Management **Strategy System** 

# **Basic Management Policy**

### Aiming for the goal of making the world healthy-"Wellness First" (Human-Driven Management)

#### Trust & Respect

Trust People & Mutual Respect is a tradition that has continued since Kaneka's founding

#### **Trial & Error Experiment Driven Company**

The limitless adventure of repeated renewals for a new portfolio

**Selection and Concentration** 

Tackling the three crises with a focus on Life Science

Active investment in research and development

Targeting rapid growth by investing resources

in leading-edge businesses and new large-scale businesses

#### **Strengthening the Management Platform**

Innovate and upgrade operations through digital transformation (DX) A new personnel system for increasing employee motivation and productivity

### **Three Focal Points**



### **Five Initiatives**

**Strengthening the Asian Strategy** Advancing Digital Transformation (DX) Advancing Carbon Neutrality Alliances and M&As **Diversity Committee** 



### P. 44 Human Resource Strategies

### P. 56 Manufacturing Strategies

Carbon Neutrality Digital Transformation (DX) The Path of **Hybrid Management** 

# Promoting Portfolio Transformation

We will accelerate the transformation of our business portfolio through hybrid management. We aim to create unique and valuable new solutions, combining a wide variety of different technologies and solutions to help solve social issues.

#### **Operating Income Ratio by Solutions Unit (SU)**



#### **Capital Return Indicators**







#### **Investment Plan**

We will accelerate the process of selection and concentration in our investments, expanding the domain of "life science for a healthier planet." We will strategically invest resources (people, goods, and money) to develop unique and differentiated technologies that cannot be copied. We will expand

#### **Nutrition SU**

- Construct new dairy product plant
- Construct new probiotics product plant
- Increase coenzyme Q10 capacity
- Increase overseas food plant capacity

Fiscal 2023-2025 Investment plan

#### **Health Care SU**

- Construct new catheter plant
- Increase blood purification device capacity
- Increase biopharmaceutical capacity
- Increase mRNA capacity
- Increase in small molecule
- pharmaceutical capacity

Quality of Life

the business of our leading-edge business groups. Our foundation businesses will also work to bolster their business foundations by thoroughly strengthening differentiation capabilities and making capital investments to enhance supply capabilities.



## **Earthology Chemical Solution**

## Material Solutions Unit

To support the advancement of life and the environment by drawing out the richness of materials



#### Segment Net Sales/Operating Income



- Strengthening the glocal supply system of local production for local consumption
- Developing new products and providing solutions that meet the needs of each market.
- Shifting to high-value-added areas

We bring innovation to lifestyles and the environment by harnessing the unlimited potential of chemical materials to help communities achieve sustainability.

## Quality of Life Solutions Unit

To produce the leading edge of the enhancement of the quality of life through the power of materials Quality of Life Pathfinder



15

2025+X (Fiscal year) 0

Segment net sales • Operating income (right scale)

2022

161

172.8

400

200

100

0

169

2021

- Business expansion leveraging breakthrough technologies

## The Path of **Hybrid Management**

## Active Human Life Solution

### Health Care Solutions Unit

To create a world where advanced medical means are available to as many people as possible



apy Genetic diagr

(Billions of Yen

50

40

30

20

10

43.0

160.0

2025+X (Fiscal vear) 0

Products and services













 Accelerating R2B and promoting the use of external resources through activities such as M&A and open innovation

 Delivering unique, cutting-edge medical solutions to global markets



To re-innovate food and health Nutrition Value Chain Innovator





2021

12.7

-58.9

Segment Net Sales/Operating Income

15.7

2022

Segment net sales Operating income (right scale)

70.8

(Billions of Yen)

250

200

150

100

50

0

- to production in the fields of food diversification, food enrichment, disease prevention, wellness, agriculture, livestock, and fishery
- Using digital technology to strengthen customer contact points and brands

### **R2B Strategies**

# R

# Accelerating the Flow from Research to Business

Kaneka has delivered value to society through "hybrid management." This approach involves fusing the functions of research and business to create unique products and services, implementing them and expanding their scale. We will promote this fusion of research and business and further strengthen this mindset, which is an evolution from R&D to R&B. We will further accelerate the flow from research to business, from "R&B" to "R2B."

## Environment / Energy



Three Crises Resolution of Social Issues Social Implementation of New Materials and Systems

Food

## Wellness

# R2B+P A Support for Hybrid Management

Hybrid management in various technologies and fields has been key to our growth. Focusing on the concept of "life science for a healthier planet," we drive innovation that uses business at scale to change society.

### Kaneka's Biomanufacturing

Kaneka is an advanced biomanufacturing company that started out with technologies for yeast and other fermentation. We have accumulated biomanufacturing technologies that have garnered attention in various fields such as pharmaceuticals,

agriculture, and environmental fields. We are enhancing our R2B system to expand our strengths and accelerate research and development in the life sciences field.

## Kaneka's Biomanufacturing **Contributes to Three Strategic Areas**



### Evolution of Green Planet<sup>™</sup> Biomanufacturing Technology

#### Advances in Green Planet<sup>™</sup> Molding Technology

A key challenge in terms of promoting the use of Green Planet<sup>™</sup> has been the difficulty in the molding process. Amid developments in cultivation and compounding technology and in processing technology, solutions are now emerging to technical challenges in our functional product groups such as thin-walled deep-drawn blisters, films, and fibers.



#### Green Planet<sup>™</sup> Manufacturing Process Using CO<sub>2</sub> as a Raw Material

In our research and development to produce Green Planet<sup>™</sup> using CO<sub>2</sub> as a direct raw material, we are making progress in developing technology based on gas fermentation. This research and development was selected for the Green Innovation Fund Project promoted by the Japanese government, and we are working toward the construction of a demonstration plant.

Furthermore, we are developing biomanufacturing technology using CO<sub>2</sub> as a raw material. We will further accelerate research and development with a view to combining it with our health and food technology.



#### Increasing Production Capacity

We have made progress in joint development and product launches with major brand holders in Japan, the U.S., and Europe. Construction of the new 15,000 ton capacity facility at the Takasago Manufacturing Site is progressing as planned toward launch. We have also begun studies focusing on our next phase of overseas expansion.



### **R2B Strategies**

#### A Hybrid of Food and Health

#### Providing Coenzyme Q10 in a Variety of Forms

We are developing new healthy foods by combining our food processing technology with functional food ingredients. "Watashi no Chikara (My Energy)™ Q10 Yogurt" is a food application that combines technologies to enable the intake of coenzyme Q10 in a "reduced form" even in food.



#### Combining Dairy Farming and Chemistry in a New Organic Dairy Farming Process

At Betsukai Wellness Farm, we are building a new dairy farming process by combining chemical plant operation and design technology with dairy farming. Positioning the barn as a kind of production plant, we provide an environment that is favorable for the cows. We then use data on each cow to maintain consistent quality and production volume.





### **Deploying Energy Solutions**

#### **Expansion to Diverse Applications**

In the photovoltaic business, we offer unique products for the architectural and automotive fields, delivering high-efficiency power generation performance and design characteristics.

Applications of these products to building exterior walls and windows have earned strong recognition for their contribution to mitigating climate change.

## Development of Next-Generation Perovskite Solar Cells

To increase power generation performance and expand the range of applications, we are also focusing on developing perovskite solar cells. By combining polymer technology accumulated in the resin area with existing silicon-type solar cell technology, we are also developing tandem products that achieve new levels of high efficiency in electric power generation.

### Developing the Medical Device Business through Open Innovation

Our medical device business is backed by best-inclass processing technology. A key strength is manufacturing that targets the precise needs of physicians.

We are combining external technologies and tackling challenges in new areas as we strive to advance solutions to meet growing demand for extending healthy life expectancy.

In the area of catheters for intravascular treatment, for example, we acquired Japan Medical Device Technology Co., Ltd. ("JMDT"), making it a wholly owned subsidiary. By integrating JMDT's bioresorbable stents technology, we aim to expand our business in the stent treatment area.





T-Green<sup>™</sup> Multi Solar, a photovoltaic power generation system integrated with building external walls and windows, receives the Fiscal 2023 Minister of the Environment Award for Climate Action from Japan's Minister of the Environment

"T-Green™" is a registered trademark of Taisei Corporation. (Courtesy of Taisei Corporation)



Bioresorbable stents developed by Japan Medical Device Technology Co., Ltd.\*

(Above: stent before expansion, below: stent after expansion)

\* A stent is a small, expandable, and tubular metal mesh that is used as a medical device to treat narrowed or occluded coronary arteries. A catheter loaded with a stent is transported to the treatment site where the stent is implanted to restore blood flow. Bioabsorbable stents are taken up by the body a certain period of time after implantation, ensuring that they do not interfere with treatment after recurrence.

# Accelerating Hybrid Management with $R2B \times DX$

## Digital transformation in R2B

We are pursuing a company-wide strategy of digital transformation aimed at creating new value. As we work toward transforming R2B, we are incorporating cutting-edge simulation and data analysis technologies and routinizing the use of digital infrastructure.

#### Transforming R2B with Digital



Qualitative data is also accumulated as digital data and used for creating intellectual property and planning the next experiment

Advanced analysis technology is used to obtain insights even from limited data, so that these can be directed toward the next experiment

## **Research and development timeframe shortened to 1/3**

## **Accelerate value** creation

Scale up to the next production and business phase Develop applications for other fields Creation of intellectual property rights, etc.

### Elevating and Expanding Our Use of Digital

We are developing our human resources for each level of digital use. Personnel with advanced technical skills are responsible for leading the resolution of issues facing the entire Company and influencing the organization as a whole. We are advancing our development of personnel



Ensure that the number of personnel who are assigned to specialized teams and who lead digital transformation initiatives on key issues for the Company corresponds to the number of research and development departments



#### Results of using electronic lab notebooks



## LEVEL 1: Understanding the value of using data

Attendance of e-learning course on DX fundamentals





skilled in digital technologies. To routinize the accumulation of data and enable a large pool of researchers to use advanced analysis techniques, we are building an environment for digital technologies and hold workshops promoting their use.



Aim to have several personnel embedded within each department who are assigned to each team and work with digital transformation leaders to apply analysis technology

#### Routinize data accumulation

We have also put in place a mechanism for importing analog data, increasing the number of electronic lab notebooks registered.

#### Promoting data analysis

In fiscal 2023, we started a workshop for mastering the MI program.

Use by participants has helped to increase use of the analysis program.

# **R2B Intellectual Property Strategies**

We steadily capture the output of our activities and secure intellectual property rights, striving to acquire intellectual property such as results and know-how. In addition, non-research employees also understand the importance of intellectual property and use it in their work.

#### **Basic Policy of Intellectual Property**



In fiscal 2022, we were newly granted 305 Japanese patents and 243 overseas patents.

At the same time, we actively abandoned unused patents to manage our intellectual property expenses efficiently. At the end of fiscal 2022, the number of patents held was 3,354 Japanese patents and 3,379 overseas patents, roughly level with the previous fiscal year.

In 2019, we established an employee invention reward system for patent applications to incentivize R2B members to apply for patents. This has led to a rise in the number of patent applications filed, helping to expand our intellectual property portfolio.

#### **Developing Human Resources for Intellectual Property**

In promoting education on intellectual property, we create content tailored to each level, from new hires to leader roles. We are working to encourage the discovery of inventions by investing in training for researchers and engineers. The training aims to foster awareness of how results obtained through R2B+P activities can yield Intellectual Property rights that can then be used in business. We also provide sales employees with training on topics such as trademarks and copyrights, as well as expanding the range of programs aimed at using market information.

#### Overview of IP Education Program



\* Program whose scope of attendance includes sales employees

### Intellectual Property $\times$ DX: Upgrading Our Operations through DX

#### Using AI in Patent Searches

We have started using AI tools in patent searches. For example, in our pre-application technology survey in fiscal 2022, about 20% of the survey was carried out using AI tools. We have also introduced AI tools to the patent search work done by R2B members, which has reduced the labor hours



#### Using Intellectual Property Information in Business Development

We are promoting information analysis and information utilization initiatives such as IP landscape<sup>™</sup>. In fiscal 2022, we strengthened our efforts by establishing a new group within the Intellectual Property Department that specializes in analyzing and using information. This group coordinates with each business division to develop strategies for a range of

#### Using Patent Scores

We use patent analysis tools to review our patent portfolio, referencing the value of our patents. We conduct a portfolio review that focuses on the value of each patent, conducting an inventory check of the rights we hold. In determining whether we need to



required for the search. By combining the know-how of the Intellectual Property Department with AI tools, we maintain the quality of investigations and contribute to improving the efficiency of research and development.

research and development and business issues. By understanding customer value and analyzing the competitive environment, we aim to improve our business competitiveness.

IP landscape  ${}^{\rm TM}$  is a registered trademark of Masayuki Shobayashi, patent attorney at Shobayashi International Patent & Trademark Office.

maintain the rights to registered patents, we tap into the insights of the Company's technology and business leaders, assess the cost of maintenance, and check the objective patent score.



**Human Resource Strategies** 

# Human Driven Company

A lean, high-quality team and merit-based appraisal → Our philosophy since our founding

Since its founding in 1949, Kaneka has been guided by the philosophy that utilizing the talents of each employee is essential for business growth. We develop our people, assigning, promoting, and rewarding them based on their abilities. That approach has been key to the growth of our business. Today, as employee attributes and values diversify, it is becoming ever more important to develop human resources in a way that encourages individuality.

> Ambition A company whose unique talents tell a story



## **The Three Pillars of Human Resource Strategies**

Our growth is driven by the willingness of each employee to take on challenges. We will achieve change by creating an environment of openness to challenges, providing opportunities to employees and fostering their growth. Our human resource strategy is based on The Three Pillars: Human Resource Development, Promotion of Diversity, and Promotion of Wellness.

### **Human Resource Development Development of human resources and leaders** centered on Kaneka 1-on-1

Since 2018, we have been carrying out Kaneka 1-on-1, a system that aims to drive company growth through personal growth by "lighting a fire in people's hearts."

## **Trust & Respect**

### **Promotion of Diversity**

By going beyond attributes and tapping into diversity, we bring forth new ideas. In this way, we aim to continue delivering unique Kaneka value that amazes the world.





### **Promotion of Wellness**

We are working to improve the wellness of each employee and of our organization. At the heart of this are the ties between our employees.

# Human Resource Development

Development of human resources and leaders centered on Kaneka 1-on-1

### Kaneka 1-on-1

We introduced Kaneka 1-on-1 in 2018 with the aim of using personal growth to drive the Company's growth. A pillar of our human resource development is the idea that "people grow through their work, while companies grow through their people." Our personnel system, which evaluates goal setting and personal growth, is based on this concept.

#### **Adding Further Depth**

We are continuing efforts to enhance the quality of dialogue so that we can add further depth to Kaneka 1-on-1.

#### Examples of Specific Initiatives

#### Holding workshops for business division heads

By allowing business division heads to reaffirm the aims of Kaneka 1-on-1, these workshops help to anchor the system in the organization.

#### Ongoing 1-on-1 training for executives

We provide training for supervisors to enable them to improve their coaching skills and enhance the quality of their dialogues (a total of 594 people have undergone the training).

#### Various forms of 1-on-1 experiments tailored to different workplace situations

We are experimenting with 1-on-1s tailored to different workplace situations. For example, in addition to the usual 1-on-1s between supervisors and direct reports, department heads conduct 1-on-1s with all members who are not direct reports. Going forward, we will expand our success stories horizontally to other workplaces so that we can raise the quality of our 1-on-1 dialogues across the entire organization.

#### Developing the Next Generation of Leaders through Hitotsubu-no-Tane Momi Juku

Hitotsubu-no-Tane Momi Juku, our training program led by top management, aims to train the next generation of management leaders. The chairman, president, and executive vice president join all sessions, a total of 13 days (about 100 hours) over a period of 8 months, directly giving advice. We are

working to increase the participation of women in executive positions and to develop candidates who could become female leaders. Since the program began, a total of 26 division heads have been chosen from among the participants.

#### Number of Participants in Hitotsubu-no-Tane Momi Juku

Fiscal year	2019	2020	2021	2022	2023	Cumulative total since start of course
Number of participants	12	12	12	12	12	109
Of which, female	0	0	3	3	3	10



#### **Training Content Renewal and Change**

#### **Training for Newly Appointed Executives**

We provide opportunities for new executives to learn about leadership and management, mainly in the first year following their promotion.

Examples of Specific Initiatives

#### Workshops on creating a rewarding workplace

Held to ensure that executives understand their roles and responsibilities and direct them toward creating a positive workplace culture.

#### Leadership Challenge Training

Aims to teach leadership fundamentals that can be put into practice to establish conduct.

#### Lecture for newly appointed executives by

Independent member of the board Yuko Sasakawa Independent member of the board Yuko Sasakawa gave a lecture on the perspective and mindset required of a leader.

#### **Expanding Learning Opportunities**

We have expanded our training curriculum with language training (English and Chinese) and e-learning so that we can meet the diverse learning needs of our employees.

We plan to ramp up our investment in areas such as digital education and global human resource development by 1.5 times over the next five years.

Results of Company-wide Training in Fiscal 2022

Others



function-specific





**Human Resource Strategies** 

# Promotion of Diversity

Going beyond attributes to a diversity that nurtures individuality

We are promoting diversity with the aim of making Kaneka an organization where diverse employees with different talents can create new value.

#### Active Participation of Female Employees



#### Percentage of female executives (target): Fiscal 2026 11%

We are steadily increasing the number of female executives and female first level assistant managers (executive candidates). We are promoting the active participation of women through our systems and also by raising awareness. Such initiatives include providing systems to support a healthy work-life balance, facilitating communication with women in senior ranking positions, and efforts to encourage male employees to take childcare leave

#### Promoting the Active Involvement of Senior Employees

In 2021, we introduced a job-based system for senior employees. The system matches departmental recruitment needs with the duties and work styles desired by senior employees when they are

rehired at retirement age. Every year, more than 90% of Kaneka's senior employees choose to be rehired.







Research and development Manufacturing and engineering Sales, management, etc. Percentage of career hires (right scale)

#### Merit-based Promotion

Composition of Executive Team by

Educational Background

Since Kaneka was founded, we have promoted people to executive positions based on their ability and regardless of their educational background. The same applies to the number of years of service.

About 20% of our executive positions are now held by mid-career hires. We will continue to appoint people from diverse backgrounds to executive positions.



### **Reflecting Diversity Efforts into Evaluations of Executives**

From fiscal 2023, we added diversity (diversification of human resources in one's own organization) as a new evaluation item in evaluations for executive positions. At Kaneka, we see diversity as encompassing not only promoting the advancement of



(%)	
50	Percentage of career hires (approximate):
40	Over 40% each year
30	In recent years we have recruited mid-career hires across a wide range of fields such as research and devel- opment, manufacturing, engineering,
20	sales, and management. The number of mid-career hires is continuing on an upward trend.
10	We will continue to aim for over 40% mid-career hires each year as we work to diversify the experience and
(Fiscal year) O	expertise of the members of the organization.

#### Percentage of Executive and First Level Assistant Manager (Executive Candidate) Positions That Are Held by Mid-Career Hires

women, but also creating a supportive workplace and the promoting diverse human resources. With this in mind, we encourage the promotion of diversity in each organization from an evaluation standpoint also

# Promotion of Wellness

Employees who thrive in taking on challenges; organizations and groups that are connected by ties

At its core, the promotion of wellness focuses on enabling each coworker in the Kaneka Group to work with energy and enthusiasm.

#### **Promotion System**

The Engine of Sustainability Management will lead a company-wide task force.

#### Goals of Our Vision for Health

Coworkers Employees who spend their healthy and vibrant lives, and work on their jobs

Organization A workplace where everyone can work healthy and freely as one team, and each person can develop and show the full potential of one's unique character and ability

#### **Measures for Maintaining and Promoting Health**



#### Wellness Promotion System



#### Sports × Kizuna Challenge

With the theme of forming ties through sports, we provide opportunities to take on challenges toward big goals.

#### **Training Plan**

The participants who gathered had a wide range of goals from improving their health by addressing a lack of exercise to completing a full marathon. They enjoyed socializing while working up a sweat under the guidance of a professional coach.



#### Run, Run, Run. Kaneka

Aimed at strengthening ties throughout the Group, this is the largest sporting event in Kaneka. A record number of around 3,500 people gathered at the Nagai Stadium for the event in 2023. For the first time in four years, we welcomed visitors from our overseas Group companies (242 people from 14 countries). The program included a group Ekiden and other activities, and a great time was had by all.

### A Casual Approach to Health Promotion

We provide opportunities for all employees to engage in health promotion in a casual way.

#### Walking Project

Walking Challenge 30

- Ahead of the day, each participant set a goal for the Ekiden event with the aim of improving their physical strength and health. (Participants: 720)
- On the day of the event, participants walked 3.3 km (about 40 minutes) along the same course as the Ekiden runners. (Participants: 128)



#### The Hokkaido Marathon

Kaneka sponsored this event as a Premier Partner. Around 100 runners from the Kaneka Group took part, while many other employees turned out to cheer them on.





### Work Culture Transformation

Kaneka's goal in work culture transformation is to enable smart work. We foster an environment and culture where employees can refine their imagination, creativity, and intuition, to work more efficiently and productively.

#### Creating a Workplace that Fosters Creativity and Enhances Efficiency

At our head offices in Tokyo and Osaka, we have switched to a free address system. By encouraging people to gather and move around, we aim to provide a workspace where communication that had become fragmented can be restored. We plan to roll out this system to other locations such as office buildings at our manufacturing sites so that we can improve the work environment.



#### Shifting to Creative Work through the Use of Digital

By using AI and data, we will not only enhance operational efficiency and digitalization, but also create new value and transform our corporate culture.

As well as developing a digital infrastructure, we will

foster a digital usage culture. In fields other than manufacturing and research and development, such as sales, marketing, and logistics, we will work to promote work culture transformation.



We are promoting automation through the use of real-time data and AI in planning systems to optimize the entire value chain. We are also developing a data platform to support self-service digital transformation in each division.

#### Future Image of the Value Chain







# Think Global, Act Local

## Our global network enabling business development deeply rooted in local communities

We aim to become a company that delivers unique technologies and products all over the world, in order to save human lives and resolve social issues. To do so, we promote activities deeply rooted in local communities worldwide. We advance transculturation from a global perspective. There is no border in chemistry, and when we do business in foreign land, we focus on conducting local-based business (glocal business) by overcoming cultural differences. Our goal is to become a company with a global presence by offering valuable solutions to the world market in a timely manner.



We establish a headquarter in each region in order to make speedy business development that makes much closer connection with the local community.

Each of 4 "Solutions Units" draws up a global strategy for products and services it handles that incorporates both domestic and overseas subsidiaries, and develop business activities based on such strategy.

We have approximately 50 overseas subsidiaries, as well as 2 research institutes in 20 countries overseas. The consolidated number of employees is approximately 11,500, and among them, 3,000 are working in overseas sites.

### **Global Network Strategies**

Globally, our regional headquarters take the lead in drawing up and executing growth strategies with scale and speed. Tapping into the strengths of our Group companies with their local characteristics

enables us to create business models matched to market needs. Through this interlocking of our regional and local operations, we are accelerating the realignment and growth of our global business.

#### Function of Headquarters in Each Region

#### Europe

Within Europe, target environment and wellness as business opportunities, working to expand the biopharmaceutical business and develop environment-related products.

Asia Strengthen local marketing system and map out a market-out type growth strategy that matches growing and expanding market trends.





Kaneka Europe Holding N.V.

Kaneka Asia Co., Ltd.

#### Group Companies with Distinctive Strengths



#### AB-Biotics, S.A.

AB-Biotics sells unique probiotic products that have effects such as reducing the risk of disease. It is the center of our global probiotic business due to its robust research and development capabilities. which use original probiotic strains owned by the Company.





The Americas

Use M&A, alliances, etc., mainly in the healthcare and electronics fields, to develop large-scale business.





Kaneka Americas Holding, Inc.



#### Kaneka Eurogentec S.A.

This biopharmaceuticals CDMO has world-class pharmaceutical production technology. Kaneka Eurogentec provides drug discovery companies around the world with plasmid DNA and proteins as active pharmaceutical ingredients for biopharmaceuticals.

Kaneka Eurogentec, as the core of our biopharmaceuticals business, is leading the strengthening of differentiated technology and driving business expansion

# From Practical Applications at the Manufacturing Site, We Will Create the Future

### The Manufacturing Site Is a Value Center

We will build up a Kaneka's unique manufacturing site by fusing the creativity of technology and innovation with digital technology.

With a manufacturing-first approach based on the concept of a safe and reliable plant, we will focus on maximizing and monetizing our business.

### Realizing a Plant that Creates New Value and Embodies Sustainability

We will speed up our efforts in digital transformation, incorporating cutting-edge technology to evolve our production plants, and increase the speed and scale of our commercialization of new products.

To achieve carbon neutrality, we are tackling the challenge of company-wide efforts and advancing each theme ahead of schedule.

With our energy solution technology, we will also contribute to decarbonizing society, starting with local governments.

### Integration of Manufacturing and R2B+P

By strengthening our R2B+P initiative, which strongly integrates R2B and manufacturing, and scaling up our creativity as part of our routine, we will quickly and competitively implement new technologies.





# Carbon Neutrality

The Kaneka Group aims to reduce Scope 1 and 2 GHG emissions, which include domestic and overseas Group companies, by 30% by 2030 (compared to fiscal 2013) and to achieve carbon neutrality by 2050.

For Scope 1 emissions, we will upgrade our coal boilers to gas turbine co-generation equipment, thoroughly save energy through the efficient recovery of plant exhaust heat, and promote process innovation for energy-intensive equipment.

For Scope 2 emissions, we will promote the use of renewable energy and low CO<sub>2</sub> emission factor for electricity.



\* Since the CO<sub>2</sub> emission factor for electric power companies is subject to change, we expect our emissions to be equivalent to those of fiscal 2013.

### Progress to Date - Identifying GHG Emissions Reduction Themes -

In fiscal 2023, we carried out research activities into<br/>GHG reduction themes at our domestic and over-<br/>seas Group companies for the GHG emissionsreduction of 30% set in our 2030 target. We expand-<br/>ed our reduction themes, including potential ones,<br/>to a cumulative total of 720,000 tons.

#### GHG Emissions Reduction Theme Potential

ltem	Fiscal 2022 Uncovered potential	Fiscal 2023 Additional potential	GHG emissions reduction theme Total potential
1) Fuel conversion	310,000 tons	_	310,000 tons
2) Energy saving	90,000 tons	110,000 tons	200,000 tons
3) Process innovation	100,000 tons	_	100,000 tons
<ol> <li>Use of renewable energy, low CO<sub>2</sub> emission factor for electricity and steam power</li> </ol>	40,000 tons	70,000 tons	110,000 tons
Reducing GHG Emissions Total	540,000 tons	180,000 tons	720,000 tons

#### 1) Fuel Conversion

We are planning to move our decarbonization ahead of schedule by three years (expecting to achieve it by 2027 instead of 2030). Takasago Manufacturing Site plans to install a new gas turbine co-generation system in 2027 as part of our decarbonization and GHG emissions reduction measures in addition, we will as appropriate select

measures. In addition, we will, as appropriate, select type of fuel, including non-fossil fuels, and the amount of electricity that we purchase, balancing economic efficiency and environmental contribution.

#### 2) Energy Saving

We investigated the implementation of exhaust heat recovery technology using heat pumps, including at our domestic Group companies. Together with our ongoing energy saving efforts, this has added a potential reduction of 110,000 tons.



#### 3) Process Innovation

The vinyl chloride monomer production innovation pilot will begin demonstrating GHG reductions in 2024. We plan to include the production of Green Planet<sup>TM</sup> in our uses for hydrogen and  $CO_2$  in the production process.

#### 4) Use of Renewable Energy, Low CO<sub>2</sub> Emission Factor for Electricity and Steam Power

As a Scope 2 reduction measure, Kaneka Malaysia will switch to biomass-derived steam in 2025. Kaneka Group will expand the installation of inhouse photovoltaic power generation systems on plants and other premises in Japan and overseas as we promote the use of renewable energy. At our overseas plants, we plan to use a low CO<sub>2</sub> emission factor for electricity.

# Digital Transformation (DX)

We will transform our operations to meet the needs of the new era. We will achieve digital transformation by promoting production innovation using digital technology and by advancing a digital platform for business throughout the Company.

DX roadmap	2020 2030	Progress
<b>Creating new value</b> Technology establishment and mass production through R2B+P Reform of contacts with markets and customers	Digital marketing Production DX & Carbon Neutral Project Committee	<ul> <li>Started study of carbon footprint</li> <li>Expanding field-led digital themes (Results: 30 projects, approx. 600 million yen/year)</li> </ul>
Field Operation Zero Zero on-site work in the plant	Optimizing costs through production and logistics Using AI to check operational safety Shift to monitoring-driven operations Stabilizing production process	<ul> <li>Setting goals for development of basic technologies for optimizing production plans</li> <li>Achieved FOZ at Tomatoh Manufacturing Site</li> </ul>
<b>Strengthening digital platform</b> Strengthening infrastructure Developing digital talent	Data/communication infrastructure, use of Al Developing human resources for Al and data utilization, and DX planning	<ul> <li>Core system (ERP) update</li> <li>Expanding human resources for AI and data utilization</li> <li>Updating the internal network</li> <li>Deploying integrated data infrastructure</li> </ul>

#### **Strengthening Digital Platform**

### **Digital Talent**

We are expanding the number of personnel who can carry out AI and data utilization in-house, including at domestic Group companies. Fiscal 2023 cumulative total: 320 Fiscal 2030 target: A roughly threefold increase to 1,050

### **AI Infrastructure**

At our production sites, AI is being implemented mainly by highly trained digital personnel We are proceeding with verification of the effectiveness and risk of using generative AI in each business area.

#### **Data Integration/** Communication

Data integration: We are gradually expanding the integrated data infrastructure that connects production to business.

Communication: We are strengthening the communication network that supports digital transformation by expanding IT devices, utilizing images, etc.

#### Increasing Productivity with Field Operation Zero

At the Tomatoh Manufacturing Site (Hokkaido), which is scheduled for launch in May 2024, we will improve productivity by fully automating the medical device production line. We will promote the introduction of renewable energy using our own photovoltaic power generation systems and realize a manufacturing site with a low environmental impact.



### Field-Led AI and Data Utilization That Is Unique to Kaneka

At each site, highly trained digital personnel take the lead in using AI and data infrastructure to solve problems. As of the end of fiscal 2023, we have taken on 120 themes, of which 30 projects have yielded results of approximately 600 million yen per year. We aim to train up to 1,050 Al and

data utilization personnel by 2030, and will promote 100 themes per year (results: approximately 2 billion yen/year).

## (Cumulative total: personnel) 1,200 1,000 800 600 400 200 120 0 2021

Research and development Production

Al and Data Utilizatior	Impact (Millions of yen/year)	
Optimal operation Automatic control	<ul> <li>Optimal automatic operation of the drying process</li> <li>Automatic adjustment of molecular weight in culture processes, etc.</li> </ul>	300
Anomaly prediction (Equipment and quality)	Detecting equipment anomalies to improve operating rate     Prediction system for foaming conditions, etc.	200
Image and sound analysis	<ul> <li>Reducing losses by monitoring the coating furnace exit</li> <li>Detection of print stains, etc.</li> </ul>	50
Plan optimization (Production/sales/inventory)	<ul> <li>Optimization of inventory provisions</li> <li>Production planning optimization, etc.</li> </ul>	50
Total		600





#### Expansion of Human Resources Utilizing AI and Data

