New Mid-term Management Plan

Kimiaki Tanaka
President

April 28, 2017
1. Results of Mid-term Management Plan

   SZ-20
   Phase II
   for FY2014 through FY2016

2. New Mid-term Management Plan

   SZ-20
   Phase III
   for FY2017 through FY2020
1. Results of Mid-term Management Plan

**SZ-20**  
*Phase II*  
for FY2014 through FY2016

2. New Mid-term Management Plan

**SZ-20**  
*Phase III*  
for FY2017 through FY2020
Further Strengthen our Elastomer and Specialty Materials Businesses via globally expanding operations

Strategy by Business Segment

Elastomer Business

Further strengthen competitive businesses by responding globally to growth markets

Specialty Materials Business

Expand operations by accelerating R&D in three key fields
Elastomer Business reports rise in operating income despite fall in sales, Specialty Materials Business steadily expands.
Major factors: decline of products prices due to fall in naphtha prices and the stagnant markets.
Expanded our global bases in growing markets and reorganized to bolster operations

**U.K.**
Ended NBR production
Plant closed in March 2016

**India**
Sales base
Established in July 2015

**Singapore**
S-SBR plant
- Second Line began operating in April 2016
- Oil extension facility to begin operations in July 2017

**Japan**
- SIS capacity expanded
- Installed hydrogenation facility for hydrocarbon resin

**Japan and Singapore**
S-SBR Joint venture launched with Sumitomo Chemical in April 2017

**Mexico**
PSC plant Established
Full-scale operations to begin in June 2017

**Singapore**
The Asia Technical Support Lab for Specialty rubber
Established to begin operating in July 2017

**Elastomer — Achievements**

- **NBR**: Nitrile Rubber
- **S-SBR**: Solution Styrene Butadiene Rubber
- **PSC**: Powder slush compound

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Steadily expanded business in Three Key Specialty Material Fields and developed new high performance materials

**Net Sales Index for Three Key Fields**
(FY2010 = 100) Consolidated basis

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy Materials</th>
<th>IT Components</th>
<th>Medical Devices</th>
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**Achievements**

**Super Growth CNT**
- **Completed mass production plant** (Nov. 2015)
- **Begin mass production of high-performance thermal interface material (TIM) pad by CNT and rubber composite** (pilot plant completed in Dec. 2016)
- **CNT Composite Material Research Center with AIST and others** (established in Feb. 2017)

**IT Components**
- **Expanded production capacity for COP resin** (October 2016)
- **Expanded production capacity for retardation film used in LCD TVs** (Fifth Line: 2015; Sixth Line: September 2017 (plan))
1. Results of Mid-term Management Plan
   
   **SZ-20**
   
   *Phase II*
   
   for FY2014 through FY2016
   
2. New Mid-term Management Plan
   
   **SZ-20**
   
   *Phase III*
   
   for FY2017 through FY2020
Sphere of New Mid-term Management Plan

Corporate Philosophy
Zeon CSR Policy

Enterprise Blueprint for 2020
Zeon makes the Future Today through the Power of Chemistry.

Vision

Key Sense of Value
- Speed
- Dialogue
- Social Contribution

Treasured Characteristics of Zeon
- Mutual Trust and Confidence among Zeon Members

SZ-20 (2011–13)
Phase II (2014–16)
Phase III (2017–20)
Zeon will continue to contribute to the realization of customer dreams and a prosperous society through providing the solutions which is a combination of eco-friendly products and services.

To fulfill this mission, we will cherish Zeon’s unique, open atmosphere, based on mutual trust and confidence among Zeon members and act with the three core values of speed, dialogue, and social contribution.

We will strive to make our Zeon group that we can proud of, with the appreciation to the customer worldwide and society for their acknowledge and praise for Zeon brand by acting based on these value.
Main battlegrounds for growth is in outside Japan the environment problems, population growth, evolution of automobiles, progress in IoT...

- Advancement of M&A among chemical companies in Europe and the U.S.
- Growing competition from emerging countries
- Greater requirements for reducing greenhouse gases
- Global population to increase by 1.3 billion over the next 15 years; rapidly aging societies
- Automobile production: number of vehicles with internal combustion engines to continue increasing until around 2040; meanwhile, share of EV/PHV to increase from 3% in FY2016 to 8% in FY2025

→ Business opportunities for specialty rubber and energy materials

- Evolution of automobiles: EV, self-driving, connected cars, car sharing etc.
- Dissemination and expansion of IoT

(Source: Ministry of Economy, Trade and Industry of Japan; “2014 Automobile Industry Strategy”)
### Growth

1. **Reinforce** the combined strengths of the Zeon Group. **Explore** ways of going beyond boundaries and collaborating with external players to provide **solutions** globally as a contribution to society.

2. **Accelerate the pace of new business creation and product development** in key development areas: global environment, smart devices, and health and living.

### Culture

3. **Cultivate a corporate culture that places value on taking proactive action by harnessing diverse ideas and trying them.**
Phase III: Groupwide Strategy 1
Reinforce and explore to provide solutions globally as a contribution to society

Zeon’s Combined Strengths

Reinforce
Products + Services

Explore
Collaboration with external players

Customers
- Planning
- Development
- Procurement
- Production
- Sales
- User Support
Phase III: Groupwide Strategy 2
Accelerate new business creation and product development in key development areas

Key development areas: high potential for growth and innovation

Global Environment
- Energy conservation
- Reduction of fossil fuel use
- Batteries
- Power generation
- Automotive

Health and Living
- Self-driving cars
- Medical materials
- Medical devices
- Agriculture
- Daily necessities

Smart Devices
- IoT
- Smart Devices

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Phase III: Groupwide Strategy 3
Cultivate a corporate culture that values the harnessing of diverse ideas and trying them

Growth Strategy

Reinforce + Explore \[\Rightarrow\] Solution

Accelerate new business creation and product development

Cultivate a Corporate Culture

*Taimatsu* (Torch) Activities
- Dialogue between management and employees
- System of support and generation of ideas
- Promotion of diversity
Phase III: Strategy by Business Segment

Strategy by Business Segment

**Elastomer Business**

- Reinforce competitive businesses by responding globally to growth markets and raising cost effectiveness.
- Explore new opportunities and achieve growth based on the trust built in the market and relationships with customers.

**Specialty Materials Business**

- Expand business in step with the speed of market growth and technological progress through focused investment of resources and stronger collaboration with outside players.
Phase III: Strategy by Business Segment

Elastomer Business

- Reinforce competitive businesses by responding globally to growth markets and raising cost effectiveness.
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Specialty Materials Business

- Expand business in step with the speed of market growth and technological progress through focused investment of resources and stronger collaboration with outside players.
By combining the polymerization and production technologies of Sumitomo Chemical and Zeon, we will reduce automobile weight and provide much needed enhancements for tires in regard to wet grip, fuel-efficiency, and abrasion resistance.

**S-SBR Production Capacity**

- **Launch of First Line in Singapore** (April 2014)
- **Launch of Second Line in Singapore** (April 2016)
- **Establishment of ZS Elastomer** (April 2017)

- Sumitomo (Singapore)
- Sumitomo (Chiba)
- Zeon (Singapore 2nd Line)
- Zeon (Singapore 1st Line)
- Zeon (Tokuyama)
Asia Technical Support Laboratory (ATSL) established in Singapore

- Singapore is 4th place to establish technical support laboratory in addition to Japan, Europe, and China.
- ATSL covers technical demand in ASEAN and Indian emerging market, prospected continuous growth of combustion engine vehicles.

Projected Production Volume for Four-wheeled Vehicles

(Source: Data from Marklines edited by Zeon)
Latex: Expansion Strategy

Seeking to expand sales in growing Supported Gloves market by developing new products

Global Market for Supported Gloves

- 5–7% annual growth rate

Zeon Product Sales Plan for Supported Gloves

- Projected annual growth rate of 24%

Properties of Launched Products in FY2016

- Abrasion resistance
- Softness

(Evaluated by Zeon)

Accelerate new business creation and product development
Further growth on both business units with Product differentiation

**Hydrocarbon Resin**

Hydrogenation facility is newly installed based on our own technology (Start of production in July 2017)

**SIS**

Market/Application Expansion on Asymmetric SIS will lead to steady business growth

![Diagram showing SIS properties and applications](image)
Powder Slush Compounds

Meeting the needs of an expanding market with manufacturing bases in Japan, China, and Mexico

PSC Production Structure
- Japan 2,000 t
- China 2,400 t
- Mexico Phase 1: 1,200 t (full-scale production to begin in June 2017)
  Phase 2: 1,200 t (production to begin in 2020)

PSC Sales Plan (Global)
Index: Figures are based on a scale where FY2017 is 100

Powder slush compounds (PSC)
- PVC-based powder compounds for slush molding
- Superior design, moldability, and low-temperature properties

PSC application: Automotive interior skins

Zeon Kasei Mexico
Elastomer Business

• Reinforce competitive businesses by responding globally to growth markets and raising cost effectiveness.
• Explore new opportunities and achieve growth based on the trust built in the market and relationships with customers.

Specialty Materials Business

• Expand business in step with the speed of market growth and technological progress through focused investment of resources and stronger collaboration with outside players.
Diversifying COP applications for medicine and biotechnology

- Launched prototype production service for microfluidic chips and other products

A one-stop service offering everything from flat plate molding to microchannel cutting and bonding, allowing for low-cost, quick delivery and small-lot sample production

→ Adopting the concept of *kotozukuri*, the development of added value that goes beyond manufacturing
Sales growth driven by robust demand for its use in high-resolution large-screen TVs

**LCD Panel Shipments (by panel size in square meterage)**

- **Panel size ( Millions of m²)**
  - 250
  - 200
  - 150
  - 100
  - 50
  - 0

- **2014**
- **2015**
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**

**Shipment (Millions of units)**

- **55-inch**
- **65-inch**

**Global Demand for OLED TV by Screen Size (Projection)**

**OLED TV market: growing demand for larger screens**

**LCD panel market: expansion continues in terms of square meterage**

(Source: 30th and 31st IHS Display Japan Forum, January 2016) © 2016 IHS
ZeonorFilm®: Developing the OLED Business

Entering the OLED market with a lineup of new materials

- Develop materials for the growing OLED market:
  - the new retardation film
  - materials for touch sensor and foldable applications

OLED Schematic

- ZF: Film sensor material (also be applied under the polarizing plate)
- ZD-U: Sunglass readable
- PVA: Antireflection
- λ/4 plate: Viewing angle compensation
- Posi-C: Encapsulant layer for barrier film material

OLED Shipments

- OLED TV
- Smartphone
- Head mount display
- Tablet

(Source: IHS Display Japan Forum, July 2016)
Energy material for Li-ion battery

Growing steadily on the back of expanded product line-up

Zeon Products for Li-ion Batteries

<table>
<thead>
<tr>
<th>Gasket</th>
<th>Sealant</th>
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<tbody>
<tr>
<td>Cathode active material</td>
<td>Conductive additive</td>
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<tr>
<td>Cathode</td>
<td>Anode</td>
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<tr>
<td>Cathode binder</td>
<td>Anode binder</td>
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<tr>
<td>Aluminum foil</td>
<td>Copper foil</td>
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<tr>
<td>Active materials</td>
<td>Active materials</td>
</tr>
<tr>
<td>Functional layer (heat-resistance separator)</td>
<td>Binder for function layer</td>
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</tbody>
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Sales of Zeon Battery Materials

Phase III Target

Net sales (Index)

Index: Figures are based on a scale where FY2013 is 100
Source for market data: Report by B3, Inc., December 2016
Energy material for Li-ion battery

Steadily increasing applications for the automotive industry

Five Key Cell Properties, Zeon Proposals

- Better lithium-ion conductivity binder
- High tensile strength binder
- High capacity
- Long cycle life
- Safety
- Low cost
- Functional/Ceramic layer material (binder, slurry)

PHV/EV Forecast by Area

- Makers in China and other Asian countries
- European makers (VW, BMW, Renault, etc.)
- North American makers (GM, Ford, Tesla, etc.)
- Japanese makers (Toyota, Nissan, Honda)

(Source: Zeon estimates based on B3 report)

With PHV/EV market expansion, We realize the phase-Ⅲ target by increasing applications for the advanced Chinese market and for the European and U.S. markets.
Expand businesses with FFR pressure guidewires, bile stone extraction catheters and gastrointestinal stents

**Sales of Zeon Medical**

<table>
<thead>
<tr>
<th>Year (Phase III)</th>
<th>Cardiovascular</th>
<th>Endoscopic</th>
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<tr>
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Index based on scale where sales for FY2016 is 100

**Cardiovascular business: Advanced accuracy and reliability of pressure measurement toward increasing market share**

Aim for 30% of FFR market share with fiber optic sensing technology by FY2020

**Endoscopic business: Focus on minimally invasive devices**

- Bile stone extraction catheters: Plan to launch new product in FY2017
- Gastrointestinal stents: Plan to launch new products in FY2017, FY2018, and FY2019
Applications of ZEONANO™ SG101 / rubber composite material
Developed an extraordinary high-performance Thermal Interface Material (TIM)

Solution in Thermal Management for Servers & Power Devices

Low heat resistance in broad pressure range for actual usage

Accelerate new business creation and product development

Outward appearance of TIM
Enterprise Blueprint for 2020

Zeon makes the Future Today through the Power of Chemistry.

Zeon will continue to contribute to the realization of customer dreams and a prosperous society through employees’ individual growth.

Targeting consolidated net sales of over 500 billion yen in FY2020
Mutual trust and confidence among Zeon members
Zeon’s plans, forecasts, and other data appearing in this presentation were calculated based on information which was currently available and therefore includes risks and uncertainties. Actual results may differ depending on various factors.