

MGC advances to the next stage of growth after moving forward with restructuring of underperforming businesses

## MGC Advance2020

A brighter future from bigger dreams!



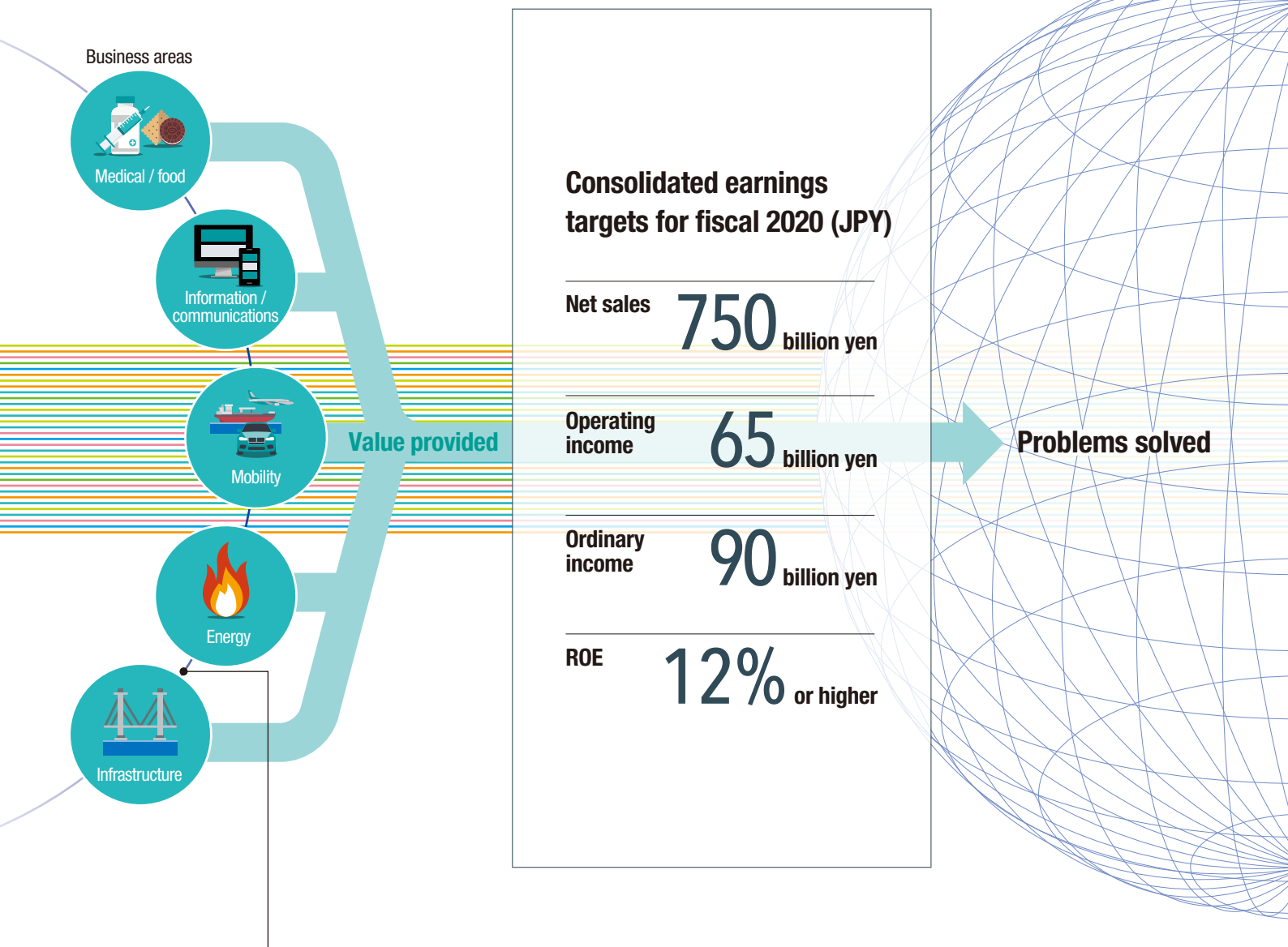
### Megatrends and important social issues

The business environment in which we operate is growing increasingly complex, bringing to the fore many issues that need resolving. These include global warming and the biodiversity crisis in the natural environment, demographic shifts, economic growth in emerging countries, and

technological innovations.

Aiming for further growth, we are identifying the business opportunities and risks these changes represent while mobilizing our expertise to help resolve social issues, and help realize a sustainable society.

The period from April 2018 to March 2021



## Five target fields of business

We harness the power of chemicals and the individual efforts of each person in the Group to create products and technologies that are needed by and provide value to society, to help resolve social issues, and help realize a sustainable society.

We continue to develop our wide range of diverse products in the five business fields where we can make the most profound contribution. While pursuing profit, our greater objective is to create social and environmental value that helps realize a safer and more secure society.

## Five strategies for achieving the fundamental objectives

### Fundamental Objectives

#### Enhancing the corporate value of the MGC Group

The MGC Group will further enhance its corporate value through its management strategies and by expanding its existing businesses and advancing into new business areas while constantly pursuing safety, efficiency, productivity, and profitability.

#### Deepening the trust of MGC Group stakeholders

The MGC Group will seek to deepen the trust of all stakeholders in its operations and fulfill its corporate social responsibility as we realize sustainable growth.

### Five Strategies

- 1 Strengthening the earning power of existing businesses with a focus on the core businesses**
- 2 Creating and developing new businesses**
- 3 Implementing investment strategies to form an optimal business portfolio**
- 4 Promoting unified MGC Group management**
- 5 Improving total enterprise quality to support sustainable growth**

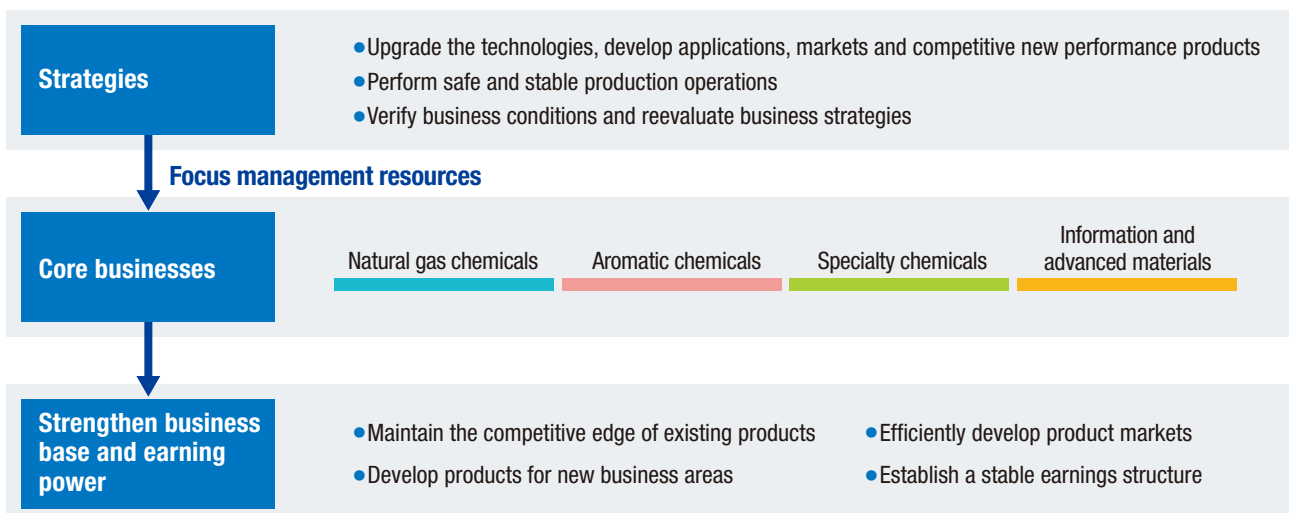
# Strategy 1 Strengthening the earning power of existing businesses with a focus on the core businesses

Focus management resources on the core businesses that are the company’s strengths and enhance the profitability of existing businesses.

- We will enhance the profitability of existing businesses by improving our technology, maintaining our competitive advantage, and efficiently developing markets for our products.
- For our existing products, we will develop new applications and markets while also developing applications in new business areas.
- We will conduct safe and stable production operations to enhance our profitability and strengthen our business base.
- We will work to expand and strengthen our business base, through solid execution of our Trinidad and Tobago project, the smooth launch of our super-pure hydrogen peroxide plants in North America, and by boosting our capacity in special polycarbonate resins (2019), as well as considering domestic plant expansion and plans for new plants (2022) for meta-xylene diamine (MXDA).

## Examples of competitive performance products

■ Methanol derivatives	■ MXDA/MX-Nylon	■ Electronic chemicals	■ BT materials
■ Life science products	■ Aromatic aldehydes	■ High-performance polycarbonates	■ Oxygen absorbers



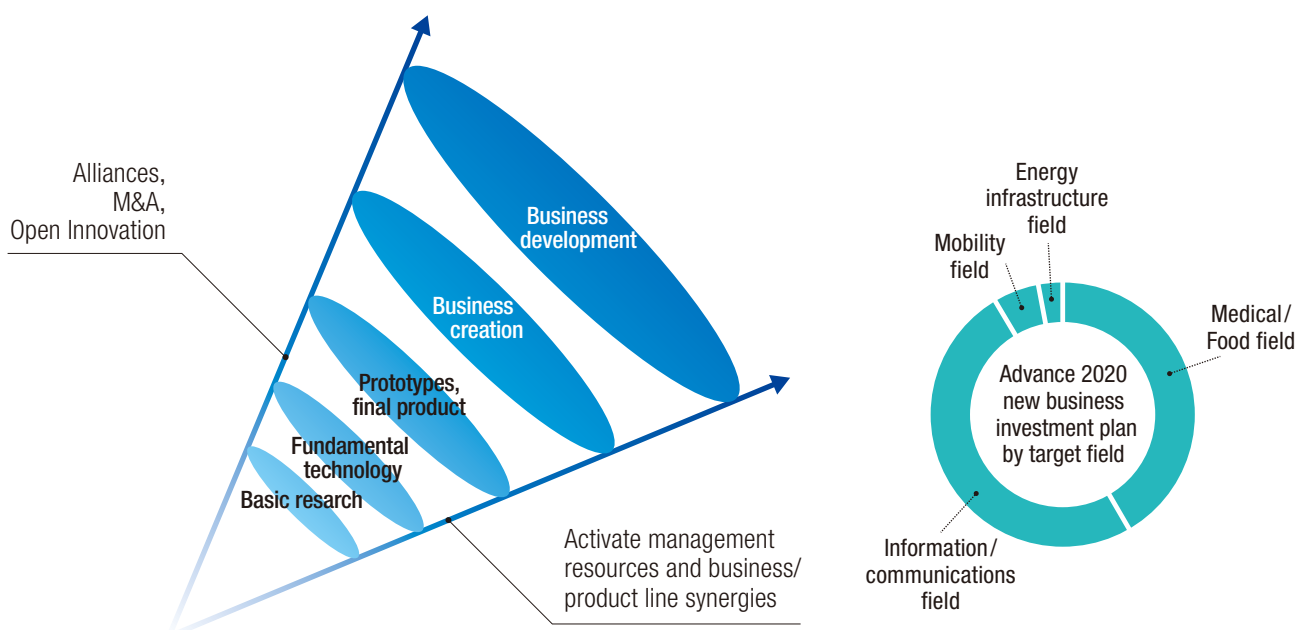
## Five strategies for achieving the fundamental objectives

### Strategy 2 **Creating and developing new businesses**

The MGC Group will ensure it continues flourishing by actively developing new technologies and products and creating and developing new businesses.

Specifically, we will aggressively invest in the fields of medical and food, information and communications, and mobility.

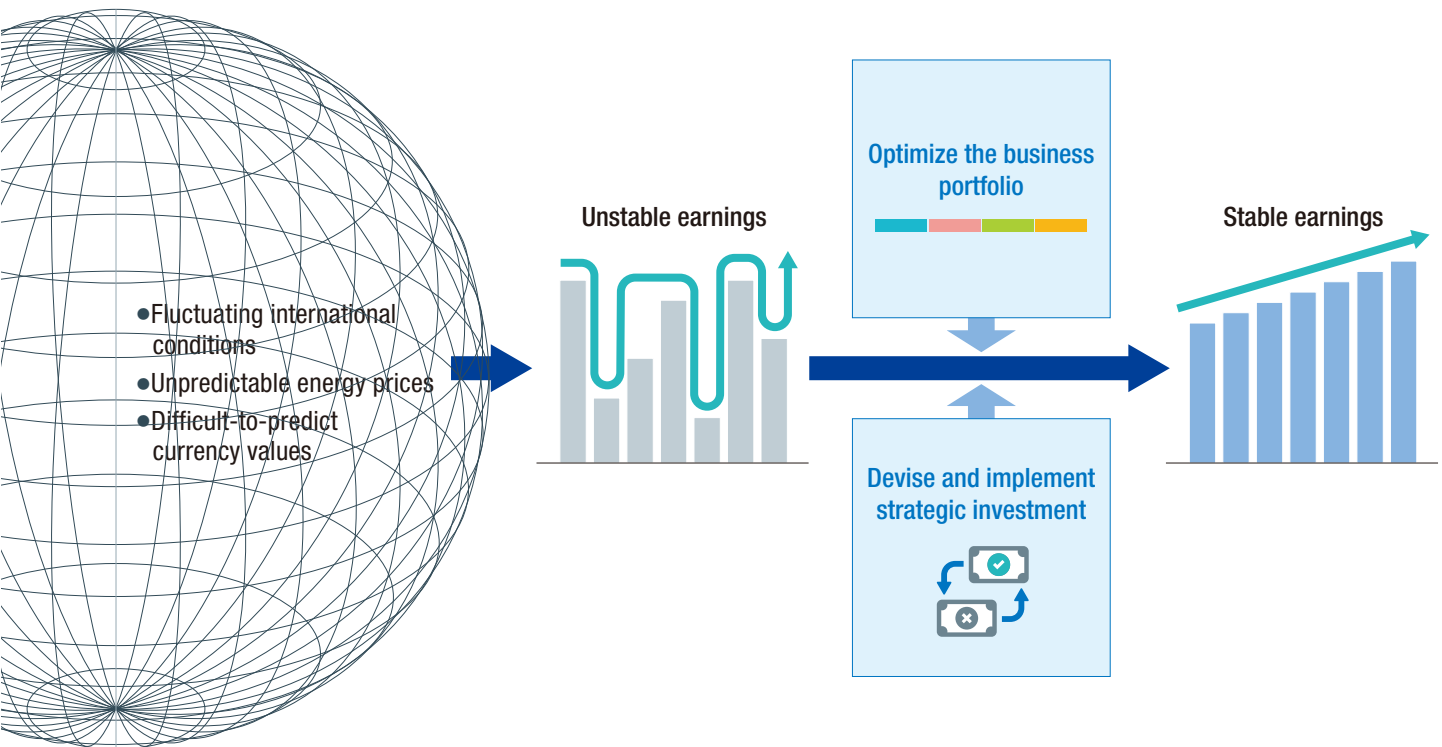
- We will develop and launch new technologies and products by increasing our sensitivity to market changes influenced by megatrends and to the speed of those changes. We will also identify specific target markets and seek to launch products in a timely manner to ensure maximum success.
- We will generate new business by incorporating new management approaches, such as partnerships and M&A, and by actively applying our management resources.
- We are focusing on creating and developing new businesses in antibody drugs and bioproducts, medical packaging materials, factory-produced vegetables, Neopulim, semiconductor-related materials (including 5G-compatible materials, semiconductor underlayer films, etc.), solid electrolytes and CFRP curing agents.



## Strategy 3 Implementing investment strategies to form an optimal business portfolio

We will devise and implement an investment strategy for forming an optimal business portfolio to establish a stable earnings structure for the Group.

- We will devise and implement an investment strategy that diversifies revenue sources by constantly generating new technologies, products, and businesses, and that supports a balance of commodity, high-performance, specialty, and new products within the MGC Group.
- We will formulate investment strategies that take into account how megatrends are changing the markets for our products and how quickly the markets are changing. Investments will be geared to growth with the aim of enhancing our corporate value.

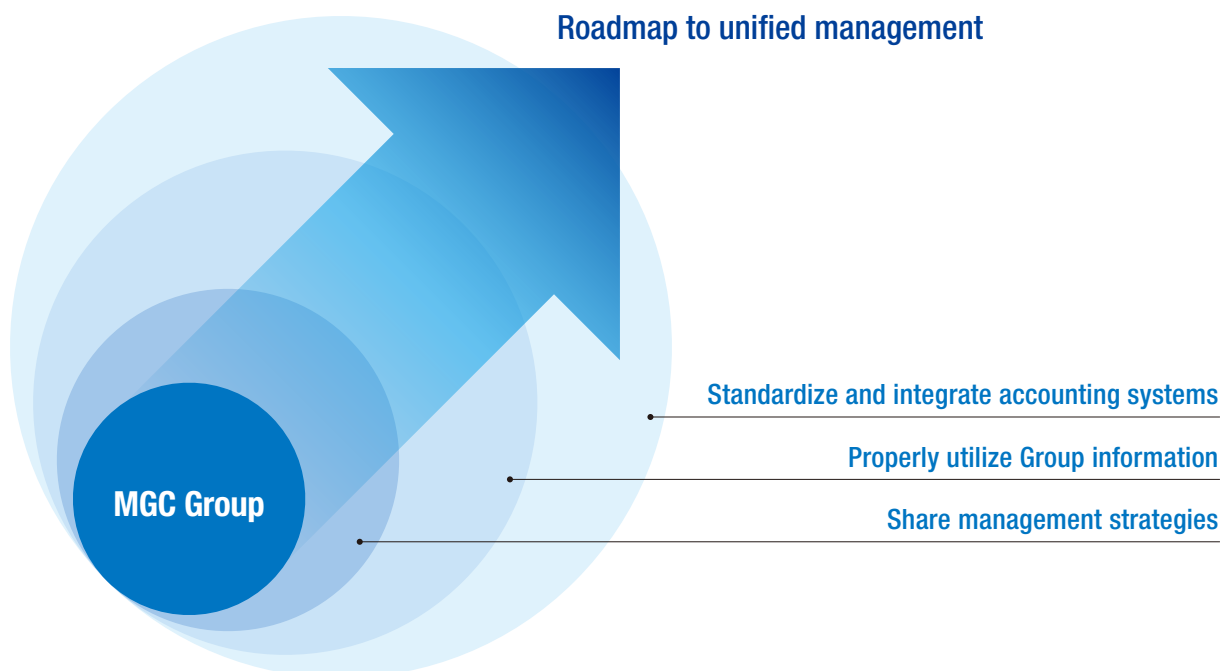


Five strategies for achieving the fundamental objectives

## Strategy **4** Promoting unified MGC Group management

We will share management strategies throughout our organization and conduct daily operations as a united group of companies to enhance the overall corporate value of the MGC Group.

- We will accurately determine Group information and continue striving to improve the efficiency of our Group management by introducing business management units (BMU) to facilitate standardizing and integrating the three trade houses of the MGC Group as well as sharing and unifying the accounting systems within the Group.
- We will make our investment management methods more sophisticated from the Group perspective, including formulating an accurate performance evaluation system capable of appraising all of the various investment activities of the Group.



## Strategy **5** Improving total enterprise quality to support sustainable growth

We will constantly improve the qualities of management resources, including personnel, capital, technology, information, brand, and intellectual assets, and manage and apply these resources effectively.

- We will raise the level of our awareness and culture of safety in our operations and deepen its application throughout the Group.
- We will strive to operate an effective corporate governance system that we will continually reinforce.
- We will develop human resources.
- We will practice compliance while readying and strengthening systems for responding to any manner of risk.
- We will cultivate research and development capabilities that encourage innovation.
- We will improve the efficiency of our information systems.





# Five target fields of business: examples of initiatives

## Medical / food

### Antibody drugs

#### Drugs that target only antigens, with few side effects and exceptional safety

Mobilizing our expertise in animal cell culture technology and manufacturing process development, we handle all processes from initial-stage development of drug substances for antibody pharmaceuticals to their manufacture, contributing to high-quality, reliable treatments.



### OXYCAPT

#### Plastic syringes and vials that block both oxygen and water vapor

OXYCAPT is the only plastic syringe that provides a glass-like oxygen barrier. With light weight and low inorganic extractables compared to glass, these medical syringes and vials also eliminate the dangers associated with glass breaking.



### BioPQQ / Elion™ SA<sup>\*1</sup>

#### Food compounds that benefit human health

We offer a variety of food compounds created with biotechnology. These include functional ingredients such as pyrroloquinoline quinone (PQQ) with anticipated brain health benefits, S-adenosylmethionine (SAMe), and spermidine (SPD), and functional dry yeast containing yeast culture.

<sup>\*1</sup> Elion™ SA: S-adenosylmethionine-containing yeast



### Oxygen absorbers / MX-Nylon

#### Functional materials that absorb / block oxygen

Oxygen absorber, AGELESS and MX-Nylon, an oxygen blocker, prevent foods and pharmaceuticals from deterioration caused by oxidation and are beneficial in maintaining quality and reducing product loss.

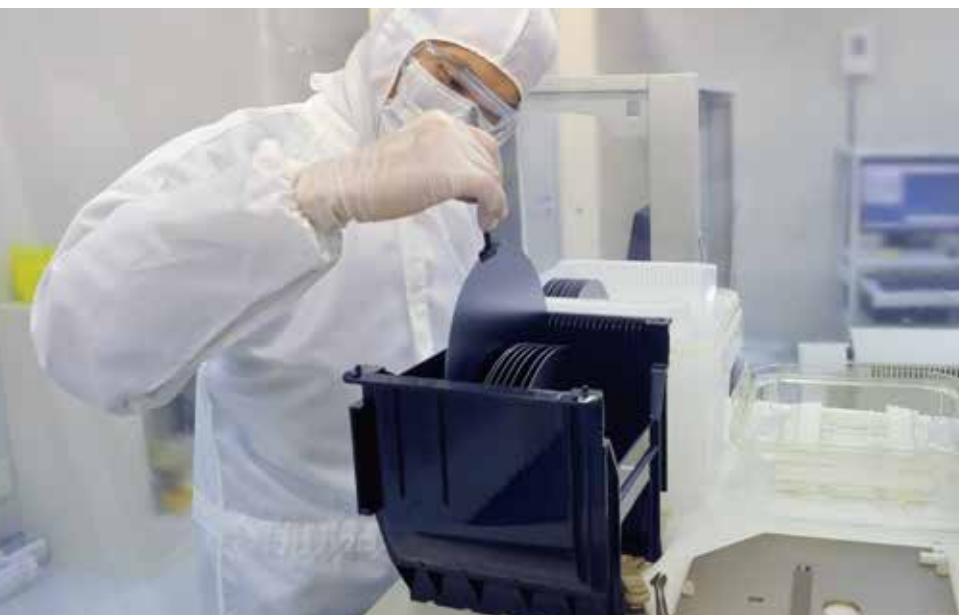
# Information / communications



## Neopulim (Transparent polyimide resin)

### Flexible, transparent resin film and varnish

Thin, light, and flexible, Neopulim offers high heat resistance and excellent transparency. As an alternative to glass substrates, Neopulim resin films and varnishes aid the production of organic EL displays.



## lupizeta EP (Special polycarbonate)

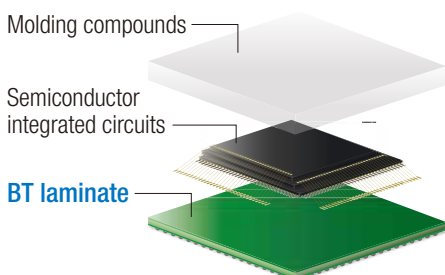
### Material enabling smaller, higher resolution mobile cameras

Used in camera lenses for mobile devices, lupizeta offers optical properties such as a high refractive index and low birefringence. Applications are expected to expand to on-board automotive cameras, surveillance cameras, and other devices.

## Chemicals for the electronics industry

### Electronics innovations made possible with high-purity chemical agents

Our functional chemicals include ultra-pure hydrogen peroxide and ammonium hydroxide used in cleaning semiconductor devices as well as in the manufacturing of electronics such as liquid crystal displays and printed circuit boards. These chemical agents support the global electronics industry and contribute to technological innovations.



## BT materials

### Semiconductor packaging materials supporting electronic device innovations

MGC was the first supplier of these substrate materials in the world. Offering both high heat resistance and excellent electrical properties, they contribute to making mobile devices, automobiles, and home electronics smaller, thinner, lighter, higher performing, and more energy efficient.

## Five target fields of business: examples of initiatives

### Polycarbonate / Polyacetal

#### Engineering plastics with superior rigidity and impact resistance

Because of its high impact resistance and transparency, polycarbonate is used in headlamps and door handles, while polyacetal, which is resistant to wear, abrasion, and chemicals, is used in fuel pumps, interior parts, and other components. Together, these engineering plastics contribute to improved fuel efficiency, enhanced workability, and better design.

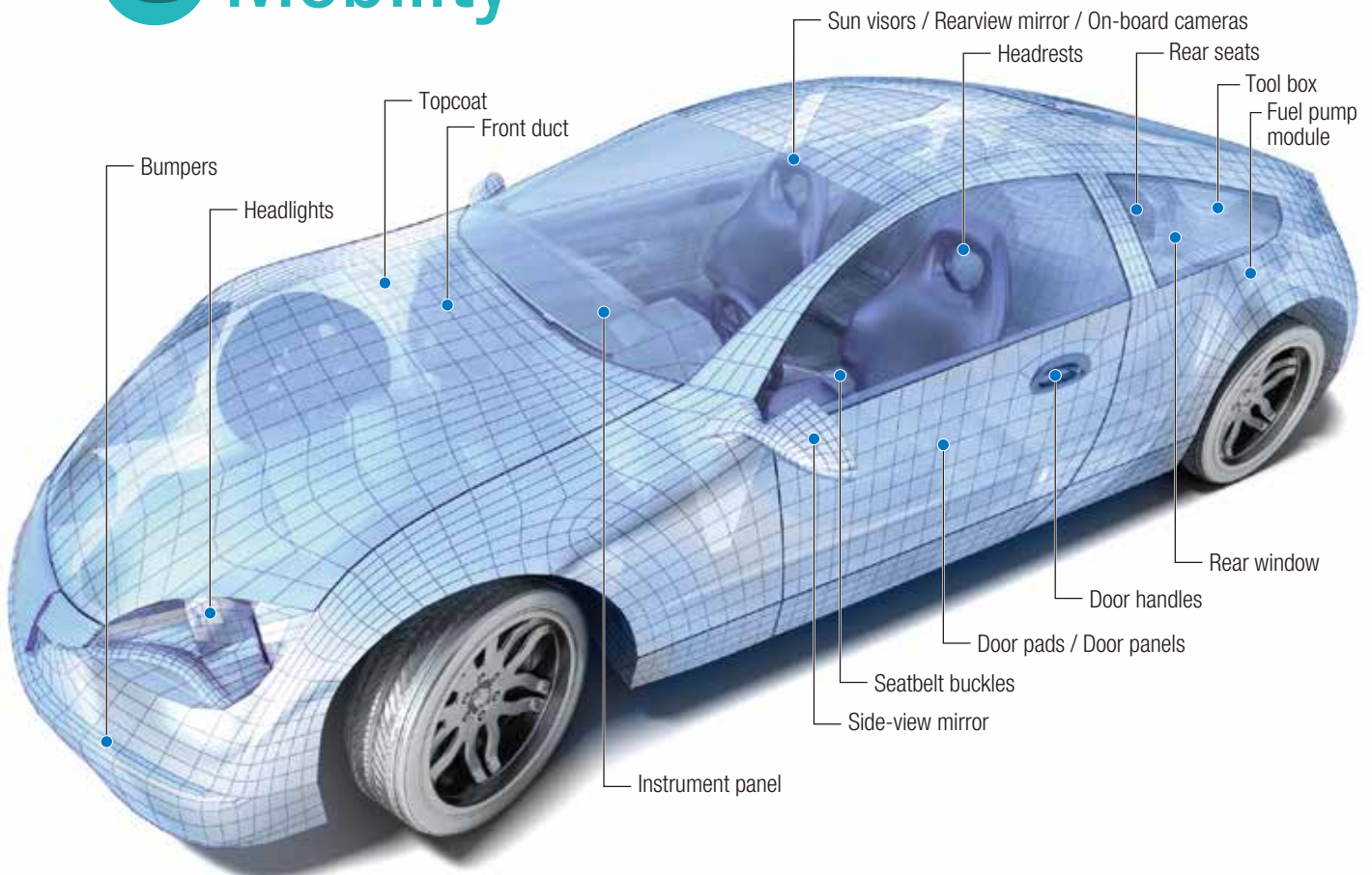
### Foamed plastic

#### Meeting needs for lighter weight

Foamed plastics are widely used in bumpers as well as seats and other automotive interior parts. Offering superior cushioning, they help improve collision safety performance, reduce vehicle weight, and enhance fuel efficiency.



## Mobility



### Meta-xylenediamine (MXDA) / 1,3-Bis (Aminomethyl) cyclohexane (1,3-BAC)

#### Curing agent used in fiber-reinforced plastic production

Used as an epoxy curing agent in carbon fiber reinforced plastic (CFRP) and other products, meta-xylenediamine and 1,3-BAC contributes to reducing vehicle weight and improving fuel efficiency.

### Glycidyl methacrylate (GMA)

#### Automotive topcoat paints

This material is used in paints to make them more resistant to acid rain and scratches, resulting in improved weather resistance in automobiles.



# Energy

## Direct methanol fuel cell

### Clean, quiet electricity generator

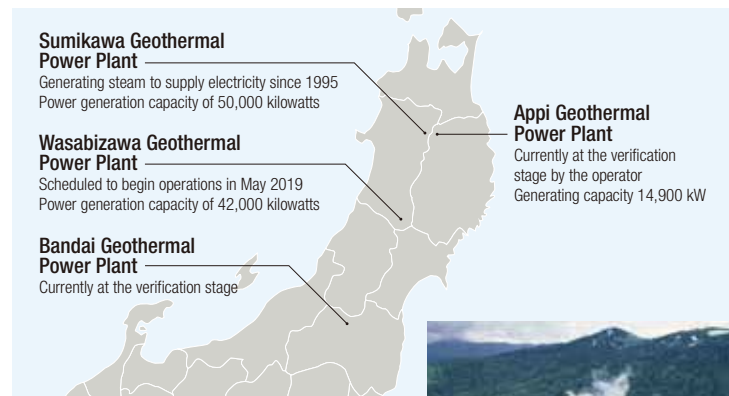
This fuel cell generates electricity from methanol and air and can provide electricity for several days or more. Because electricity is generated through a chemical reaction, the fuel cell is also quiet and does not pollute the air.



## Natural gas-fired power generation

### Participating in new energy generation

We are a partner in a gas-fired power plant at Soma Port, Fukushima Prefecture, that is fueled by natural gas with low environmental impact. The project helps provide a stable supply of energy as part of the New Energy Society initiative conducted under Fukushima's Innovation Coast Framework, established by the Japanese government in 2014.



## Ammonia

### Denitration reducing agent for coal-fired power generation

Ammonia is used as a reducing agent for denitration to eliminate nitrogen oxide and help prevent air pollution.

## Geothermal power generation

### Clean renewable energy

Geothermal energy is a renewable resource unaffected by weather or seasonal changes. As such, it contributes to power supply stability while also minimizing CO<sub>2</sub> emissions from power generation.



Five target fields of business:  
examples of initiatives

## Infrastructure

### Hydrogen peroxide

#### Environmental chemical for soil remediation

The Fenton method uses hydrogen peroxide and a catalyst to clean up soil contaminated with volatile organic compounds (VOCs).



### Meta-xylenediamine (MXDA)

#### Paint curing agent improves corrosion protection

Used in paints for bridges and other structures and in factory pipes and tanks, this curing agent prevents metal deterioration.

