

# About the new Mid-Term Management Plan



From Will2014 →→→ Advance 2017

 **MITSUBISHI GAS CHEMICAL CO., INC.**



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# Consolidated Results

## 1. MGC Will2014 Review

### ● Changes in Business Results

- Ordinary Income Variance P5
- Major Investment Projects P6
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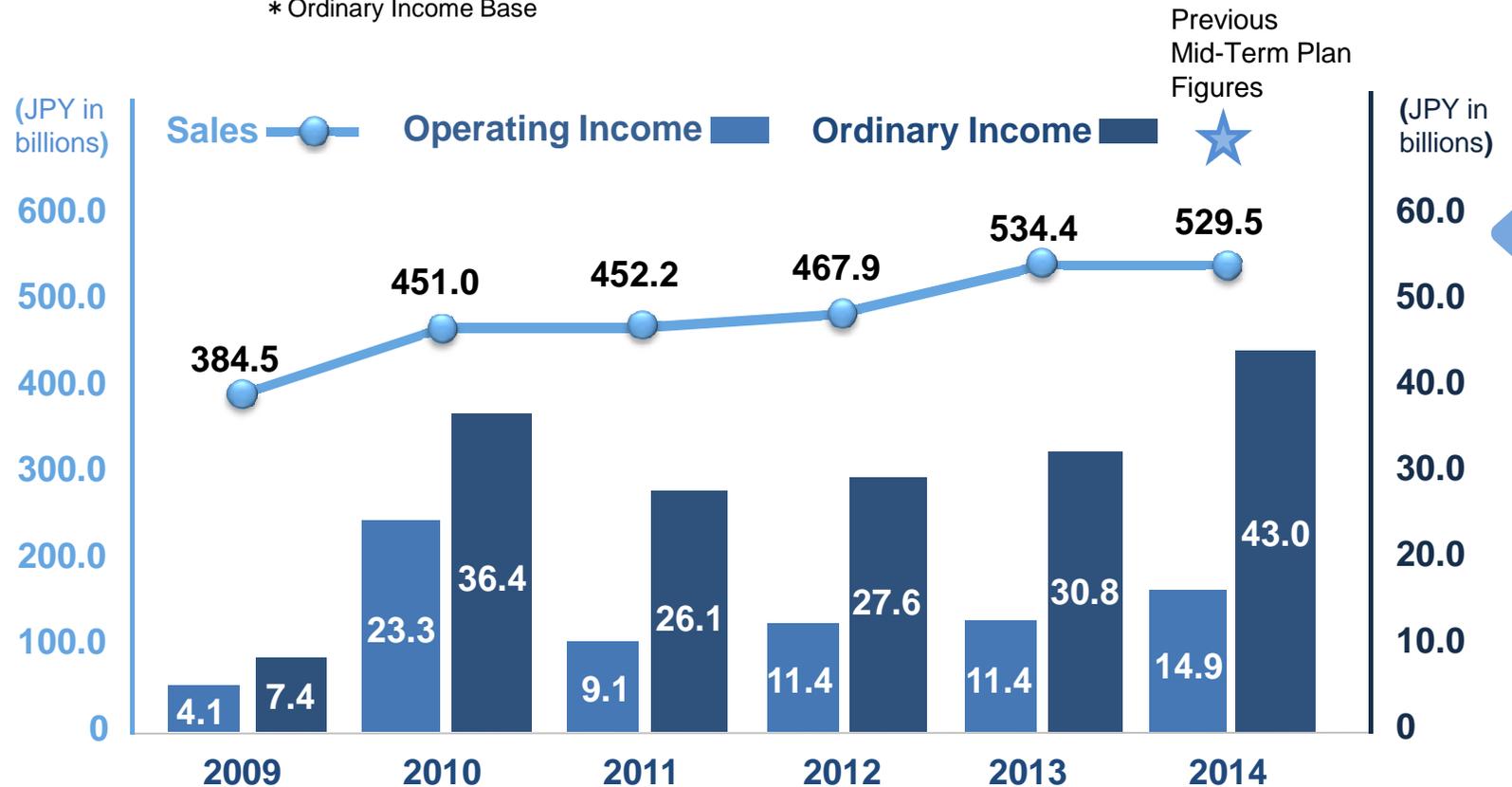
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(Consolidated index)	Fiscal Year 2012 Results	Fiscal Year 2013 Results	Fiscal Year 2014 Results	Fiscal Year 2014 Plan
Sales(JPY in billions)	467.9	534.4	529.5	600.0
Operating Income (JPY in billions)	11.4	11.4	14.9	40.0
Ordinary Income (JPY in billions)	27.6	30.8	43.0	60.0
ROA(%) *	4.6	4.8	5.9	9.0

\* Ordinary Income Base



# Ordinary Income Variance by Segment

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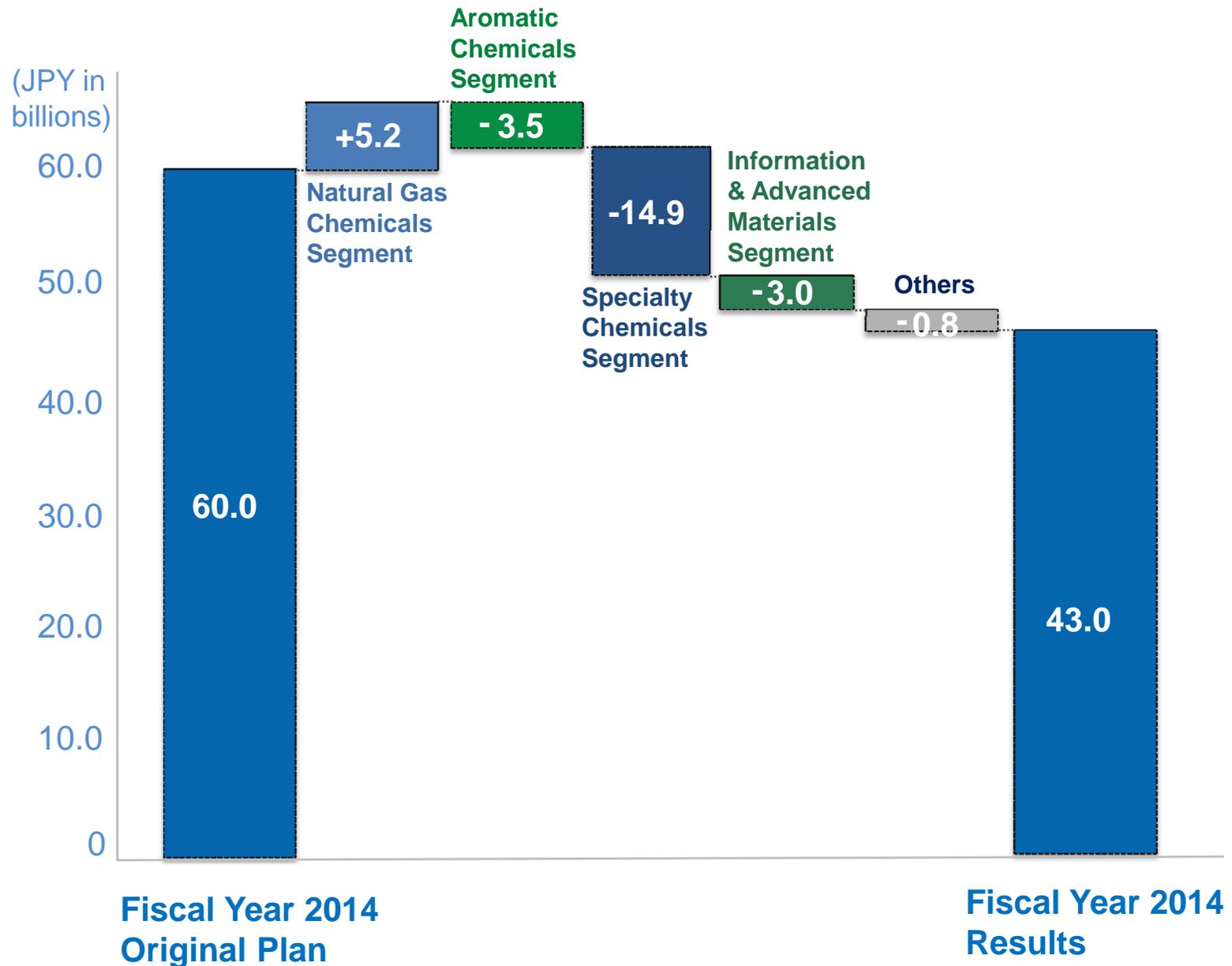
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# Major Investment Projects

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Polycarbonate new plant construction - Production capacity of 80,000 MT/year - Shanghai 2012



Conversion of JSP into a consolidated subsidiary - Sales of 116.9 JPY in billions(2014 results) - Japan 2015



Shale gas / LNG project participation - 1% of revenue derived from 12 million MT/year - Canada 2014



Polyacetal facility expansion - Production capacity of 100,000 MT/year (after expansion) - Thailand 2013



BT materials new plant construction - Production capacity of 3,000,000 m<sup>2</sup>/year - Thailand 2013



Methanol plan - Production capacity of 1 million MT/year, fuel DME 20,000 MT/year - Trinidad and Tobago 2015



# Qualitative Assessment

## Basic Strategy

Strengthening of core businesses

Restructuring underperforming businesses

Speeding up the development and creating of next generation businesses

Improving total enterprise quality in support of sustainable growth

Evaluation

## Evaluation

Except for methanol, core business plans were not achieved.

Withdrawal from the Q10 business, MX/PIA business structural reform implemented, in-house production of ammonia stopped.

Further develop Next Generation Business Project activities and establish organizations to develop new business persistently.

Further improved manufacturing site capabilities, implemented measures for achieving production processes with low environmental impacts, and promoted the development of global human resources.

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# Perceptions of Future Trends

Future trends : the key to the society of the future

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## ENVIRONMENT

- Increased greenhouse gases leading to global warming / climate change
- More intense competition over procurement of natural resources

## ECONOMY

- Expansion of the BOP (Base of the Economic Pyramid) layer
- Expansion of GDP and increased energy demand
- Rapid economic growth in emerging countries

## PEOPLE / SOCIETY

- Increased water and food demand due to population explosions
- Continued birthrate decline and aging population in developed countries
- Faster network speeds due to the evolution of information technology
- Accumulation of Big Data

## INFLUENCE OF FUTURE TRENDS

- Population increases centered around emerging countries and associated problems with energy, natural resources and food
- Changes in the relationship between individuals and society due to the evolution of information technology
- Further advancement of climate change (global warming) and other environmental issues

# Social Issues, MGC Group's Strengths and Business Areas to Focus On

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### SOCIAL ISSUES

#### (Environment)

- Controlling greenhouse gas emissions
- Securing alternative energy sources and resources

#### (Economy)

- Improving QOL (Quality of Life)
- Developing social infrastructure

#### (People / Society)

- Dealing with food and water crises
- Developing new information devices to support a ubiquitous society
- Effective utilization of Big Data

### MGC GROUP'S STRENGTHS

- Unique proprietary technologies
- Global marketing structure
- Development structure to meet customer needs
- Wide range of businesses
- Strong relationships with leading clients
- Production system consisting of multiple locations

## BUSINESS AREAS TO FOCUS ON

- Energy
- Information / Communications
- Mobility
- Medical / Food
- Infrastructure

# Philosophy for Being and New Group Vision

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## MGC Philosophy for Being

MGC contributes to societal growth and harmony by creating a wide range of value through chemistry.



## New Group Vision

Creating values to share with society

Thoroughly improve CSR performance based on our philosophy for being, and as our Group vision, clarify the path taken in the new mid-term management plan.

# What is “Creating values to share with society”?

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### ◆ What is a group vision?

In considering our business policy from a long-term perspective, it is the formulation of our Group vision in the shape of guidelines that clarify where MGC Group is headed. This vision expresses the essence of our philosophy for being, and is positioned as the higher concept of our new mid-term management plan.



### ◆ What is “Creating values to share with society”?

It's necessary to develop businesses that realize a rich society meeting the needs of the times. At the same time, if such a business is unprofitable, it will not be able to continue. The promotion of the business has the aim of the creation of value truly needed by society, including features, quality and price.

# 2021 – MGC Group Aspirations

- MGC Group continues to earn the firm confidence of the public through its CSR achievements.
- Become a truly profitable, research and development-oriented MGC group
- Join the Global Top 30 by exceeding sales of 1 trillion JPY

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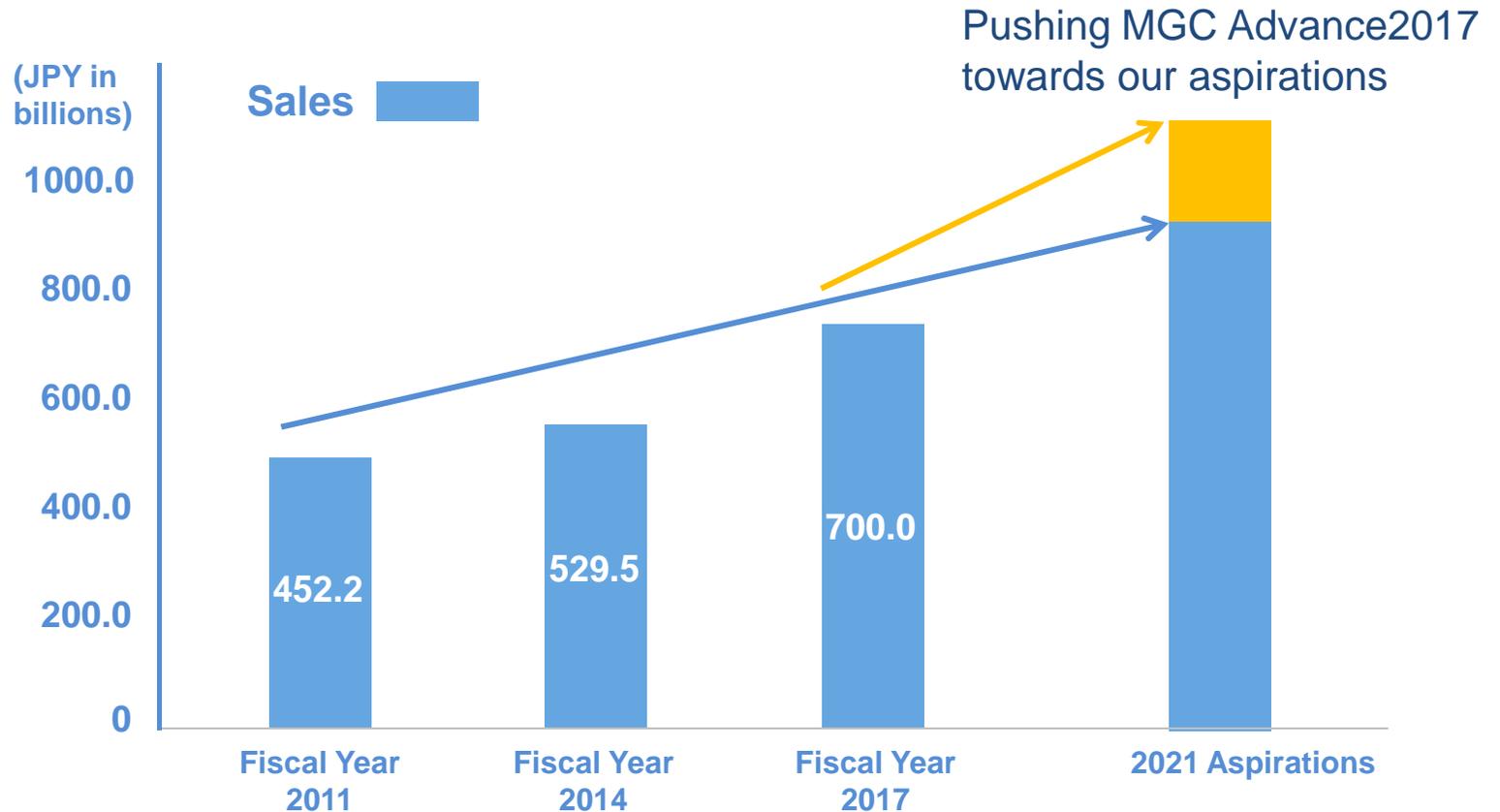
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# New Mid-Term Management Plan MGC Advance2017

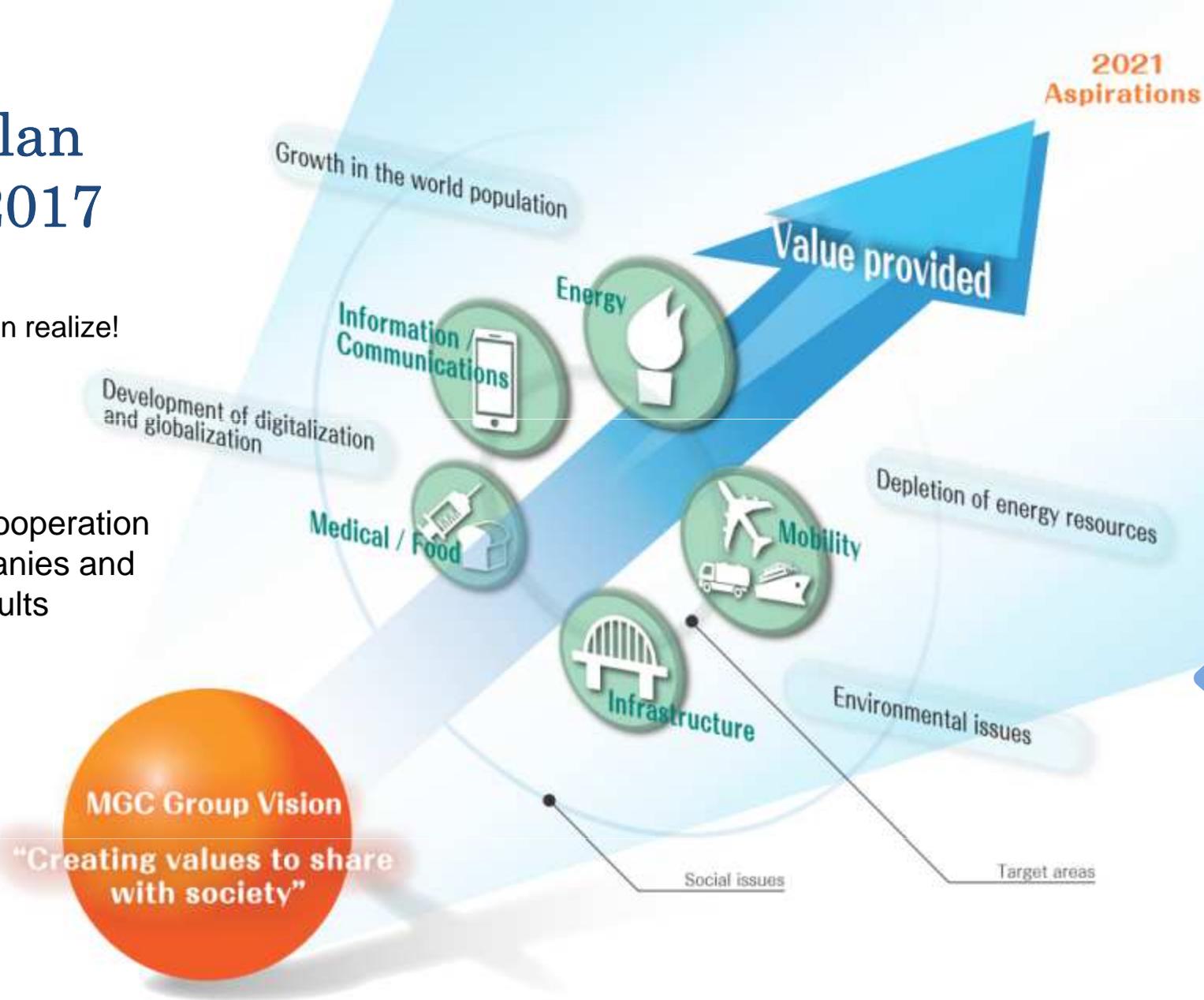
## ◆ Subtitle

Big dreams only MGC Group can realize!

## ◆ Period

April 2015 – March 2018

Aiming to further enhance cooperation between MGC Group companies and achieve more significant results



## MGC Advance2017 – Basic Strategy

Enhancing the profitability of existing businesses, especially core businesses

Restructuring underperforming businesses

Development and creating new businesses

Improving group-wide operational efficiency

Improving total enterprise quality in support of sustainable growth

# MGC Advance2017 – Basic Strategy

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## 3 .Business Plans by Segment P28

### 1 Enhancing the profitability of existing businesses, especially core businesses

Mainly invest management resources in core businesses to further enhance profitability.

### 2 Restructuring underperforming businesses

Explore exit strategies for underperforming businesses.

### 3 Development and creating new businesses

Create business in new areas meeting future market needs, in addition to surrounding areas of existing ones.

### 4 Improving group-wide operational efficiency

Maximize corporate value through group management action.

### 5 Improving total enterprise quality in support of sustainable growth

Achieve further improvement in quality that continuously enhances MGC Group's competitiveness.

# MGC Advance2017 Outline

## Numerical Targets

### Consolidated Targets

(Consolidated index)	Fiscal Year 2014 Results	Fiscal Year 2015 Forecast	Fiscal Year 2017 Plan
Sales(JPY in billions)	529.5	620.0	700.0
Operating Income (JPY in billions)	14.9	25.0	40.0
Ordinary Income (JPY in billions)	43.0	37.0	55.0
ROE(%)	12.9	7.5	≥9%

【 ASSUMED CONDITIONS】	Fiscal Year 2015	Fiscal Year 2017
Exchange Rate (JPY/USD)	115	115
Crude Oil (Dubai) (USD/bbl)	55	65
Methanol (USD/MT)	305	340

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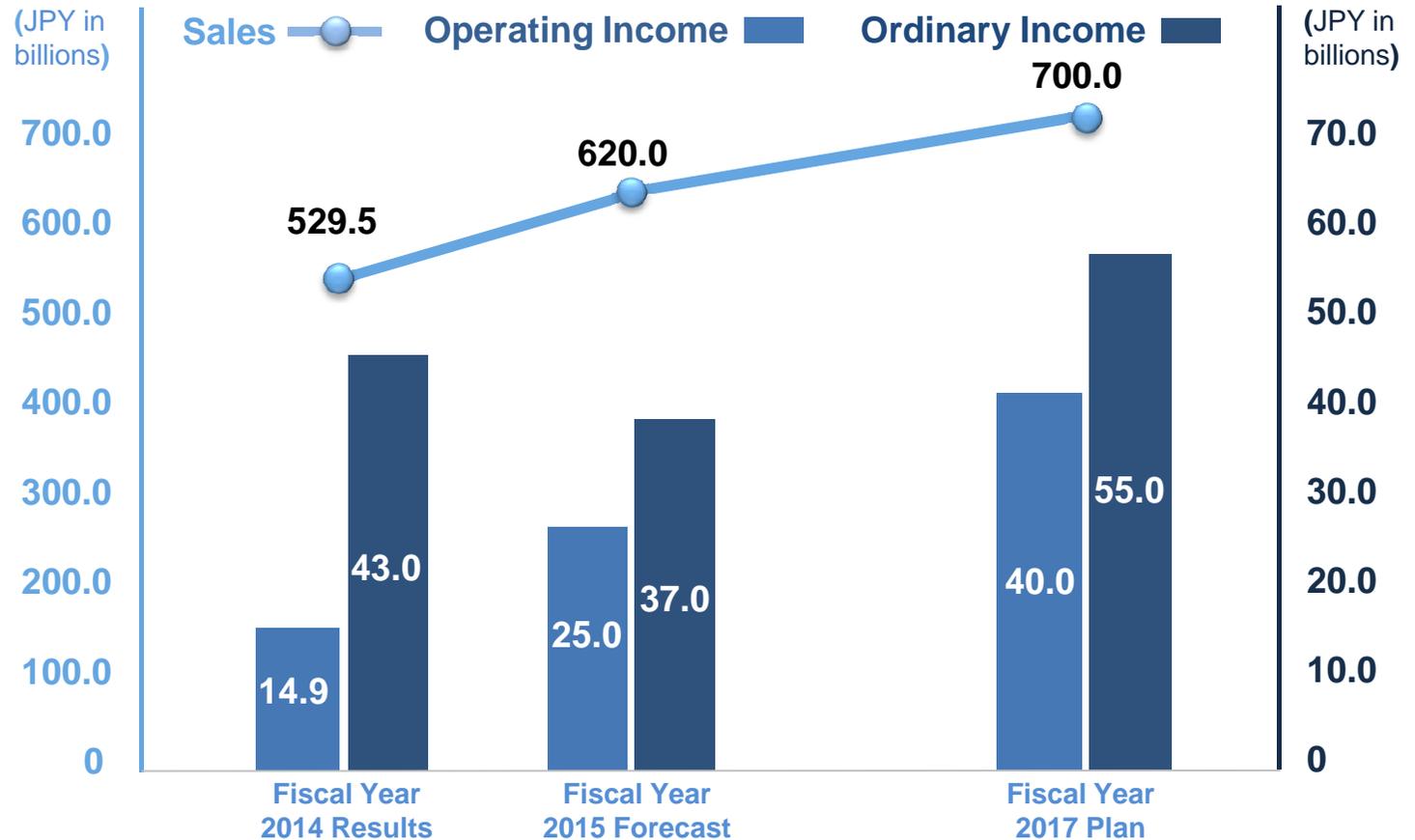
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# Ordinary Income Variation by Segment

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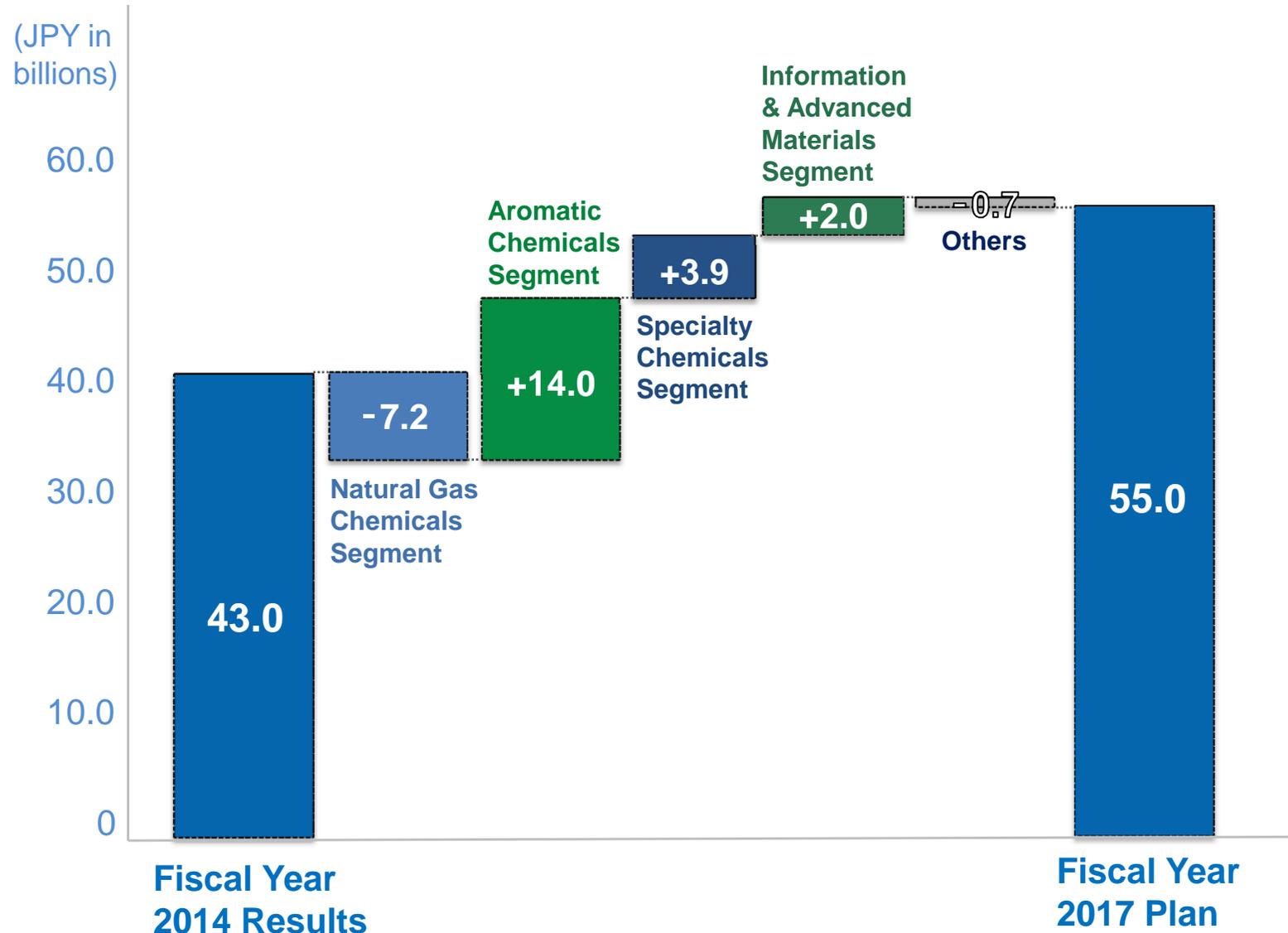
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# Investment Strategy

Preferentially allocate resources to businesses in target areas in accordance with enhancing profitability of existing businesses (focusing on core ones) as well as development and creating new businesses.

## Investment projects

Total investment of 140.0 JPY in billions (not including M&A)

- Trinidad and Tobago Project
- QOL Innovation Center Shirakawa Project Phase 1  
MGC Filsheet Co., Ltd. Shirakawa Plant Project  
Oxygen absorbers Ageless shirakawa Plant Project
- Increased investment in Canada shale gas LNG business



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# Return to Shareholders Policy

- MGC Group is focused on providing shareholder returns.
- Dividend amounts are determined by combining business performance-based and consecutive dividend-based approaches from a mid-term perspective
- Share buybacks carried out on a flexible basis while observing the market environment

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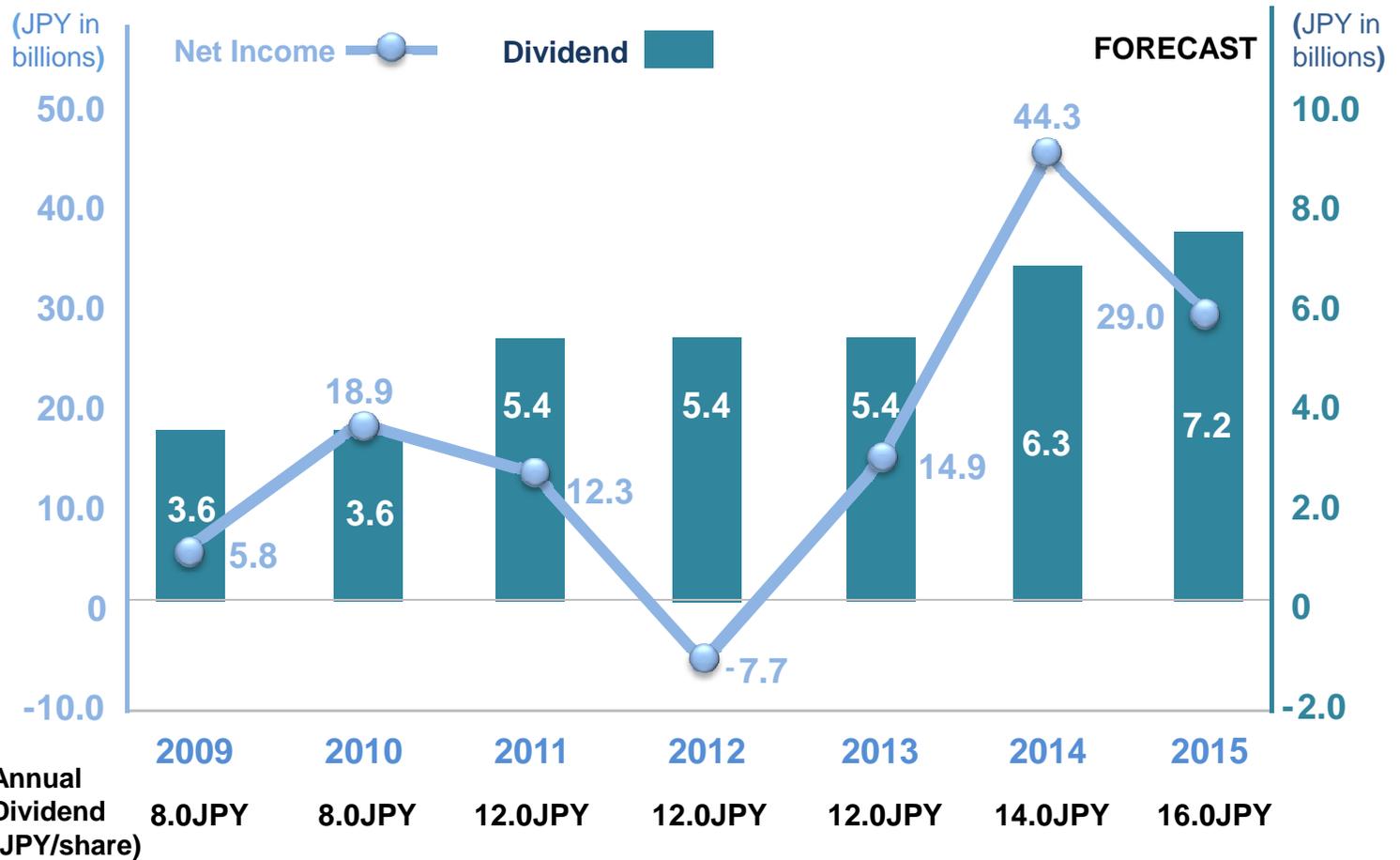
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## MGC Advance2017 Outline

### MGC Advance2017 – Basic Strategy 1/5

# Enhancing the profitability of existing businesses, especially core businesses

Mainly invest management resources in the eight core and two semi-core businesses to further enhance profitability.

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### Core Businesses

### Semi-Core Businesses

Natural Gas Chemicals Segment	Methanol Natural resources and energy	
Aromatic Chemicals Segment	MXDA / MX Nylon Foam (JSP) *	Aromatic aldehydes
Specialty Chemicals Segment	Hydrogen peroxide / electronic chemicals (EL chemicals) Polycarbonate / functional sheet film	Polyacetal
Information & Advanced Materials Segment	BT materials AGELESS	

\* Foam (JSP): A core business of the Group company that belong to the aromatic chemicals segment

# Restructuring underperforming businesses

In the future, businesses at risk of losses will continue to be monitored while work is done to enhance competitiveness – this includes restructuring business portfolios, relocating personnel and improving utility efficiency.

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# Development and creating new businesses

Speeding up the creation of new business meeting future market needs, in addition to creation and development within surrounding areas of existing businesses.

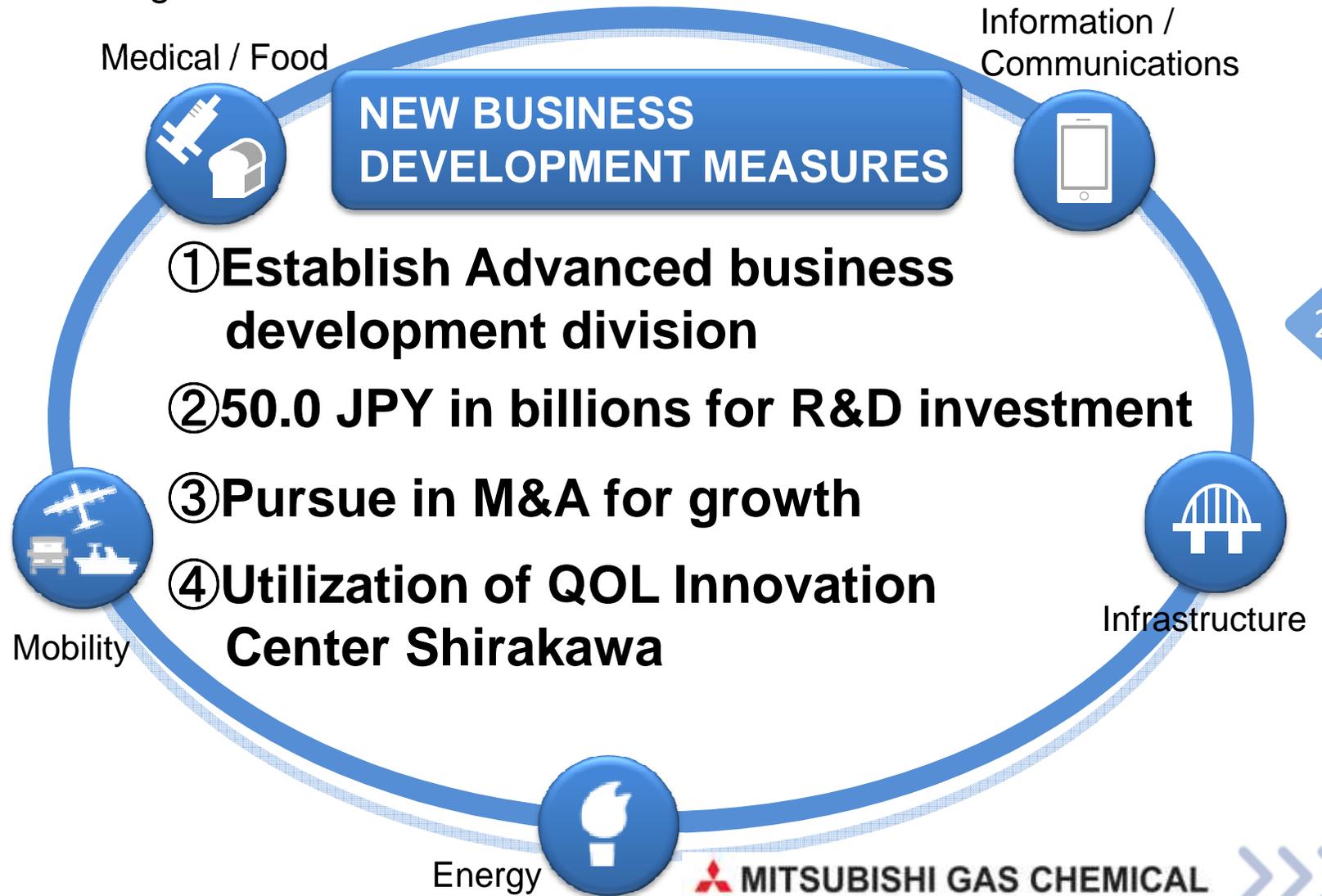
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# Improving group-wide operational efficiency

Pursue maximization of corporate value in terms of MGC Group / Team through global group management action.

Share and act on MGC management policies throughout all Group companies

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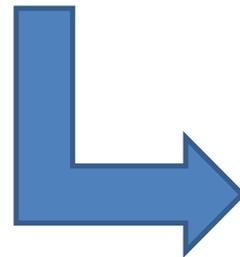
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Non-applicable: Non-consolidated subsidiaries, non-equity method affiliated company

## MGC Advance2017 Outline

MGC Advance2017 – Basic Strategy 4/5 Improving group-wide operational efficiency

# Make business operations more efficient via new management unit

The introduction of a new Business Management Unit (BMU) brings us closer to building and acting on strategy in our preferred direction across the Group.

### 1. MGC Will2014 Review

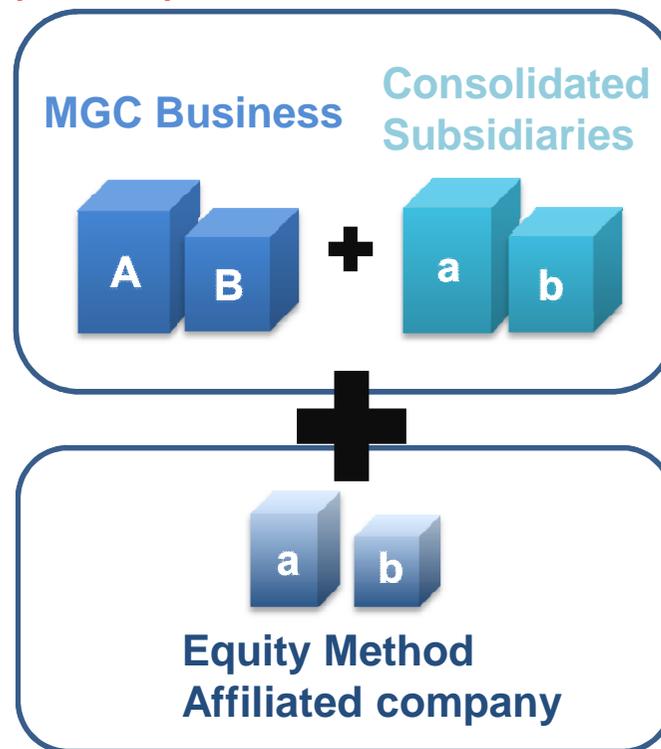
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### 2. MGC Advance2017 Outline

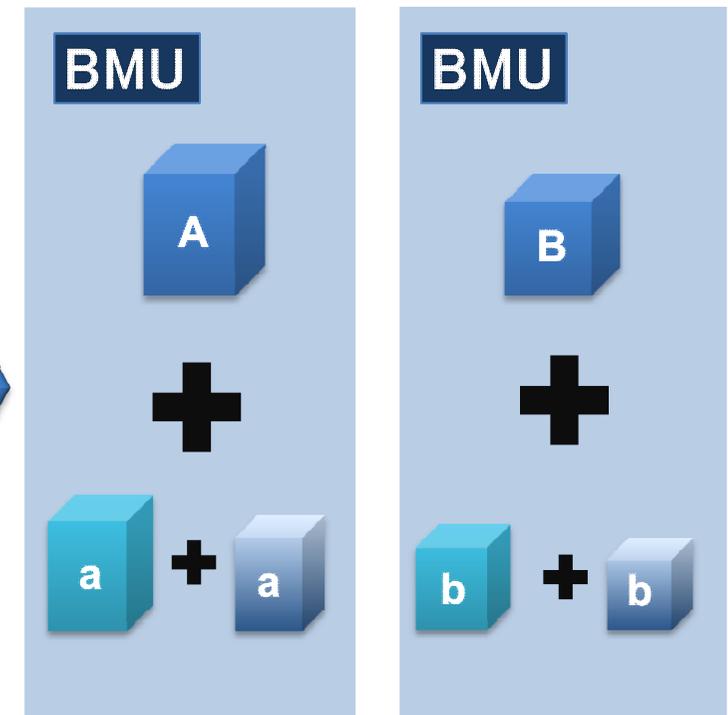
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### 3. Business Plans by Segment P28

(Current)



(New)



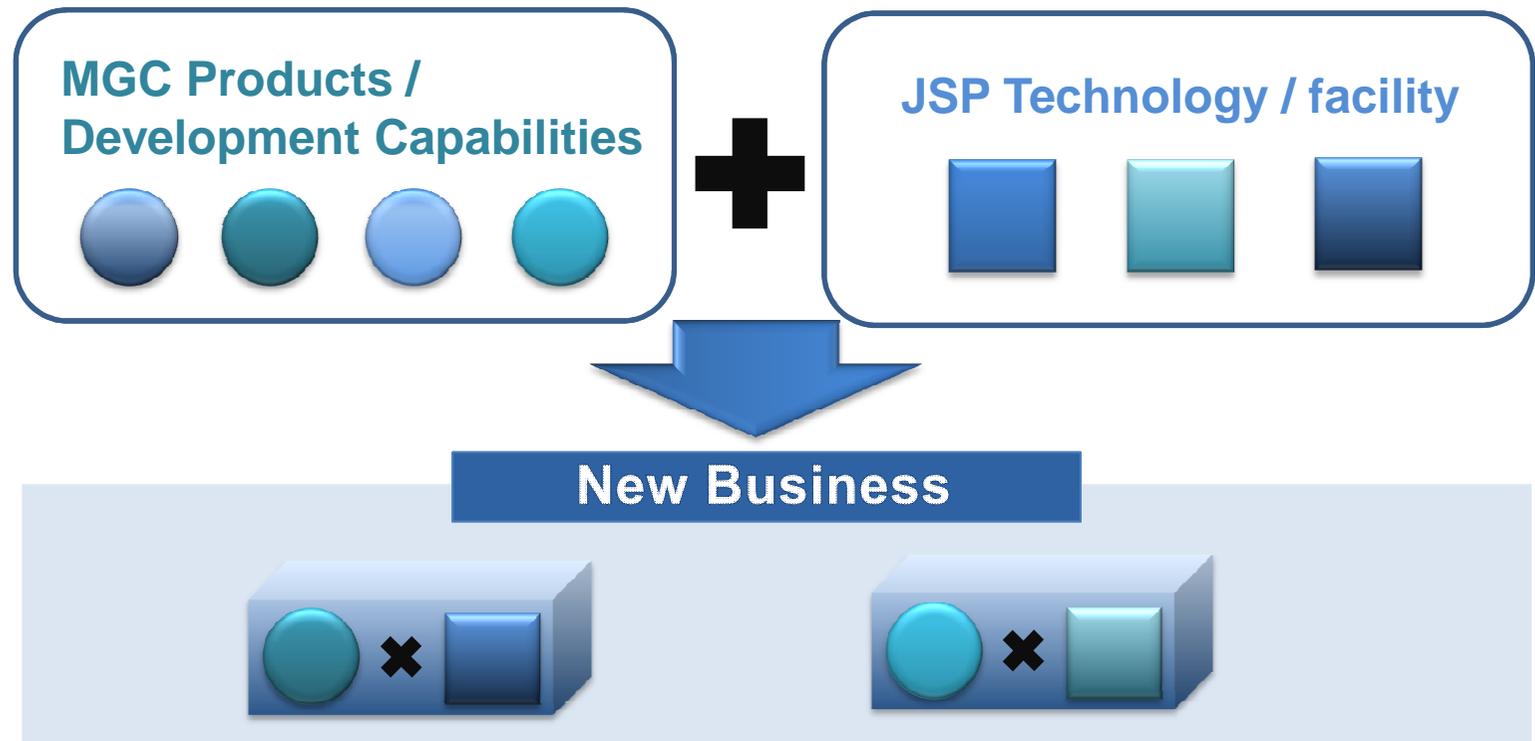
## MGC Advance2017 Outline

MGC Advance2017 – Basic Strategy 4/5 Improving group-wide operational efficiency

# Group synergies from JSP subsidiary consolidation

With MGC's unique products and development capabilities, and JSP's proprietary technology and facility, new business can be created and the Group's corporate value improved.

**A Synergy Promotion Committee will be established between MGC and JSP with the aim of creating businesses having a certain scale of sales / income.**



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### 3. Business Plans by Segment P28

# Improving total enterprise quality in support of sustainable growth

With the aim of creating values to share with society, we will pursue the improvement of quality to support MGC Group's competitiveness on an ongoing basis.

## MAIN THEMES

- ① **Minimizing losses from safe and stable operations**
- ② **Strengthening of internal control and compliance systems**
- ③ **Securing and training human resources to for the future of the Group**
- ④ **Realizing a healthy and strong financial position**



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### 3. Business Plans by Segment P28

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1. Previous Mid-Term Management Plan  
MGC Will2014 Review
2. New Mid-Term Management Plan  
MGC Advance2017 Outline
3. Business Plans by Segment

# Natural Gas Chemicals Segment Main Business Policies

Develop underlying business infrastructure and prepare for 2021 Aspirations.

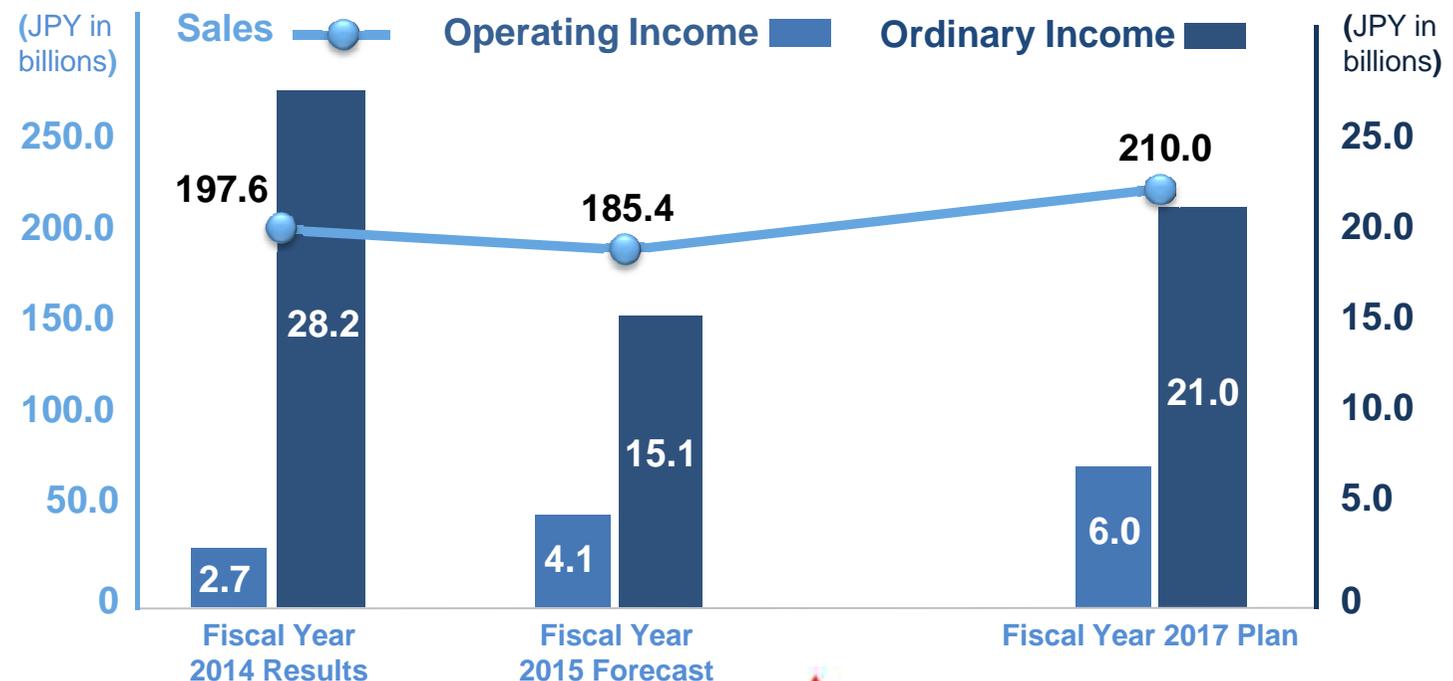
## METHANOL

- Promotion Trinidad and Tobago projects (scheduled to be operational in 2018)
- Reinforcement of business infrastructure of existing joint-ventures (Saudi Arabia, Venezuela and Brunei)



## NATURAL RESOURCES & ENERGY

- Promotion Canada LNG project (scheduled to be operational in 2019)
- Plans to construct a geothermal power plant in Yuzawa, Akita Prefecture, Japan with J-Power and Mitsubishi Material, which will be a large scale plant to generate over 40,000 kW.



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### 3. Business Plans by Segment

# Aromatic Chemicals Segment

## Main Business Policies

Complete structural reform and enhance profitability of core and semi-core businesses.



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### MXDA / MX NYLON

- Expand marketing toward paint and food packaging materials
- Set up structure for global sales, technical services and product development. Expand sales areas. (Eastern Europe, Oceania, Central / South America)

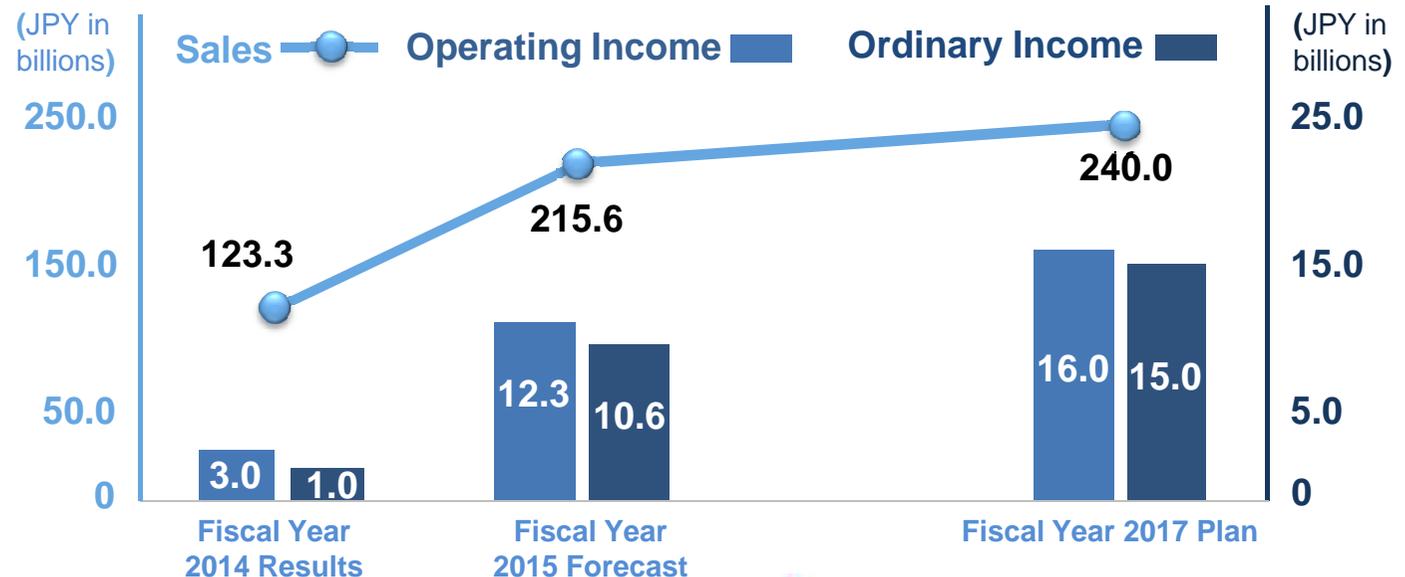
### AROMATIC ALDEHYDES

- Stable supply to important customers
- Realize commercialization of new derivatives

### FOAM (JSP) \*

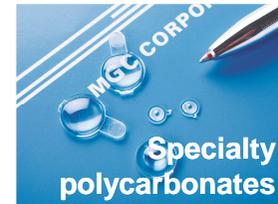
\* A core business of the Group company that belong to the aromatic chemicals segment

- Sell high value added products made using JSP's unique technologies.
- Expansion of sites in North America, South America, Europe and Asia, and strengthening the foundation in these areas.



### 3. Business Plans by Segment

# Specialty Chemicals Segment Main Business Policies



Ensure a return on investment thus far.

## HYDROGEN PEROXIDE / EL CHEMICALS

- Hydrogen Peroxide: Maintaining top market share domestically by supplying highest quality goods and securing stable supply for usage in both industrial chemicals and electronic materials.
- EL chemicals: Focus mainly on semiconductor market, especially overseas. Increase shares in existing customers and acquire new clients.

## POLYCARBONATE / FUNCTIONAL SHEET FILM

- Shift from general-purpose products to high value-added ones such as specialty polycarbonates and functional sheet films
- Improve income from overseas subsidiaries

## POLYACETAL

- Develop and introduce new grades for the automotive and office automation markets, thus expanding sales

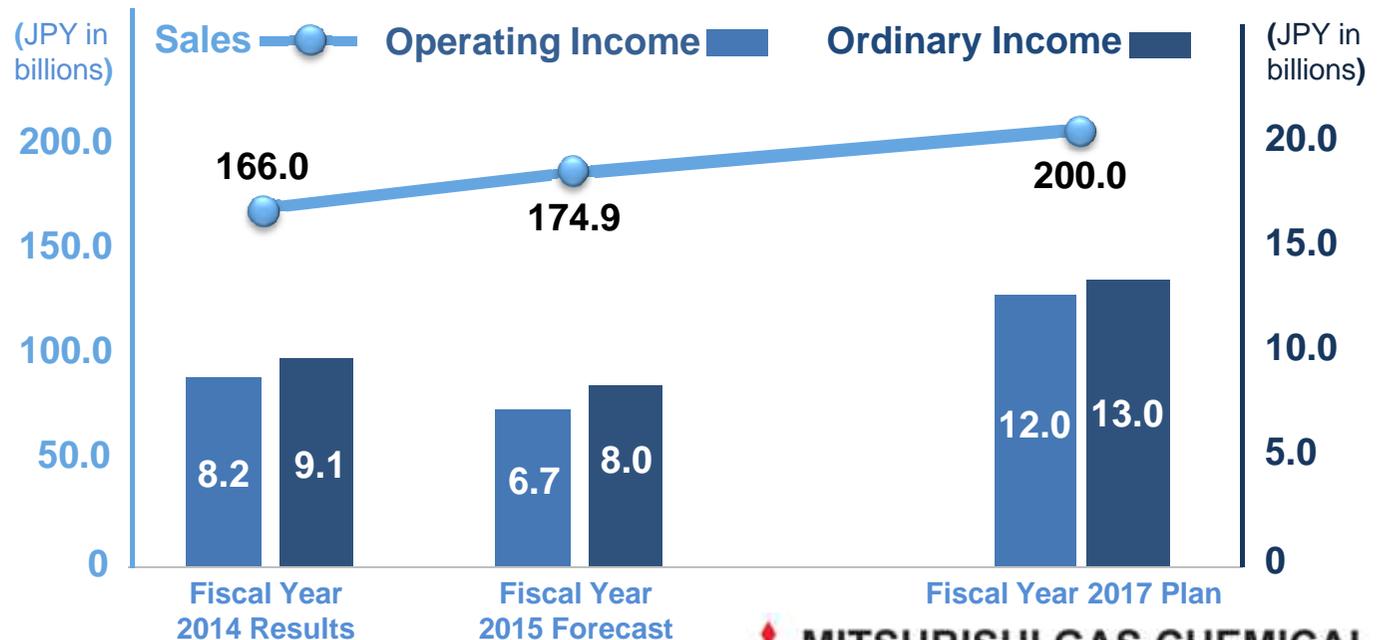
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### 3. Business Plans by Segment



# Information & Advanced Materials Segment Main Business Policies

Aim for expansion of sales areas and applications moving from existing to new markets



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## 2. MGC Advance2017 Outline

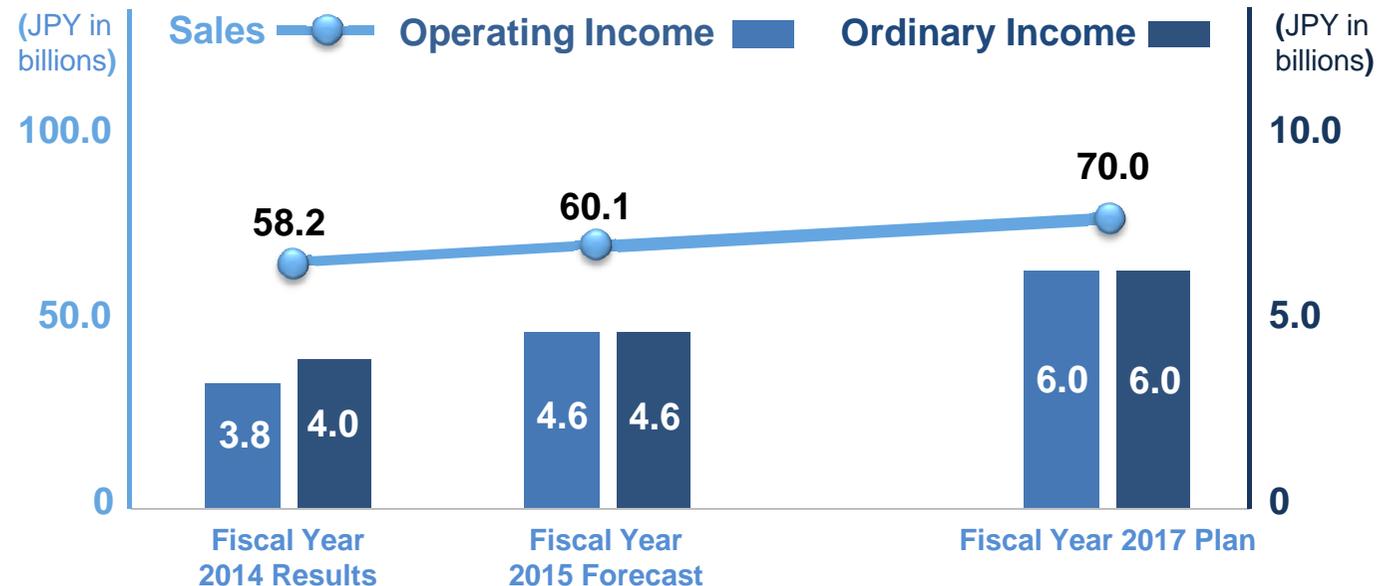
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## BT MATERIALS

- Launch new products in the advanced semiconductor market for mobile systems
- Respond to diverse needs in the general-purpose semiconductor area in order to expand sales

## AGELESS

- Accelerate development of overseas markets.
- Increase market development of medical / industrial areas in addition to food



## 3. Business Plans by Segment



## MGC Advance2017 – LOGO DESIGN CONCEPT

- This is the stylization of a fast runner with a vector moving forward as a pictogram that symbolizes “Advance”. Also, the multiple runners running alongside each other symbolizes that not only MGC but all the Group companies are in step – aligned in progressing forward.
- The red mark attached to the initial A of Advance expresses the passion and sweat (effort) for our mid-term management plan.

The logo mark design communicates the meaning of our new mid-term management plan in a visually easy-to-understand way. It is our hope that it will help evoke peoples' interest, both inside and outside the Group, and deepen their understanding of the plan.

# INQUIRIES

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## NOTE ON OUTLOOK

The content of this material is based on assumptions. The content is not designed to make commitments or guarantees in regards to planned figures or measures in the future.



【APPENDIX】

# Examples of Business Area to Focus On in the Future

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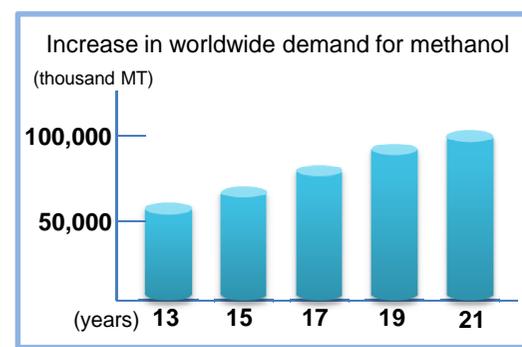
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3. Business Plans by Segment P28

	Business Area				
	Energy	Information / Communications	Mobility	Medical / Food	Infra-structure
New Businesses (Business Proposals)	Fuels with low environmental impact  Chemical-based storage	Optical materials for next-generation information devices  Raw material for under-layer used for circuit patterning  Transparent polyimides	New structural materials  Next-generation batteries	Extended food preservation times; new food distribution technologies  Oxygen-absorbing resin	Degradation diagnostic agents  Rapid internal diagnostic technologies
Existing Businesses	Methanol  Shale gas LNG  Geothermal	Polycarbonate  EL chemicals  BT materials	MX Nylon  Polyacetal  Foam (JSP)	MXDA  AGELESS	1,3-BAC

# 【APPENDIX】 Energy Business Area

**Participate in projects in Japan and abroad, achieving stable procurement of raw fuel and materials.**



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Implementation is underway for a project in Trinidad and Tobago, establishing a new site for the production of methanol, which is seeing increased demand worldwide. Participation in Canada in shale gas / LNG projects is securing sources of fuel and materials to support our core business operations. Work on geothermal development in Japan is contributing to the supply of electricity to society



## Creating economic and social value through the combination of chemistry with renewable energy

Aim for the development of forever-lasting renewable energy sources – these sources are being introduced and promoted in Japan and around the world at an increasing rate. In conjunction with this, create value through taking on the challenge of working out how to store surplus energy.

### Business Proposals

- Fuels with low environmental impact based on renewable energy
- Optimized energy supply through chemical-based storage of surplus secondary energy

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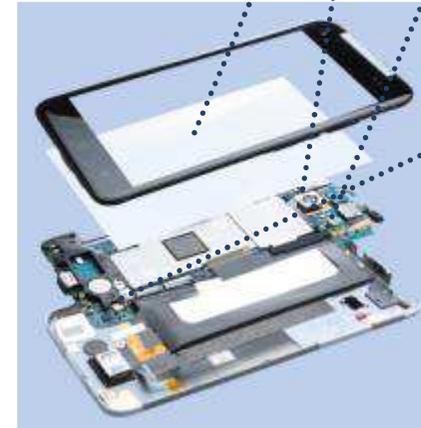
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3. Business Plans by Segment P28

# 【APPENDIX】 Information / Communications Business Area

## Expand income in leading markets through products based on our proprietary technology

Our recently launched Thailand plant manufactures BT materials for semiconductor packages. These BT materials, along with the EL chemicals essential to semiconductor manufacturing, are one of the best in the world. Our accelerating development of polycarbonate, increasingly used in mobile phones, and transparent polyimide film, which has high promise for use in next-generation tablets, in leading markets, is contributing to the development of these fields.



● Polycarbonate is increasingly being used in smartphone camera lenses, light guide plates, and front panels.

● BT materials are now regularly used as semiconductor packaging materials

● High purity EL chemicals function well as cleaning agents when manufacturing electronic devices

## Contributing to the development of a network society through the combination of chemistry with new information devices

Through the power of chemistry supporting the development of information technology, aim to contribute to state-of-the-art wearable devices and other new products at the forefront of the era. Contribute to the development of an information society.

### Business Proposals

- Optical materials for next-generation information devices
- Raw material for under-layer used for circuit patterning
- Transparent polyimides with high heat resistance



● Neopulim® – can be folded, curved or made to take on any shape. Opening up new markets for next generation tablet and smartphone circuit boards



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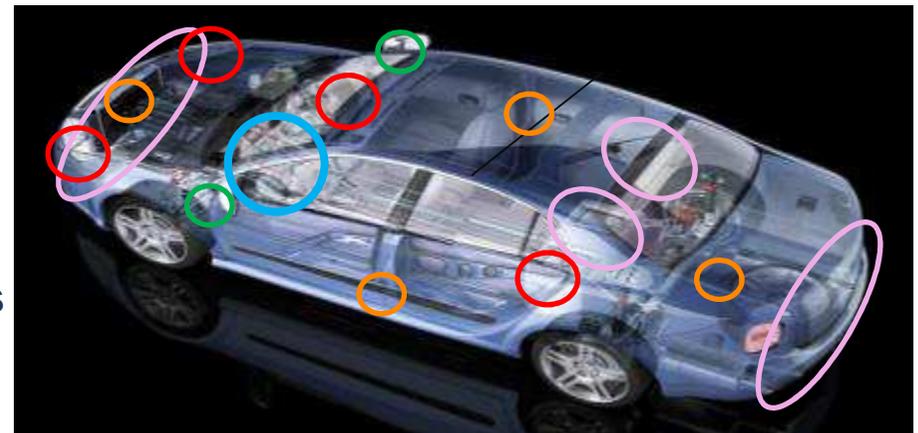
【APPENDIX】

# Mobility Business Area

## Enhance expansion into mobility using high-performance resins

Focus on the development of polycarbonate, polyacetal, MX Nylon and specialty polycarbonates used in automotive interior / exterior and mechanical parts, as well as the foam business including bumper applications. Promote further adoption of these materials in the mobility field, contributing to improved fuel economy, reduced environmental impact and advanced safety technologies taking our aging society into consideration

- Polycarbonate
- Polyacetal
- MX Nylon
- Specialty polycarbonates
- Foam (JSP)



### Realizing a valuable society through the combination of chemistry with safety, comfort and low environmental impact

Using new materials created by the power of chemistry, create added value that goes beyond the framework of movement, and aim to contribute to reducing environmental impact on a global scale. Contribute to the realization of a sustainable society.

#### Business Proposals

- Propose new structural materials, including organic and inorganic hybrid materials
- Next-generation battery materials

## 【APPENDIX】

# Medical and Food Business Area

**Developing medical and food markets with superior deoxidization / gas barrier performance.**

In addition to our top Ageless® brand , preservation materials and MX Nylon for single / multi-layer beverage bottles, our OXY-CAPT™ injection solution containers, which use newly developed oxygen-absorbing resin, are being used in medical applications. With its deoxidizing and gas barrier performance, expectations are for progress in further developing the medical and food markets.



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### 3 .Business Plans by Segment P28

## Overcoming challenges in food, medical and pharmaceutical fields through the combination of chemistry and revolutionary preservation techniques

This technology aims to preserve the quality of foods and pharmaceuticals. Aim to provide a total solution encompassing processing, packaging, storage and distribution.

### Business Proposals

- Provide technology that extend preservation terms and enables new forms of food distribution
- Product groups that make carrying and distributing easy, while simultaneously ensuring safety
- OXY - CAPT™



## 【APPENDIX】

# Infrastructure Business Area

**Expand marketing of these products for use in anticorrosive paint, pipe and bridge surface preservation and extending their lives.**

MXDA, with its excellent chemical resistance, and 1,3-BAC, with its added weather resistance, boast top global market share.

Both products are in strong demand for use in curing agents in epoxy anticorrosive paint, which is typically used in tanks, factory piping, on bridges and ships. The Both products will be utilized to help maintain and manage deteriorating societal infrastructure.



### **Develop total support through the combination of chemistry and infrastructure development technology**

Aim to develop technological support necessary to analyze trouble spots in aging buildings, and increasing structure strength. Also provide not only symptomatic treatment, but also advanced preventative solutions and thus having long-term economic effect.

#### **Business Proposals**

- Degradation diagnostic agents
- Provide rapid internal diagnostic technologies
- Provide ways to enable routine monitoring

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