Kaneka
New Medium-Term Management Plan 2020.10.5
Path to Become a Paradigm Changer From Within
Awareness of the Times
There will be a paradigm shift beyond our imagination
Awareness of the Times
– Toward a World with New Values

With Virus

Toward a World with New Values

Transformation to “New Style Work”

Coronavirus shock

Old Style Work
Awareness of the Times
– Paradigm Shift Beyond Our Imagination

Changes in work and life styles

- Pandemic countermeasures
- Environmental issues

Changes in industrial structure

- Declining birthrate and aging population
- From centralization to decentralization
Management Strategy

Path to Become a Paradigm Changer from Within
Growth Fields in the “With Virus” Era

Innovative growth fields
Healthcare • Electronics
Advanced medical technology
Digital transformation (DX)

Higher value of health and security

Co-existence with virus
Management Vision
– Advance to ESG Management

KANEKA thinks
Wellness First

Kaneka’s ESG
Contribute to the advancement of life and the environment of people worldwide through chemistry

Earthology Chemical Solution

Kaneka’s business domains

Nutrition SU  Health Care SU
Active Human Life Solution

Three domains addressed by Kaneka’s businesses

Environment/energy
Food
Wellness

Material SU  Quality of Life SU

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TCFD Initiatives/ Promotion of DX and Work Culture Innovation

TCFD
- Strategy
- Governance
- Risk management
- Indicators and targets

DX

Accelerate business portfolio transformation

Smart Work Realization
Creation of new value
- R&B innovation
  Dramatic improvement in productivity, including introduction of MI/AI

Work Culture Innovation
Creation of new products and new businesses
- Digitalization of market and customer interfaces
  Create new customer value

Operational innovation
Raise operating efficiency and shift to creative work
- Visualize management information, raise the sophistication of business management, automate and optimize operations

Production  SCM  Back office

DX-related investment of ¥15 billion over the next 5 years
Overview of the New Medium-Term Management Plan
Roadmap to a Recovery in Business Performance

Before the coronavirus

Coronavirus shock

With virus

Bottom

Gradual recovery

Full-scale recovery

2019
2020
2020
2020
2021
2021
2021
2021

4Q
1Q
2Q
3Q
4Q
1Q
2Q
3Q
4Q
Growth Strategy (Priority Businesses)

**New large-scale businesses**
- **Keys to growth**
  - Biodegradable Polymer (PHBH)
  - OLED

**Leading-edge businesses**
- **Core drivers of business performance**
  - Medical: Build additional facilities at the Vietnam plant
  - Pharma: Expand the capacity of KEGT to address infections
  - E & I: Materials for 5G applications

**Foundation businesses**
- **A strong platform supporting the management base**
  - Highly unique, high-value-added products

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Growth Strategy (Performance Targets)

Net sales (JPY Billion)

- FY2019 (Results): 601.5
- FY2020 (Forecast): 560.0
- FY2022 (Forecast): 700.0

Operating income

- FY2019: 26.0
- FY2020 (Forecast): 21.0
- FY2022 (Forecast): 53.0

Operating income targets:
- FY2019: 25%
- FY2020 (Forecast): 75%
- FY2022 (Forecast): 50%

Operating income by business category:
- Foundation businesses (Core)
- Leading-edge businesses
- New large-scale businesses

Foundation businesses: Vinils and Chlor-Alkali, Performance Polymers, Foam & Residential Techs, Performance Fibers, Foods
Leading-edge businesses: E & I Technology, Pharma, Medical, Supplemental Nutrition, Agris, PV & Energy management
New large-scale businesses: Biodegradable Polymer (PHBH), Organic EL Lighting, Opto-Electrochem, Regenerative medicine and cell therapy

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Investment plan

Major investment projects (including M&As)

2017-2019 (Results) : ¥142 billion
2020-2022 (Forecast) : ¥200 billion

Health Care

- Expand biopharmaceuticals capacity at Kaneka Eurogentec S.A. (KEGT)
- Expand API capacity
- Expand capacity for blood purification systems and Intervention
- Gene therapy and regenerative medicine and cell therapy

Material

- New facilities for epoxy masterbatch

Quality of Life

- Increase polyolefin foam capacity
- Build additional polyimide film and optical film facilities
- Increase PV heterojunction cell capacity

Nutrition

- Construction of a new lactic acid bacteria and dairy product plant

New Business

- Commercial production facilities for Kaneka Biodegradable Polymer (PHBH)
R&B Strategy (Selection and Concentration for Resource Allocation and Key Themes)

R&B expenses (ratio of R&B expenses to net sales)

<table>
<thead>
<tr>
<th>Year</th>
<th>Leading-edge + New large-scale businesses</th>
<th>Foundation businesses</th>
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</thead>
<tbody>
<tr>
<td>2017 (Results)</td>
<td>4.7%</td>
<td>4.7%</td>
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<tr>
<td>2018 (Results)</td>
<td>4.9%</td>
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<tr>
<td>2019 (Results)</td>
<td>4.6%</td>
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<td>2020 (Forecast)</td>
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<td>4.6%</td>
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<tr>
<td>2022 (Forecast)</td>
<td>31.5</td>
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</table>

Business development

- Environment/energy
  - Biodegradable polymer
  - Food production support
  - Genome editing
  - Heat-resistant composite materials

- Food production support
  - Food production support
  - Regenerative medicine and cell therapy
  - Functional foods

- Wellness
  - Biologics
  - Graphite sheets
  - Opto-electrochemicals

- Telecommunications
  - Polymide
  - Optical acrylic

Separate into stages and allocate resources to key themes

- Basic development
  - OLED

- Telecommunications
  - Surfactin

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Business Strategy
**Lineup of Biotechnology-Related Businesses**

**Foods**
- Yoghurt
- Yeast
- Fermented butter

**Supplements**
- Kaneka Ubiquinol (reduced form of coenzyme Q10)
- Lactic acid bacteria

**Pharma**
- Biopharmaceuticals
  - PCR reagents
  - COVID-19 vaccine intermediates
- Small molecule pharmaceuticals
  - Active pharmaceutical ingredients (APIs) for Avigan® Tablet

**PHBH**

**Medical**
- Regenerative medicine and cell therapy
- Testing and diagnostics

**Agricultural**
- Production support
- Genome editing

**Leading-edge businesses**

**New large-scale businesses**

**Foundation businesses**

**Biotechnology Fermentation**
Kaneka Eurogentec S.A.

Plasmid DNA
Protein

Process development
CRO (contract research)

Expand business in the gene therapy field
Upgrade and expand new products and develop clusters
Plasmid DNA, mRNA

Improve plasmid DNA productivity

Expand share of protein drugs
Develop innovative manufacturing methods for protein drugs

Advanced analysis technologies

Pharma – Biopharmaceuticals CDMO Business: Basic Strategy

Kaneka Eurogentec S.A.

Microbial CDMO business

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## COVID-19 Vaccine and Therapeutics Projects at KEGT

<table>
<thead>
<tr>
<th>Product type</th>
<th>Customer name</th>
<th>Order status</th>
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<tbody>
<tr>
<td>DNA vaccine</td>
<td>Company A</td>
<td>• Received</td>
</tr>
<tr>
<td>DNA vaccine</td>
<td>AnGes, Inc. (Japan)</td>
<td>• Received</td>
</tr>
<tr>
<td>Protein vaccine</td>
<td>Company B</td>
<td>• Received</td>
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<tr>
<td>Material for mRNA vaccine</td>
<td>Company C</td>
<td>• Received</td>
</tr>
<tr>
<td>mRNA therapeutics</td>
<td>Company D</td>
<td>• Received</td>
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<tr>
<td>mRNA vaccine</td>
<td>Company E</td>
<td>• Under discussion</td>
</tr>
<tr>
<td>DNA vaccine</td>
<td>Company F</td>
<td>• Under discussion</td>
</tr>
<tr>
<td>DNA vaccine</td>
<td>Company G</td>
<td>• Under discussion</td>
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Initiatives to Address the COVID-19 Issue

Medical

Testing and diagnostics
Blood purification technology

Small molecule pharmaceutical domain

APIs for Avigan® Tablet

Infection Initiative Team

Biopharmaceutical domain

Antibody drugs
DNA vaccine
mRNA vaccine
mRNA therapeutics
PCR test reagents
Medical – Business Expansion

**Intervention and blood purification domain**
- New coil for embolization of brain aneurysms (i-ED Coil™)
- New blood purification system

**New products**
- Coronary FFR wire
- Increase medical catheter production capacity in Vietnam
- Strengthen the gastrointestinal and electrophysiology businesses

Make regenerative medicine and cell therapy more prevalent in society (Cultured CAL™)

Provide breast reconstruction treatment using Cultured CAL™ at Cellport Clinic Yokohama

- **Future initiatives**
  1. Cell processing business
  2. Technical support for Cultured CAL™
Supplement—Mitochondria and Intestinal Health Are Crucial to the Strength to Live

**Mitochondria and intestines**

**Kaneka Ubiquinol**
(reduced form of coenzyme Q10)
An essential substance for energy production while protecting mitochondria from activated oxygen

⇒ Increase immunity

**Health**

**Lactic acid bacteria**
Improve the intestinal environment, which is closely tied to the health of the entire body

**Symptoms related to mitochondria**
- Heart disease
- Fatigue
- Stress
- Sleep disorders
- Immunity disorders
- Frailty and others

**Symptoms related to the intestinal environment**
- Bowel movements
- Abdominal discomfort
- Depression
- Stress
- Immunity disorders
- Allergies and others

**Brain-gut interaction**

Cells, proteins, cell membranes, lipids, etc.
Lactic Acid Bacteria to Improve Health and Quality of Life (AB-Biotics S.A.)

Examples of bacteria strains owned by AB-Biotics

- **Possesses more than 550 original bacteria strains**
- **Lactic acid bacteria products with clear effects**

Commenced sales on Amazon in the US

- **Increase market recognition**

Domestic sales of lactic acid bacteria products for infants

- **Selling products that mitigate baby colic to nutritional supplement manufacturers**
Expansion of the PV Business

Existing domains

Develop business centered on rooftop residential photovoltaic products

New domains

Building integrated photovoltaics (BIPV)

In-vehicle photovoltaic module

Hetero-junction technology

Back contact

See-through photovoltaic cells

Bi-facial light receiving structure

Highly efficient see-through photovoltaic modules adopted for use in the Japan National Stadium

Image courtesy of Taisei Corporation

Adopted in the Toyota e-Palette (in roof panel)

Image courtesy of Toyota Motor Corporation

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Vinyls and Chlor-Alkali

- Expand markets through technological innovation in chlorinated PVC and paste PVC

Performance Polymers (MOD)

- Develop new products and applications such as non-PVC applications
- Expand epoxy masterbatch at the earliest opportunity

Performance Polymers (MS)

- Expand sales in the Chinese and Asian markets
- Drive the global business expansion of CEMEDINE Co., Ltd.
Foundation businesses

Foam & Residential Techs
- Provide new lightweight, heat-insulating expandable plastics solutions

Performance Fibers
- Strengthen the business platform in Africa
- Develop new markets

Foods & Agris
- Transform the value chain leveraging digital technologies
- An innovative business model that integrates operations from dairy farming to distribution
- Next-generation plant breeding technology and agricultural biomaterials
- E-commerce
Promote Recycling-Oriented Organic Dairy Farmers

New company: Betsukai Wellness Farm Co., Ltd. (Established: June 2020)

Manufacturing and sale of organic dairy products by the Kaneka Group

- Organic yoghurt
- Organic milk
- Organic butter

Recycling-oriented dairy initiatives

Considerate of dairy cattle
Considerate of people
Considerate of the environment
New large-scale businesses
Biodegradable polymer PHBH

Develop products with brand holders

Seven & i Holdings Co., Ltd.
Seven Café straws

Shiseido Company, Limited
Palette's case, "AquaGel Lip Palette"

1st step
Food packaging material applications

2nd step
Expand into a more diverse range of fields

Plant with capacity of 5,000 tons per year

Launch of commercial plant
20,000 to 50,000 tons per year

100,000 to 200,000 tons per year
Agricultural Production Support: Accelerate Crop Breeding Based on Genome Editing

Kaneka’s unique plant breeding technology: iPB method

- Dramatically accelerate crop breeding
- Tissue culture process is no longer necessary
- Advanced application to genome editing

Genome editing tool

Germinating seed → Germline → Meristems → High-precision gene modification → Useful cultivars

Apply to major crops

Japan Tobacco Inc.’s business assets related to plant biotechnology

Facilities

Integration

Networks Technologies Human resources

Useful cultivars