly water-based coating materials
- Propose solutions to customer needs and problems

#### Slide-ring material (SRM)

Development of new elastomers combining SRM and PCDs High-grade polyurethane raw materials

Interior

building

materials

Automotive exterior paints

Automotive interior materials

Synthetic leathers Artificial leathers

High-performance paints and resins

Develop
environmentallyfriendly coating
materials into new
cornerstone business





Leverage

**UBE's proprietary strengths** 

for C1 chemicals chain

#### Litihium-ion battery electrolyte

#### High-purity DMC, DEC, and MEC

- Source of competitiveness for UBE's electrolyte business
- Also conduct external sales (supply to electrolyte manufacturers worldwide)
- Also study local production (license or joint venture) in China

#### C1 technology licensing

#### Dimethyl oxalate (DMO), monoethylene glycol (MEG)

- Breakthrough process innovation for manufacturing MEG polyester raw material (growing market) from carbon monoxide.
- \*Issued seven technology licenses to Chinese companies since 2010.

#### **Dimethyl carbonate (DMC)**

- Use licensing to develop electrolyte solvents
- Also hope for fuel additive applications in the future

#### 15. Pharmaceutical



#### **Business Strategy for Pharmaceuticals**

#### Implement the business model, and get the business on track for stable growth by building the foundations of the business and reaping results

- Drugs discovered by Ube: Expand the pipeline of drug development and pursue rapid licensing, alongside lifecycle management of existing drugs discovered by Ube
- Contract pharmaceuticals manufacturing: Expand the business by improving facilities and technology capabilities (ultra-low temperature reaction, high potency) and strengthening supply chains
- Establish an overseas manufacturing base, manufacture active ingredients for generic drugs, and advance the business model for contract process development

#### ◆ Current state of joint development and life-cycle management

Trade name (development code)	Indication	Current status (Marketing countries)	Future plans
<b>Talion</b> Generic name: Bepotastine besilate Sales: Mitsubishi Tanabe Pharma Corporation	Antiallergy agent Allegic rhinitis Urticaria Skin disorders with pruritus Allergic conjunctivitis	<ul> <li>Talion tablets(Japan, Korea, China, Indonesia)</li> <li>Tailon oral disintegrant tablets(Japan)</li> <li>Bepreve ophthalmic solution(US, Korea)</li> </ul>	<ul> <li>Expand the life-cycle management         New indications and formulas, penetration into emerging market,         etc.</li> <li>Japan: Conducting Phase 3 clinical trials for rhinitis and atopy         medicine for child use</li> </ul>
Calblock Generic name: Azelnidipine Sales: Daiichi Sankyo Co., Ltd.	Antihypertensive agent  ● Hypertension	<ul><li>Calblock tablets(Japan)</li><li>Rezaltas combination tablets(Japan)</li></ul>	<ul> <li>Pursue sales promotion as Olmesartan/Calblock family marketed Daiichi Sankyo Co., Ltd.</li> </ul>
Effient/Efient Generic name: Prasugrel Sales: Daiichi Sankyo Co., Ltd. Eli Lilly and Company	Antiplatelet agent  ● Heart attack, stoke, etc.	<ul><li>Effient tablets</li><li>(US, Europe and 70 countries)</li><li>Expect to sell in Japan</li></ul>	<ul> <li>Expand sales into global countries and regions</li> <li>Japan: Cardiac drug approved in March 2014         Conducting Phase 3 clinical trials for brain area     </li> <li>US: Conducting Phase 3 clinical trials for child use</li> </ul>
(DE-117) Co-development: Santen Pharmaceuticals Co., Ltd.	Antiglaucoma agent  Glaucoma and ocular hypertension	US: Phase 2	● Pursue global development
(DS-1442) Co-development: Daiichi Sankyo Co., Ltd.	Dyslipidemia treatment drug  ● Dyslipidemia	US: Phase 1	● Pursue global development

#### ♦ Status of Pharmaceuticals Manufactured on Contract Basis

Marketed Pharmaceuticals

APLs for diabetes treatments, Hyperuricemia treatment drug, antihypertensive agent, etc.

Intermediates for antithrombotic agents, dyslipidemia treatment drug, anticoagulant, diabetes treatments, etc.

Pharmaceuticals Under Development

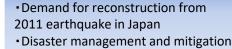
APLs and intermediates for anticancer agents, diabetes treatments, antihypertensive agent, etc.

Products for which Ube received orders from major Japanese and international pharmaceutical companies were brought to market

#### 16. Cement & Construction Materials



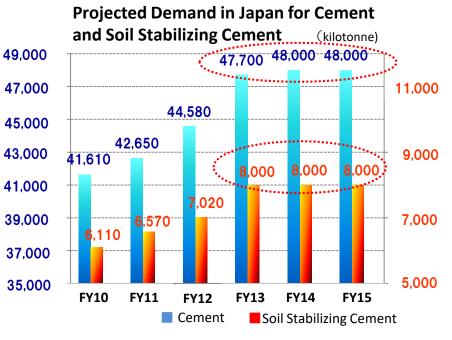
## ■ Cement and Ready-Mix Concrete: Maximize Profits amid Strong Demand



Aging infrastructure

Strong demand in Japan over medium term

- Make certain to capitalize on demand in Japan (cement, soil stabilizing cement)
- Make increasing use of advanced waste recycling
- Secure appropriate pricing for cement and ready-mix concrete



#### ■ Limestone, Calcia, and Magnesia: Leverage Strengths of Limestone Chain

- •Strengthen the limestone resources business by leveraging the strengths of calcia (No. 1 in market) and magnesia (sole manufacturer in Japan) businesses
- Target launch of mining operations in Kanayamadai mining zone in 2017

#### ■ Respond to Shrinking Future Demand in Japan:

#### **Secure Ongoing Cost Reductions and Strengthen Group Revenues**

- Construct waste heat recovery power plant at Kanda Cement Factory
- Continue reducing costs; upgrade selected aging facilities
- Rapidly derive benefits from making Ube Material Industries, Ltd. a wholly-owned subsidiary



## 17. Machinery & Metal Products



Derive benefits from integrating products and services, and endeavor to expand revenues in growing international markets by best leveraging the global network

### Core Machinery/Projects Delivered or Completed

	Molding machinery	Industrial machinery	Bridges
Japan	3,200	3,700	550
Outside of Japan	4,000	600	_
Total	7,200	4,300	550

- Molding machinery:
- Die casting machines, injection molding machines, extrusion presses (20% global share of target markets)
- ·Industrial machinery:
- Vertical mills, water screen equipment, transportation equipment, crushers, and ceramic machinery (30% share in Japan)
- Bridges: Construction projects in 41 out of 47 prefectures



#### Offices Outside of Japan

- Production, sales, and servicing locations (2 locations)
- ▲ Sales and servicing office (3 offices)
- ★Servicing office (17 offices)
- •Unified management of production, sales, and servicing and strengthening of customer support
- → Merger of Ube Machinery Corporation, Ltd. and UBE Techno Eng Co., Ltd.
- Strengthen competitiveness of die casting machines
- → Equity business tie-up with Toyo Machinery & Metal Co., Ltd.
- ⇒Aim to become global No. 1 between UBE Group and Toyo Group
- Actively develop the global network
- →Acquire full ownership of Thai operations, establish local subsidiary in Mexico
- ⇒Increase revenues from servicing business
- · Capture demand in Japan for industrial machinery
- → Focus energies on power business (including IPP facility), reconstruction from earthquake, and upgrades to aging machinery
- Strengthen collaboration within Group network
- → Subsidiaries outside of Japan, Ube Steel Co., Ltd., Fukushima Ltd., T&U Electronics Co., Ltd.



Machinery co-developed with Toyo

## 18. Energy & Environment



## **■ Coal Business: Respond to Increased Demand**

- ⇒Capture demand from newly built coal-fired power plants
- ⇒Increase competitiveness by achieving cost reductions at Okinoyama Coal Center

### **■ Power Business:** Restart Operations and Secure Competitiveness

- ⇒Restart suspended IPP facility and achieve stable power generation (to be restarted in 2nd half of FY2014)
- ⇒ IPP free to generate power in 2019 and beyond, bringing in revenues (secure regular customers)

## **■ Expand Renewable Energy Business**

- ⇒21.3-megawatt megasolar power plant to start operating in July 2014
- ⇒ Rapidly commercialize biomass energy supply business including low-temperature carbonization of PKS
- ⇒ Maximize revenues from IPP under the feed-in tariff scheme



## 19. Research and Development (1)



Strengthen existing priority businesses and pursue selective concentration, while striking a balance between next-generation R&D themes

#### 1. Strengthen Existing Core Businesses

Support the business platform by achieving performance and costs that meet customer requirements, and endeavor to expand the range of applications for each business segment

#### **Synthetic rubber**

- •Advance materials development for lighter tires and better fuel economy, by leveraging control technology for particle structure
- Develop specialty grades (nano vinyl cis rubber, modified butadiene rubber, etc.) by leveraging the characteristics of cobalt catalysts

#### Nylon

- Extrusion applications: Make improvements based on polyamide 6, increase performance by leveraging copolymer technology, and expand the range of applications
- Injection applications: Pursue compound technology, increase performance through composition design and value engineering, and improve productivity

Leverage computer-aided engineering (CAE) technology and materials technology

→ Adopt new components and develop fabrication technology, such as for metal adhesion

#### **Battery materials**

 Maintain early advantage by leveraging development capabilities that are valued by customers, and respond to increasingly sophisticated customer requirements (higher voltage for consumer sector; lower resistance for automotive applications)

Actively endeavor to capture new markets centering on Asia

## 20. Research and Development (2)



#### Polyimide chain

- Develop materials for flexible devices and next-generation circuit boards
- •Leverage the characteristics of biphenyl tetracarboxylic dianhydride (BPDA) to develop differentiated new high-performance gas separation membrane materials
- Develop innovative new manufacturing method for BPDA

#### Fine chemicals

- Achieve significant productivity improvements by developing new manufacturing methods and processes for C1 chemicals
- Develop low-solvent or solvent-free high-performance environmentally-friendly coatings

#### 2. Expand Scale of Expected Growth Businesses

#### **Aerospace sector (Tyranno Fiber)**

- Focus efforts on materials development for next-generation commercial jet engines
- •Study productivity improvements for current manufacturing processes and develop next-generation production processes

#### Specialty inorganic materials (silicon nitride, others)

- ·Leverage high-quality silicon nitride made using world's only imide thermal decomposition method
- Expand market share by achieving cost reductions through new manufacturing methods for silicon nitride

#### New specialty inorganic materials

- · Assemble inorganic material engineers from the UBE Group, and reorganize the R&D framework
- •Increase the pace of materials development for phosphors, magnesium oxides, etc.



## 21. Looking Ahead to FY2015



- Position FY2014 as starting year to regain momentum for achieving mid-term targets
- ⇒ FY2013 down roughly ¥10 billion from initial projection, but no change to strategy of medium-term management plan
- Make certain to implement measures despite continued challenging business conditions, and achieve rapid results
- ⇒ **Rebuild the chemicals business** by reaffirming the market conditions and aligning the direction of production, sales, and engineering
- Also expand proactive investment (including M&As) under improved financial position
- **⇒** Get back on track for growth

Chemicals business

Non-Chemicals business



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.

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