

Asahi**KASEI**

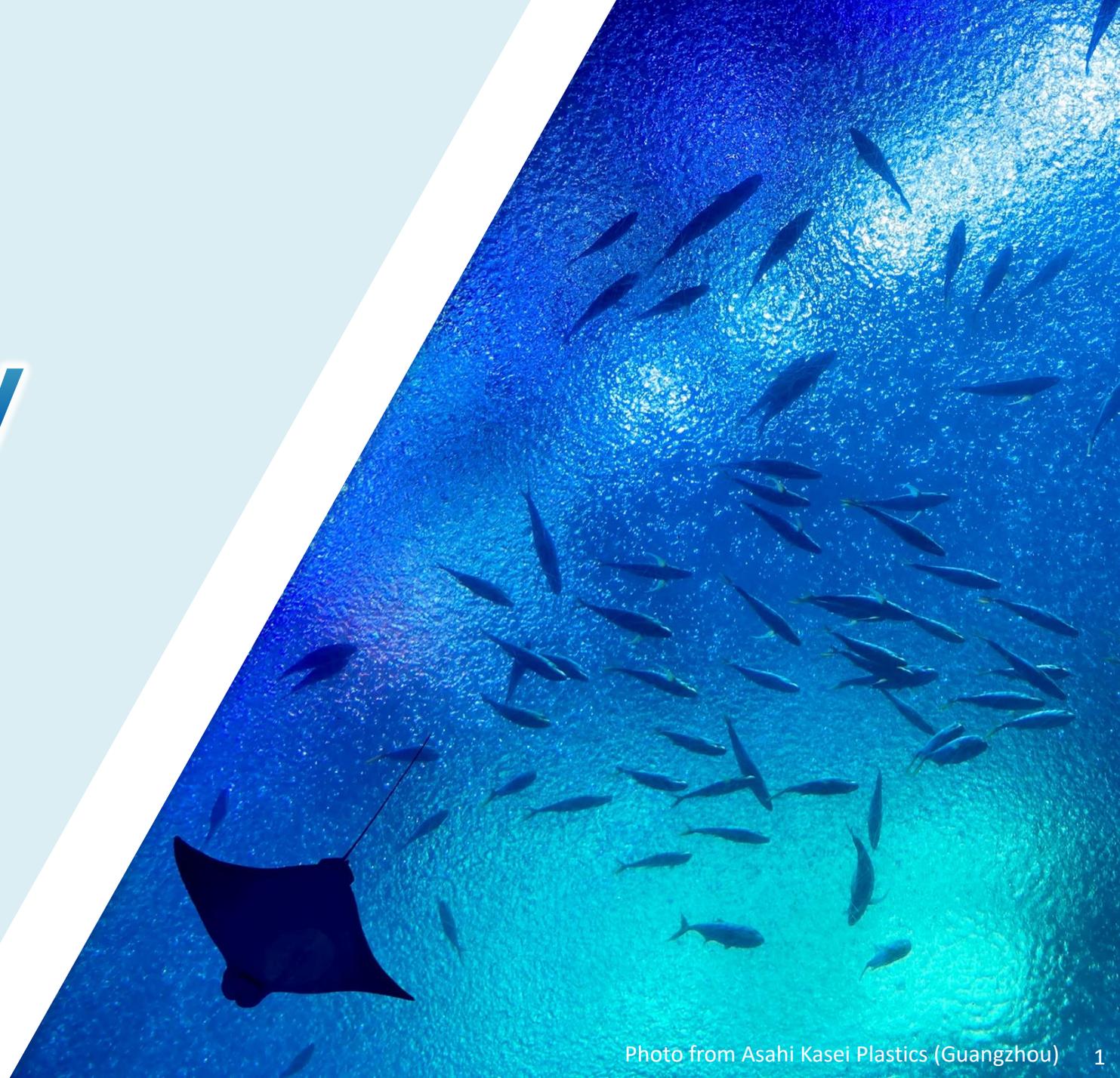
# Sustainability Briefing

**Hideki Kobori**

President

Asahi Kasei Corp.

November 29, 2021



# Outline

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- 1. Basic stance for sustainability**
- 2. Value creation contributing to sustainable society**
- 3. Foundations for value creation**
- 4. Closing**



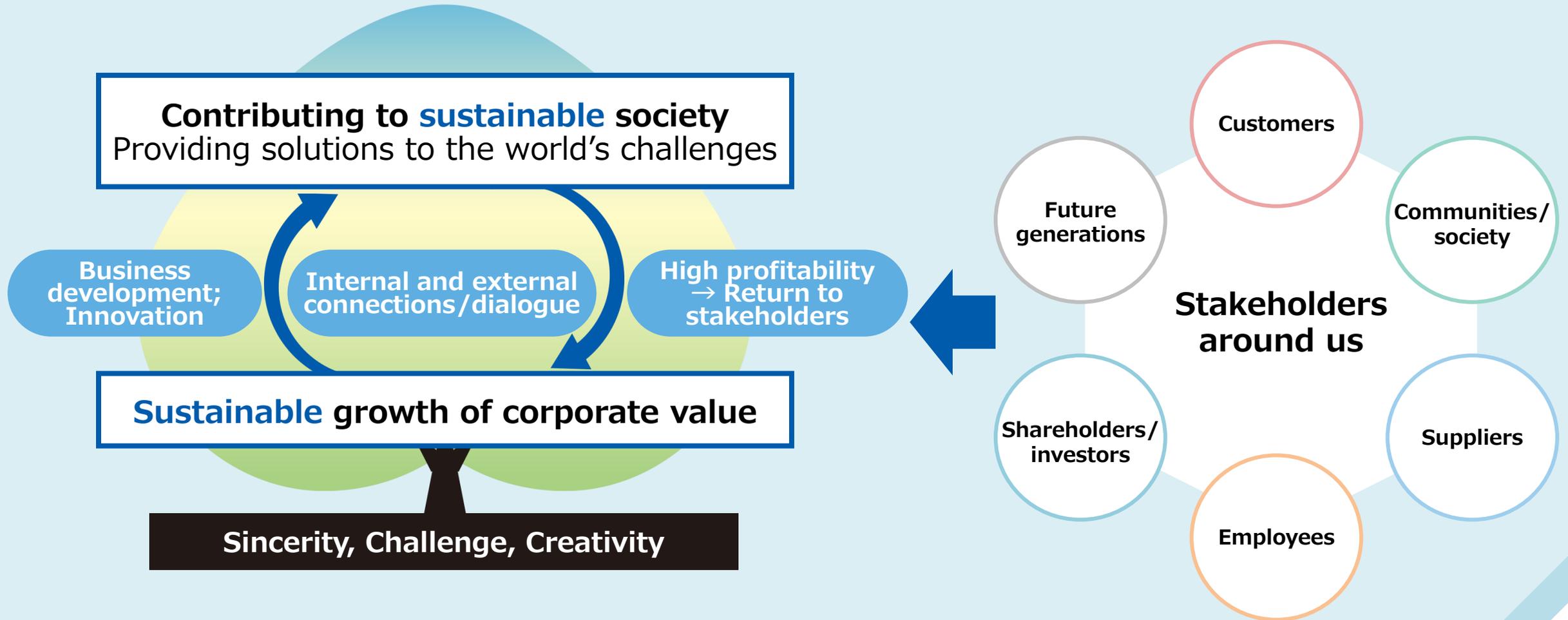
# Basic stance for sustainability



Photo from Sage Automotive Interiors Spain

# Two aspects of sustainability for Asahi Kasei

Meeting the expectations of stakeholders, fulfilling our responsibilities



# Asahi Kasei Group Sustainability Policy

The Asahi Kasei Group is contributing to life and living for people around the world. **We strive for two mutually reinforcing aspects of sustainability: “contributing to sustainable society” and “sustainable growth of corporate value.”** By creating value for “contributing to sustainable society” we seek to gain high earnings that lead to “sustainable growth of corporate value” which enables us to make further contributions in a virtuous cycle. In order to achieve this, **we pursue the optimal corporate governance** while practicing the following.

## Value creation through contribution to sustainable society

- Resolving issues for People and the Earth through our high value-added businesses (*Care for People, Care for Earth*)
- Leveraging our strengths of diversity and capability to change for the creation of value (*Connect, Communication, Challenge*)

## Responsible business activities

- Complying with laws/regulations and respecting international standards regarding business activities (*Compliance*)
- Prioritizing ESH (environment, safety, and health), human rights, and quality assurance throughout all of our activities
- Performing appropriate information disclosure and dialogue with our stakeholders

## Empowerment of personnel

- Respecting diversity and inclusion
- Encouraging each employee’s growth, performance, and challenging spirit

## Greater awareness of importance of sustainability

### COVID-19

Crisis for sustainable life and living

### Climate change

Efforts to limit temperature increase to 1.5°C above pre-industrial levels (COP26)

### Human rights

Awareness of human rights including the supply chain

### Expectations of capital markets

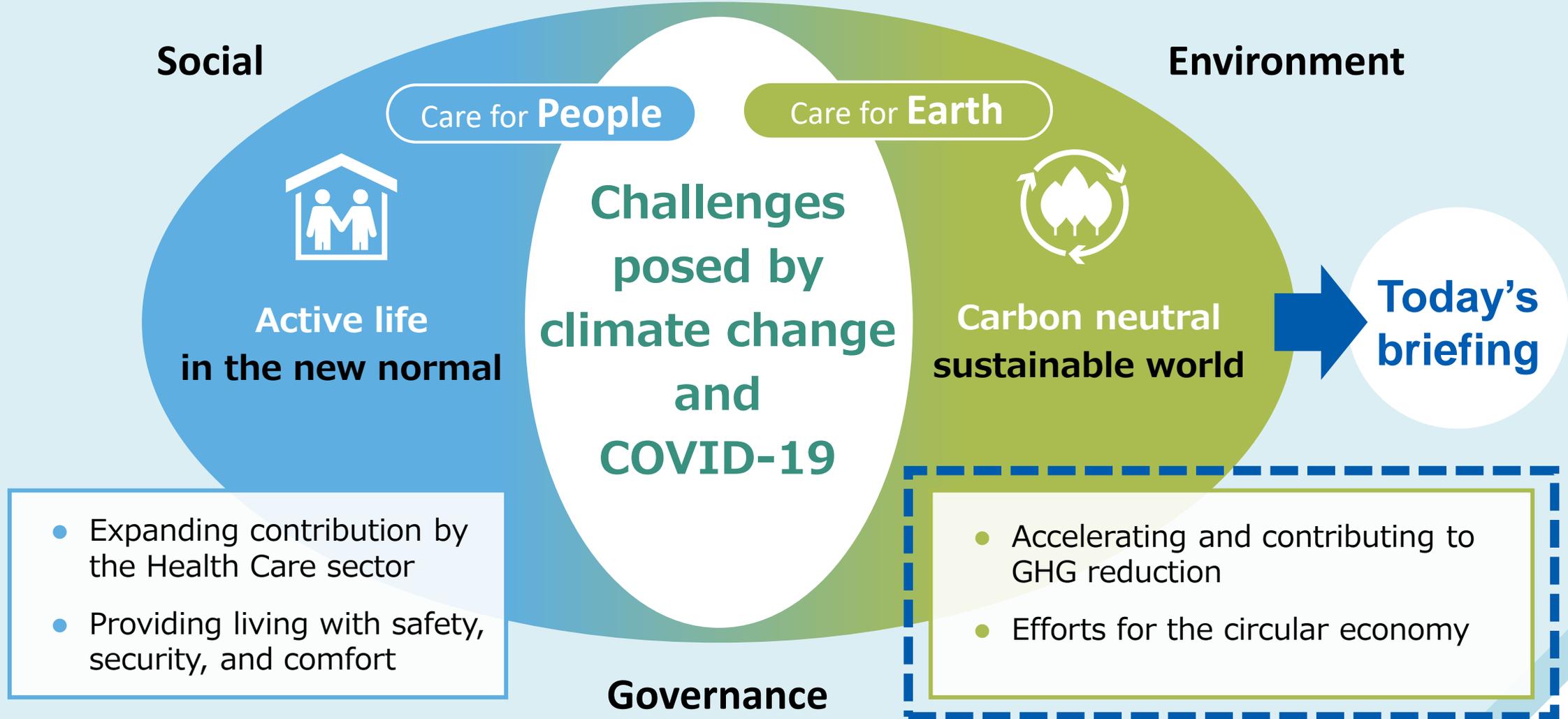
Increased ESG investment

**Meeting expectations of society with two mutually reinforcing aspects of sustainability**

# Value creation contributing to sustainable society



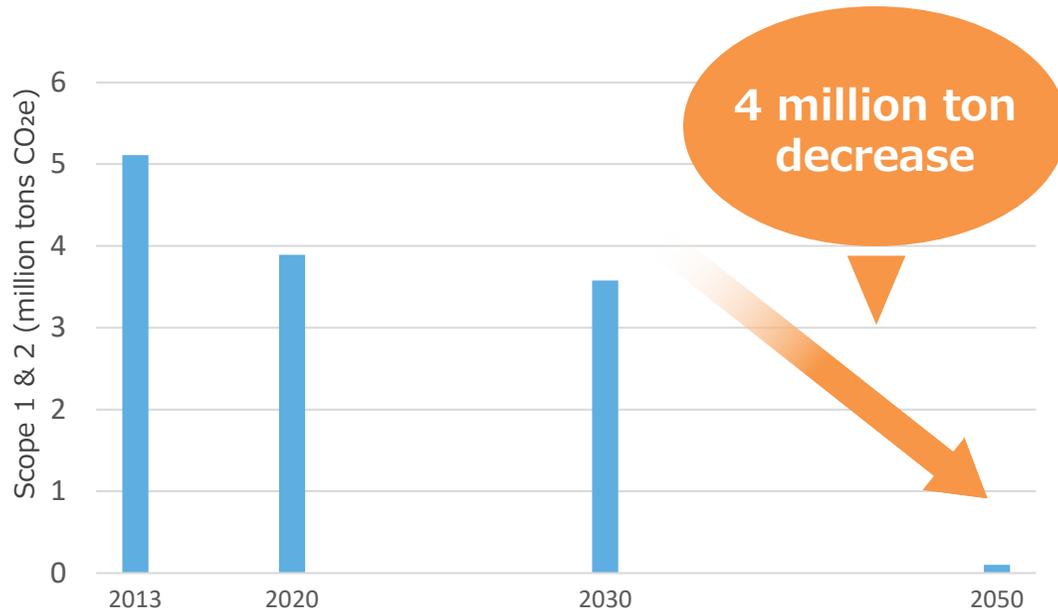
## Asahi Kasei's approach to solutions for social issues from the perspective of ESG



## Reducing our own GHG emissions

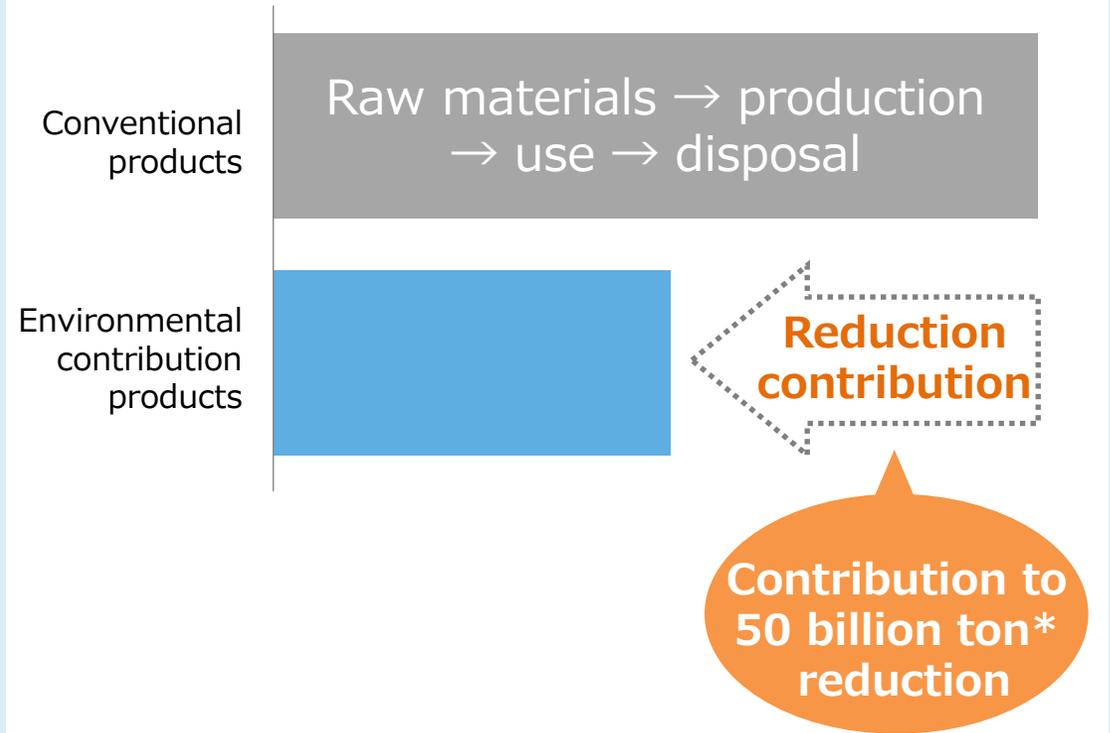
**2050 goal** Carbon neutral

**2030 target**  $\geq 30\%$  reduction (vs. FY 2013)

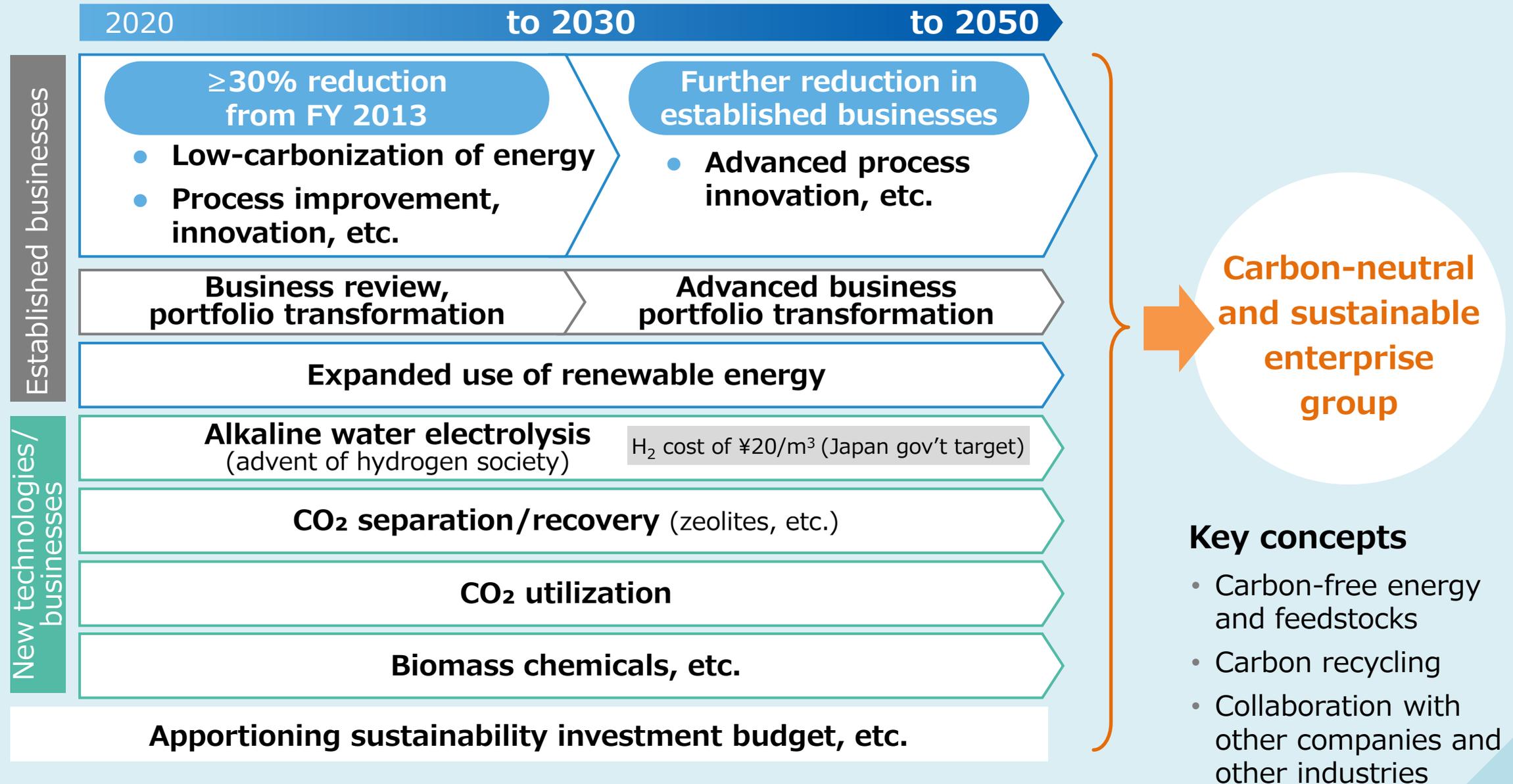


## Contributing to reduced GHG emissions in society

**Environmental burden over total life cycle of products**



\* Global GHG emissions



# Specific measures for GHG reduction and expected effects

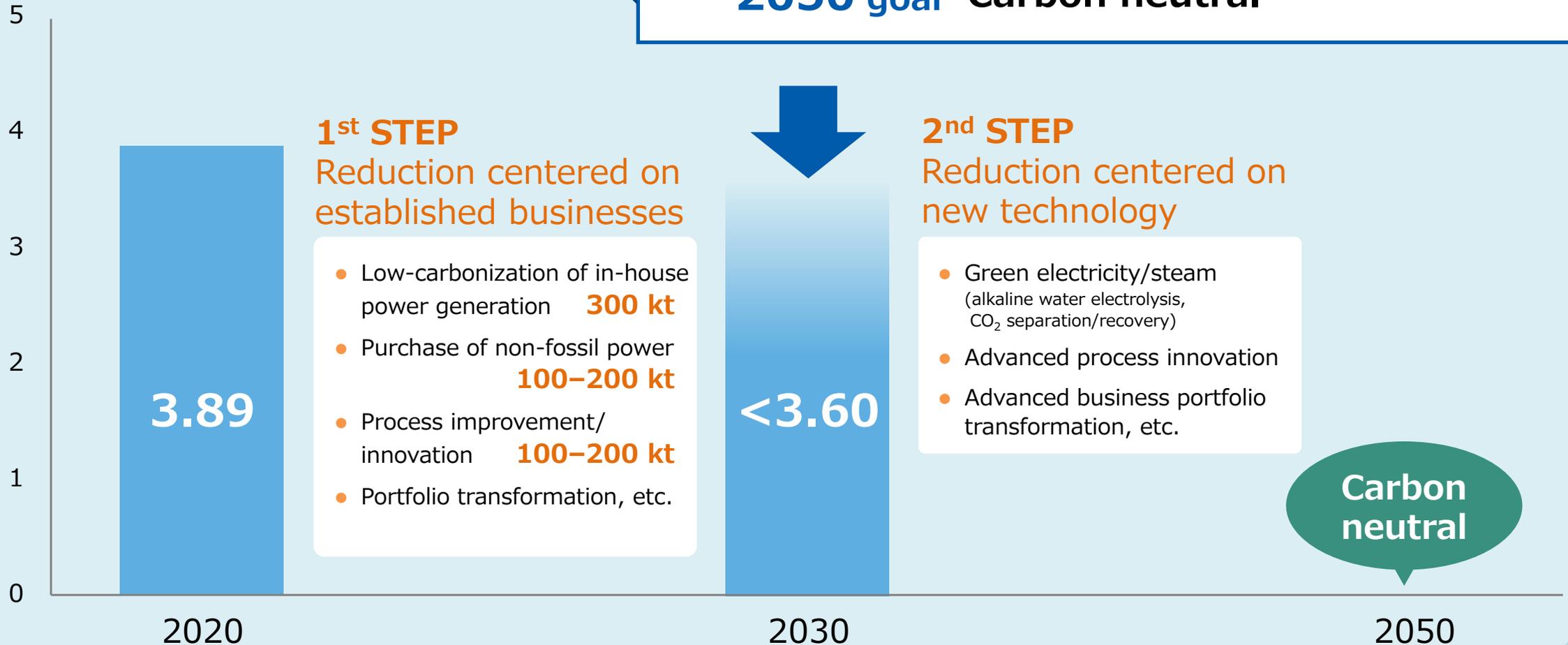
GHG reduction

Reducing our own GHG emissions

2030 target  $\geq 30\%$  reduction (from FY 2013)

2050 goal Carbon neutral

GHG emissions (million tons CO<sub>2</sub>e)



# Framework to advance reduction of GHG emissions

GHG reduction

Reducing our own GHG emissions

Used in analysis of investment efficiency  
.....  
(¥10,000/ton CO<sub>2</sub>e)  
.....

Internal carbon pricing

Project to advance reduction

Formulation and implementation of measures  
.....

GHG reduction

Calculated by product  
.....

Carbon footprint\* calculation

Apportioning sustainability investment budget

Allocating resources to promote sustainability  
.....

\* The total amount of CO<sub>2</sub> emissions throughout the process from extracting resources to product shipment (or delivery to customers)

## 1 Fully leveraging hydroelectric power plants

- Preparing for the next century, sequentially renovating and enhancing our 9 hydroelectric power plants in Kyushu (including use of green bond)



Gokase River Hydroelectric Plant

## 2 Increased use of solar power

1. Installing photovoltaic systems at our plants
2. Expanding internal use of photovoltaic power generated on Hebel Maison apartment buildings

- Use at Kawasaki Works began in August 2020
- Use at Head Offices in Hibiya and Jinbocho scheduled for April 2022



AsahiKASEI  
ASAHI KASEI HOMES

Renewable energy from photovoltaic systems (including environmental value)



Electricity mainly from thermal power



Environmental value from Asahi Kasei Homes



Tokyo Midtown Hibiya



Jinbocho Mitsui Building

AsahiKASEI AsahiKASEI  
ASAHI KASEI HOMES

# Business growth with environmental contribution (expanding environmental contribution products)

GHG reduction

Contributing to reduced GHG emissions in society

Target

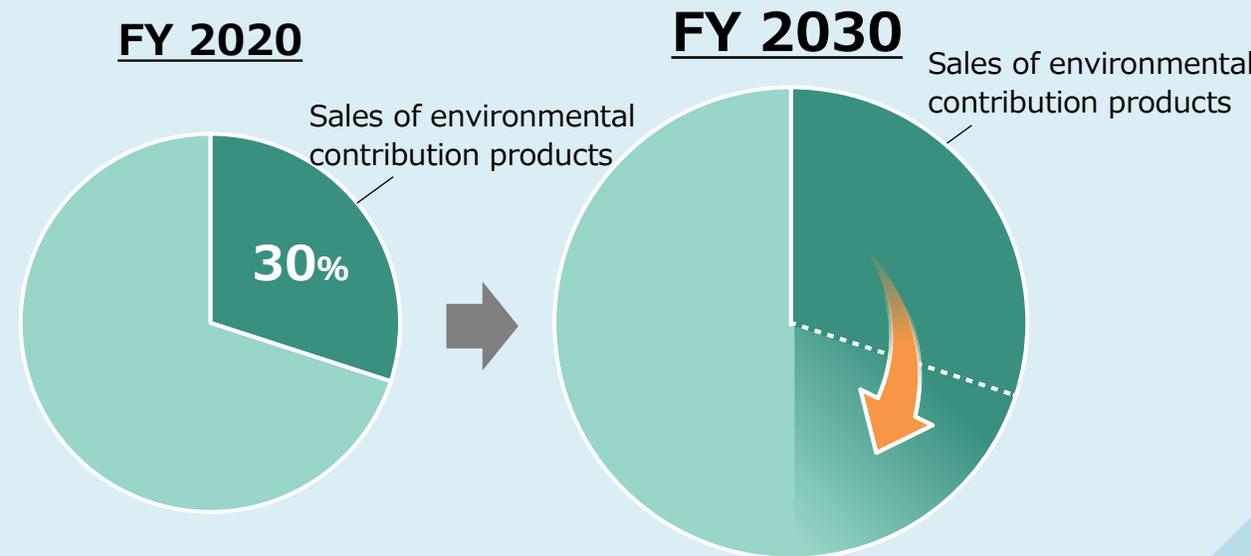
FY 2030

- At least double contribution to GHG reduction
- Increase sales ratio of environmental contribution products

### GHG emissions reduction by environmental contribution products



### Sales ratio of environmental contribution products (excluding Health Care sector\*)



Calculated by LCA based on opinions of outside experts

\* Health Care sector focused on adding value in **Care for People**

# Notable environmental contribution products (1)

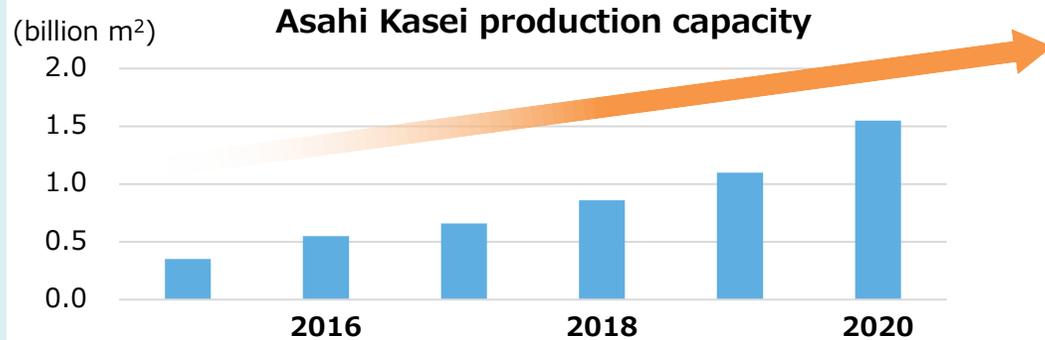
GHG reduction

Contributing to reduced GHG emissions in society

## Li-ion battery separator

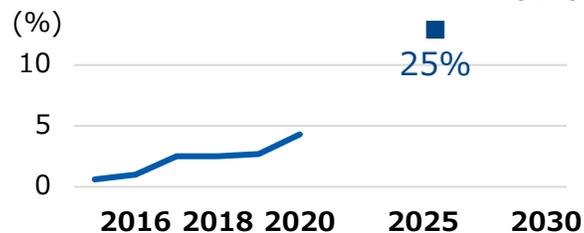
Energy storage

Low-carbonization



## Growth driven by automotive applications

### Electric vehicle (BEV, PHEV) market share



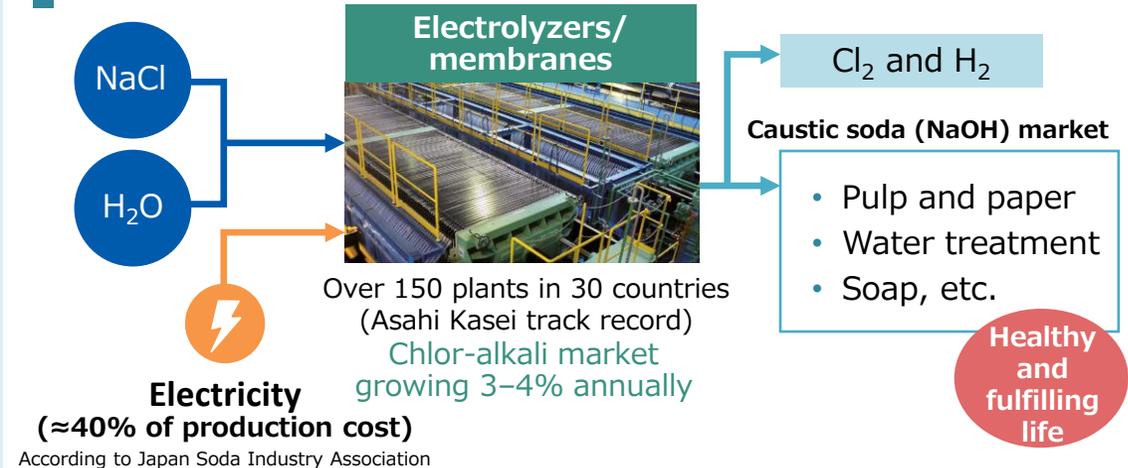
Based on "Electric car sales share in the Net Zero Scenario" by the IEA

### Targets in major markets

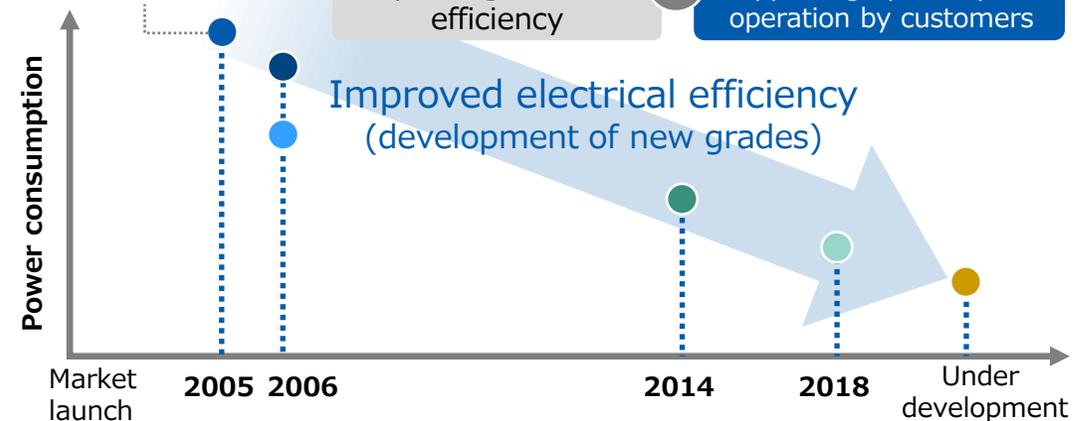
- New vehicle sales in 2030
- US Electric vehicles ≥50%
- New vehicle sales in 2035
- EU Zero-emission vehicles 100%
- Japan Environmentally compatible vehicles 100%
- China Environmentally compatible vehicles 100%

## Ion-exchange membrane chlor-alkali process

Energy saving



### Membrane grades



# Notable environmental contribution products (2)

**GHG reduction**

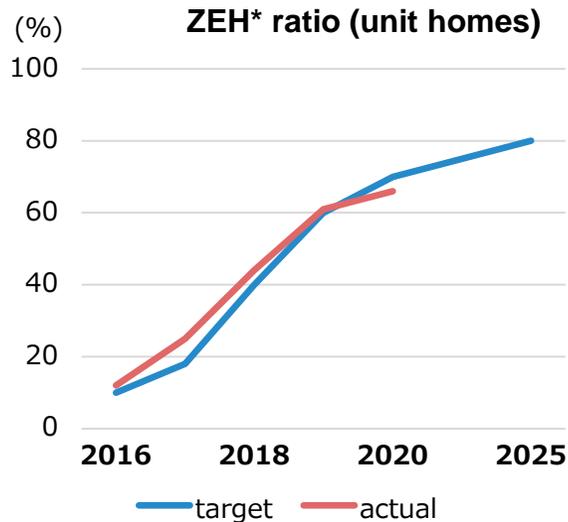
**Contributing to reduced GHG emissions in society**

## Hebel Haus and Hebel Maison

Energy saving

Resource saving

- **Long service life**
  - Over 60-year durability of basic structure
  - 60-year gratis inspection program
- **Energy saving and solar power generation**



**Advancing ZEH standards for multi-dwelling homes (ZEH-M)**

\* Net Zero Energy Homes achieved by high-performance thermal insulation, energy saving, and solar power generation, etc.

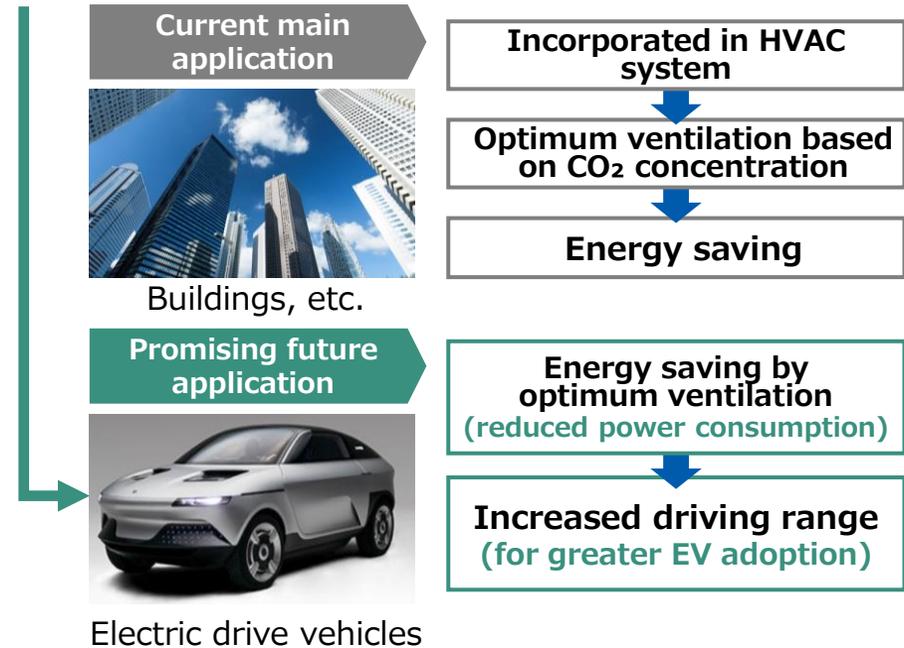
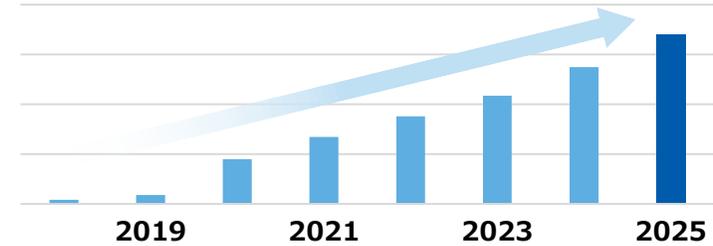
## CO<sub>2</sub> sensors

Energy saving



CO<sub>2</sub> sensor module

### CO<sub>2</sub> sensor sales



Low-cost green hydrogen

Green chemicals utilizing green hydrogen

## Green Innovation Fund Project

FY 2021–30  
Approximately ¥75 billion

## Hydrogen Production by Water Electrolysis Using Renewable Energy, and Green Chemical Demonstration

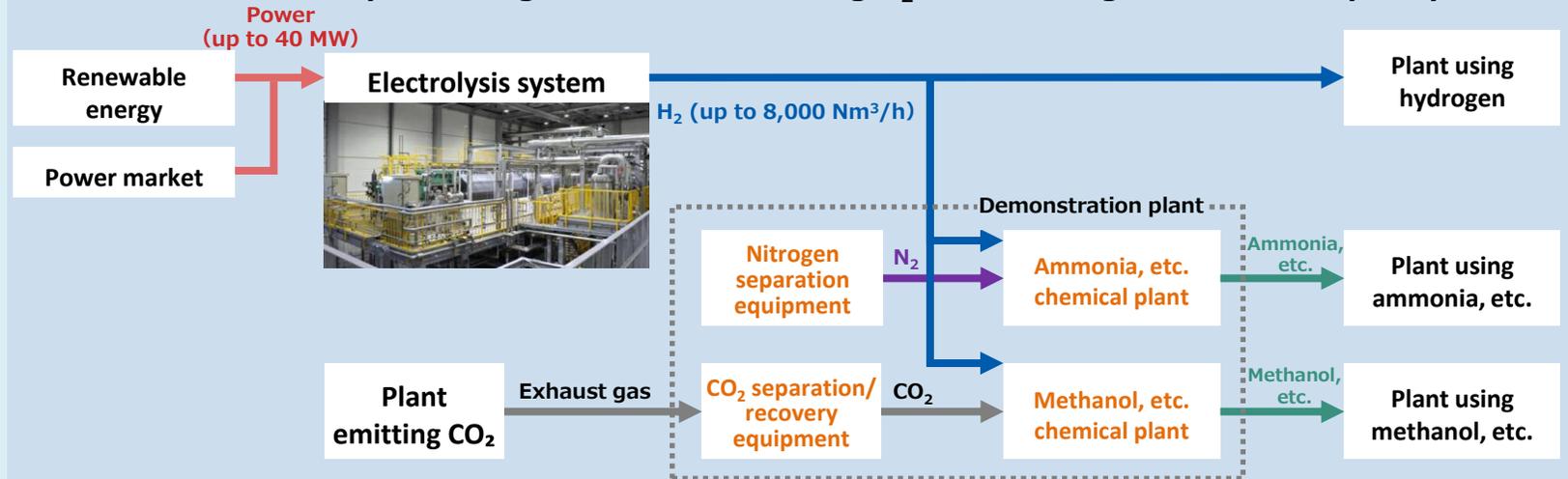
Joint project with JGC Holdings Corporation

### Phase 1

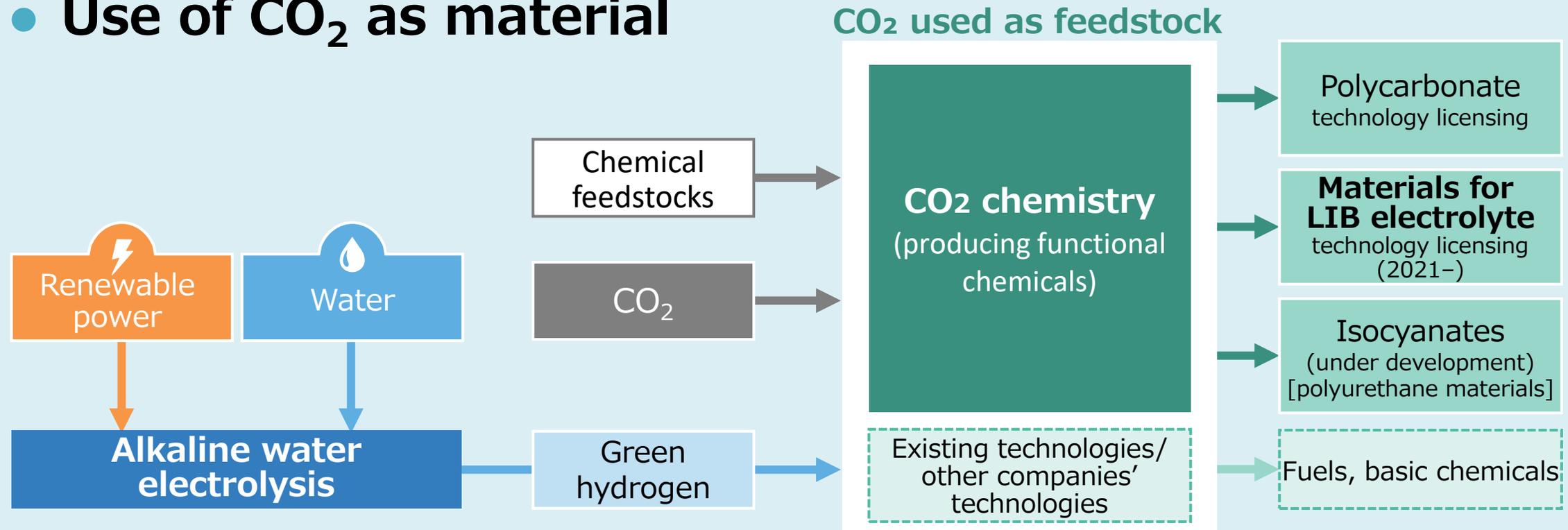
- Technological development for scale-up and modularization of the alkaline water electrolysis system
- Development of integrated control system (optimal operation of overall process)

### Phase 2 (FY 2027–)

Demonstration of synthesizing basic chemicals using H<sub>2</sub> from the large-scale electrolysis system



## • Use of CO<sub>2</sub> as material



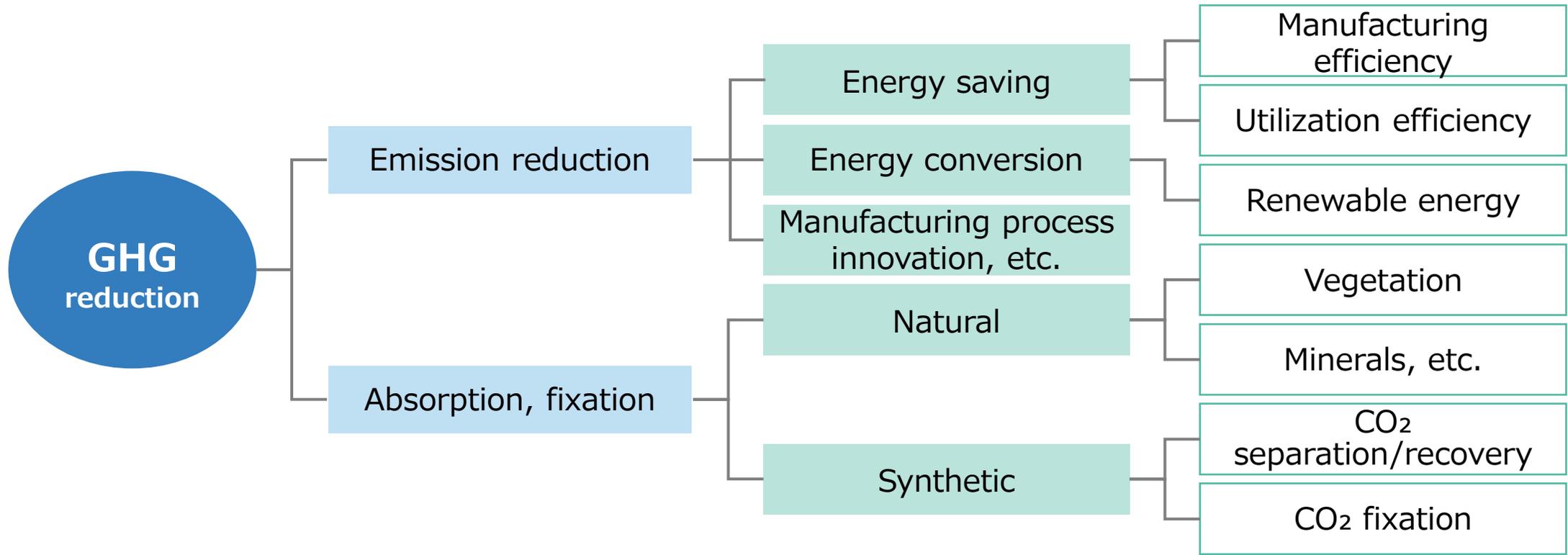
## • CO<sub>2</sub> separation/recovery (CO<sub>2</sub> recovery from mixed gases)

- Development of zeolite to adsorb CO<sub>2</sub> from mixed gases of CO<sub>2</sub>/N<sub>2</sub> and CO<sub>2</sub>/CH<sub>4</sub>
- Studying verification with biogas

# Contributing to GHG reduction in society from various perspectives

GHG reduction

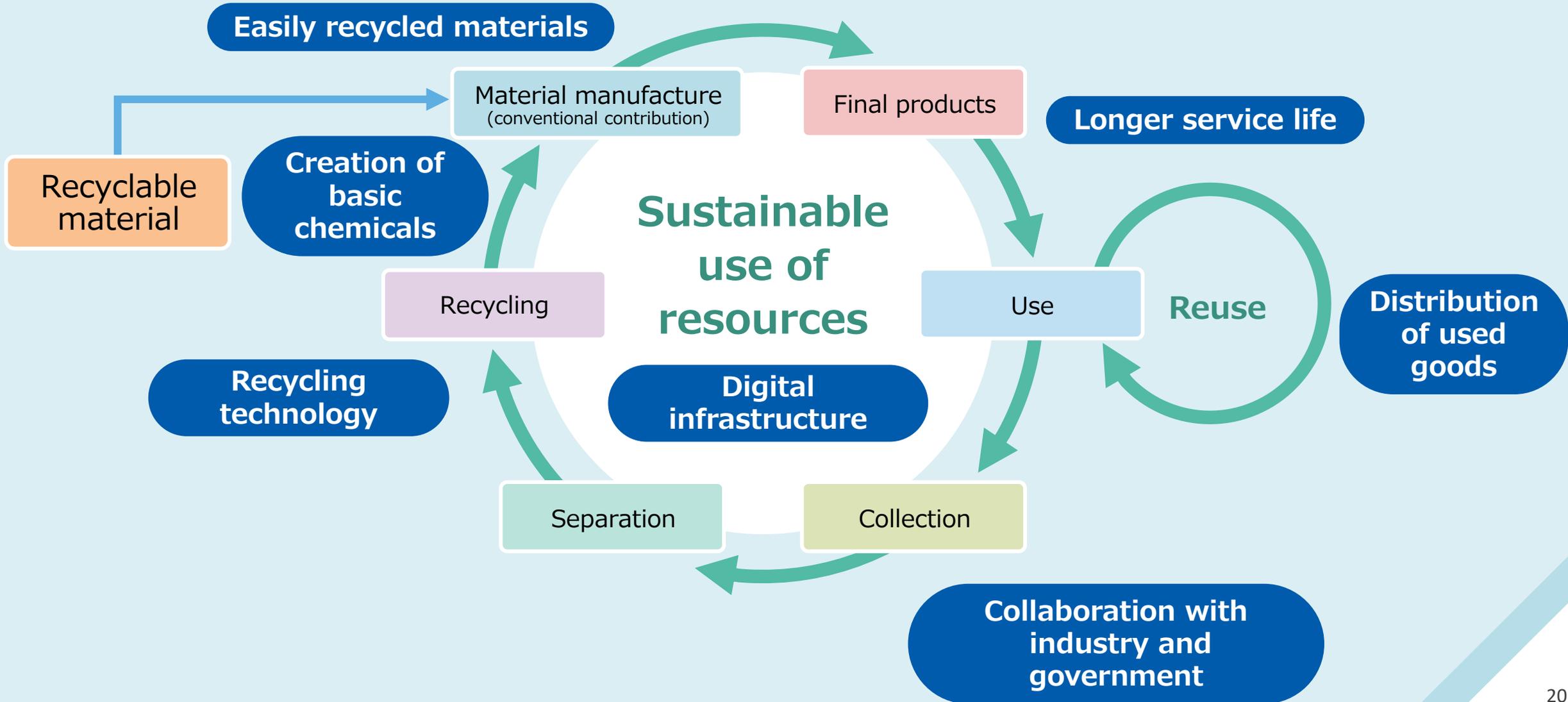
Contributing to reduced GHG emissions in society



**Diversified businesses/technologies of Asahi Kasei**

# Efforts for a circular economy

Asahi Kasei contribution



### Established value chains

#### Recycling technology

- Polystyrene (PS)  
Chemical recycling
- Polyethylene (PE)  
Material recycling

#### Sustainable raw materials

- Recycled material
- Biomass feedstock

Digital platform  
promoting circularity

**BLUE Plastics**



Studying  
overseas trials  
in addition to  
trial in Japan

### New value chain



Fresh Logi cloud-based fresh produce  
logistics solution

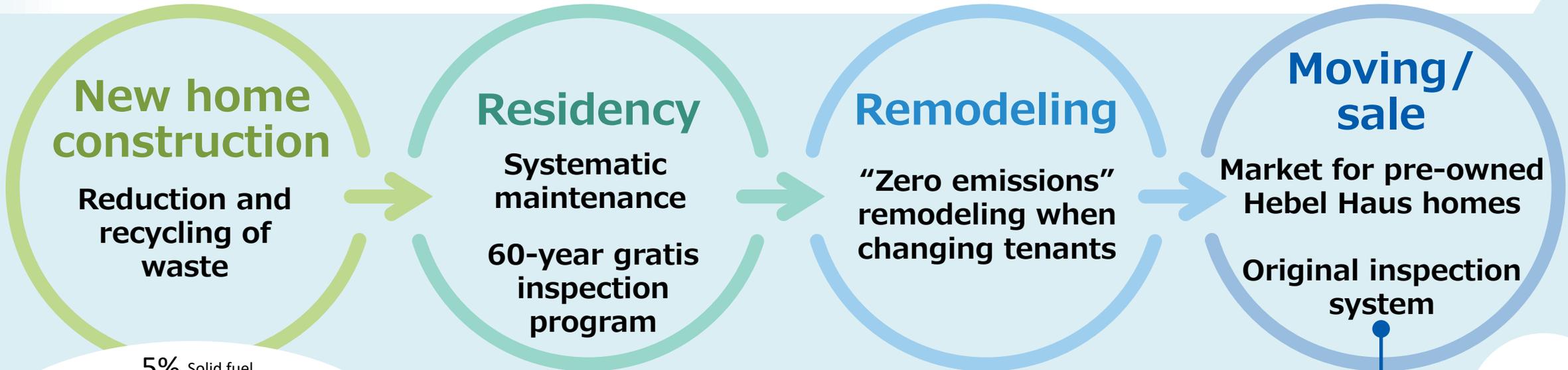
- Fresh produce delivered in non-refrigerated trucks
  - ✓ Use of insulated boxes
  - ✓ Energy saving, reduced food loss



### Longer service life, 3Rs (reduce/reuse/recycle)

#### Longer home service life

ALL for LONGLIFE  
HEBEL HAUS



*my* **DESSIN**

- Universal floor plan for long-term ease of residency and ease of future sale
- Guarantee of sale when moving



Fostering circulation

# Foundations for value creation

- **DX (digital transformation)**
- **Intellectual property**
- **Human resources**



# Value creation by DX

## Leveraging digital technology to connect, overcome, and co-create



DX銘柄2021\*  
Digital Transformation



Efficient work, high quality, analysis, faster R&D



New value creation, business model innovation



Actualizing latent value in the Asahi Kasei Group

### Materials informatics

AI and statistical analysis for more efficient materials R&D

### IP landscaping

Visualization of IP information for new business creation, etc.

### Production technology innovation

Automated product inspection, increased productivity, prediction of equipment malfunctions, etc.

### Carbon footprint visualization

Visualization of CO<sub>2</sub> emissions from resource extraction to customer delivery

### Blockchain technology

Digital platform fostering resource circulation

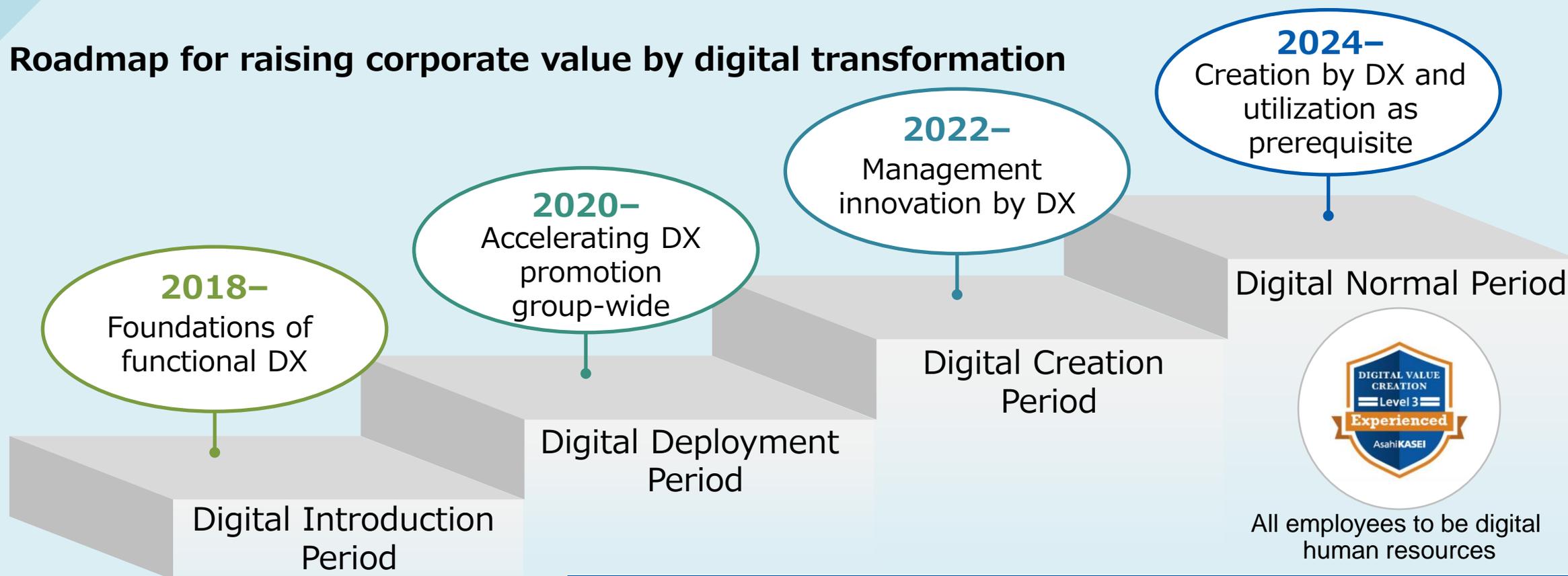
### Internal and external co-creation

Fostering internal and external interaction, strengthening DX platform and business creation

\* Asahi Kasei has been selected as a Digital Transformation Stock (DX Stock), an initiative conducted jointly by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange

# Efforts for digital transformation (DX)

## Roadmap for raising corporate value by digital transformation



DX education for all Asahi Kasei Group employees  
**Open Badge program launched in 2021**

- Level 1** Basic understanding
- Level 2** Practical skills and knowledge
- Level 3** Using DX to improve work processes, etc. (target for all employees)
- Level 4** Strengthening business competitiveness
- Level 5** Driving organizational and business reforms

# Value creation by IP

## Advancing measures for new business creation leveraging strength in IP landscaping (IPL)

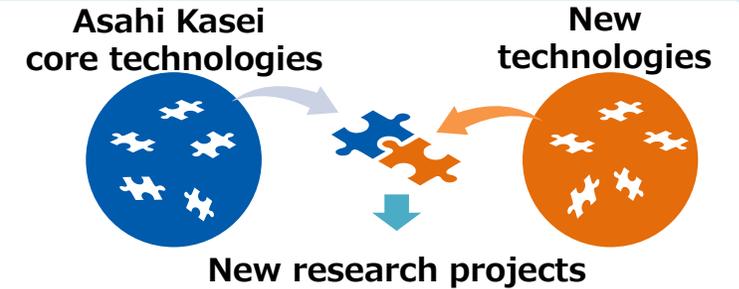
### Examples of measures for new business creation



Analytical skill fostered with IPL

#### New research projects leveraging core technologies

- ➔ Using IP information to analyze compatibility and match Asahi Kasei core technologies with new technologies



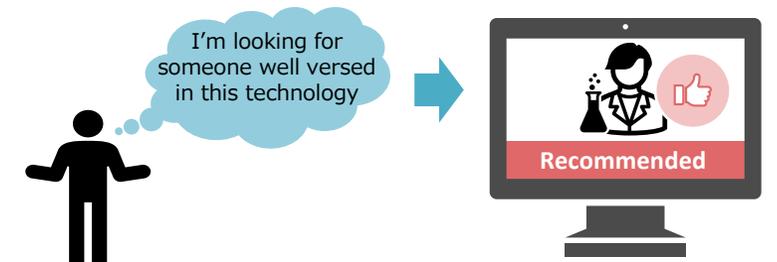
#### Idea creation workshop

- ➔ Fostering innovation through shared IP analysis to connect diverse technologies and marketing functions



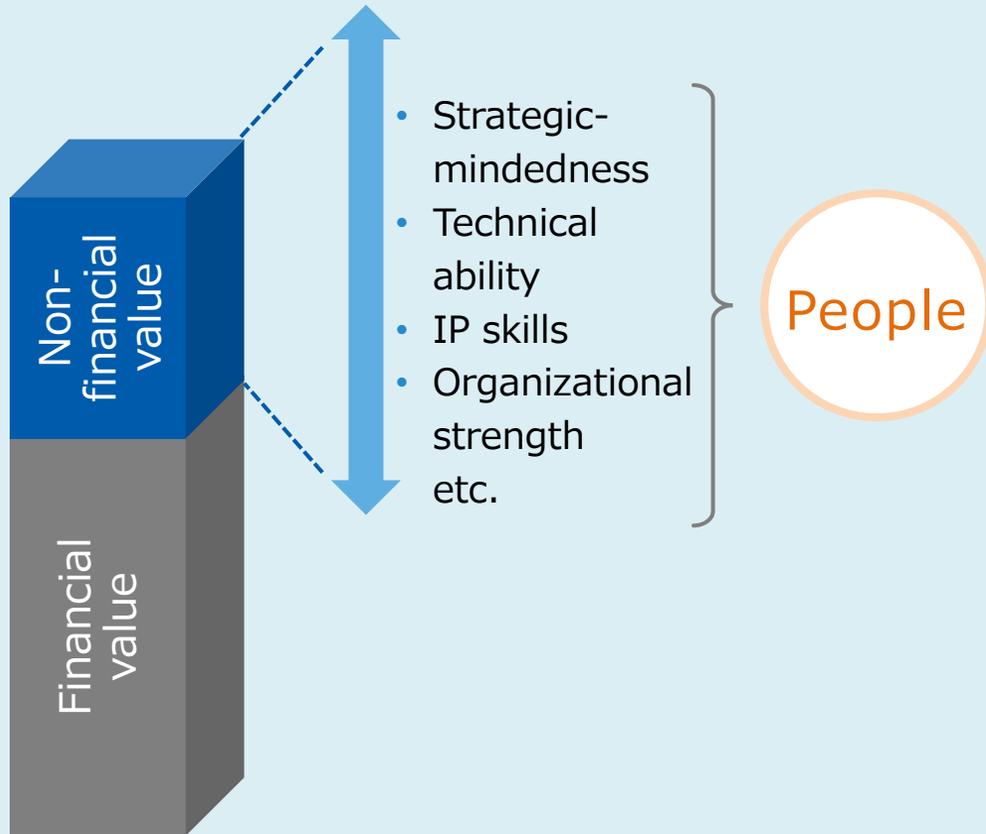
#### Personnel recommendation system "SPACE"

- ➔ Internal personnel search based on inventors of patents, etc. (promoting connections)



# Strengthening human resources

## Enhancing engagement and growth of people as source of value creation



## New survey system (2020)

Environment where diverse personnel can thrive

### Organizational health checkup

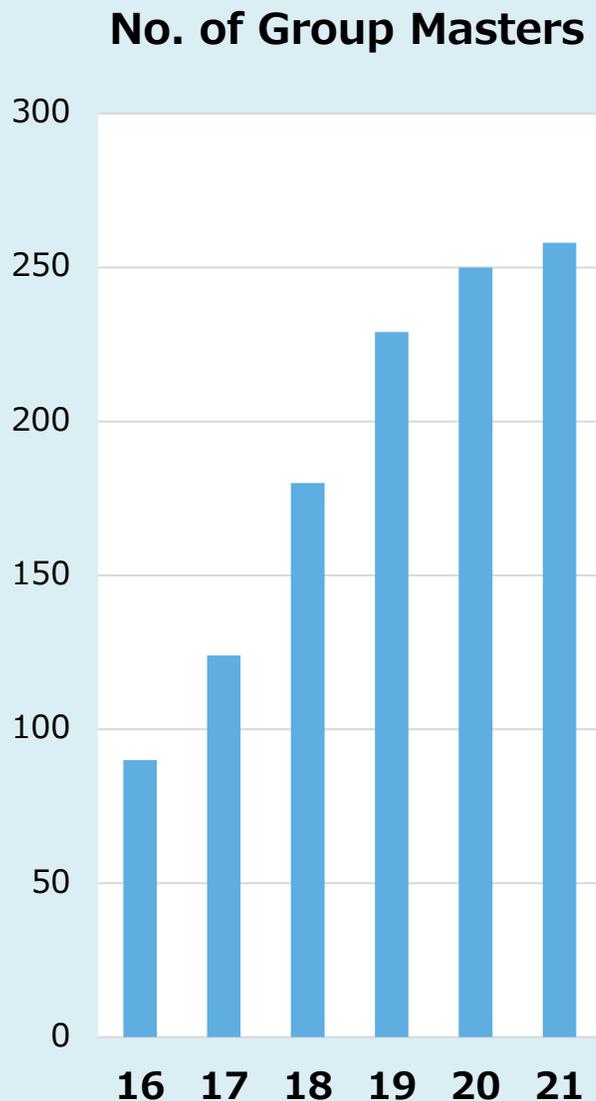
Behavior that leads to growth

Work engagement

Workplace atmosphere

# Group Masters Program

Fostering personnel for new business creation/business enhancement



**Business sector areas**

- Homes
- Material
- Health Care

**Core technology areas**

- Fibers
- Membranes/ separation
- Electrochemistry
- Polymers
- Compound semiconductors
- Catalysts/ chemical processes/ inorganic synthesis
- Analysis/ computer simulation
- Process development/ construction technology
- Product design/ precise control
- Plant technology
- Digital innovation
- Biotechnology

**Core platform areas**

- Operational safety
- Quality assurance
- Chemical management
- Trade/customs
- Accounting/ taxation
- Organizational development
- IT
- IP
- Legal, etc.

# Health and Productivity Management

**Raising productivity through maintenance and enhancement of health of employees and their family members, leading to sustainable growth of corporate value**

KPIs	Purpose	FY 2024 targets*
Rate of employees with metabolic syndrome	Prevention of lifestyle-related diseases	30% decrease ↓
Rate of employees who smoke		40% decrease ↓
Rate of employees with severe lifestyle-related diseases		30% decrease ↓
Rate of employees who miss work for mental health reasons	Prevention of long-term leave, fostering activity and growth	30% decrease ↓

\* Compared to FY 2019

## FY 2020–21

- Establishing system for health and productivity management
- Propagation of policies, etc.
- Promoting activity (at main sites in Japan)

## FY 2022–24

- Expanding to more sites
  - Japan: Main independent plants
  - Overseas: Start of global application

## FY 2025–

- Heightening activity
- Health and productivity management entrenched group-wide
- Evolving to wellbeing management

# Raising internal awareness for sustainability

## Thinking and acting to achieve the two aspects of sustainability

### Knowing about sustainability

#### Sustainability education

Rank-based training, global environment seminars, internal magazine, digital learning, etc.

#### *Sustainability for Asahi Kasei*

Under Cs+ 2021, we aim to contribute to the world's sustainable development.  
What is sustainability and how do we contribute?  
This is the first of a series of articles on sustainability.

vol. 1

#### President Hideki Kobori comments on sustainability.



**Hideki Kobori**  
President

#### Q What is sustainability?

The concept to realize a sustainable world. The world faces pressing challenges such as global warming, food and water shortages, poverty, and discrimination. In order to live with hope for the future, we need to tackle those issues.

### Thinking about sustainability

#### Global photo contest

Photo contest among employees worldwide focused on sustainability

#### Sustainability Photo Contest

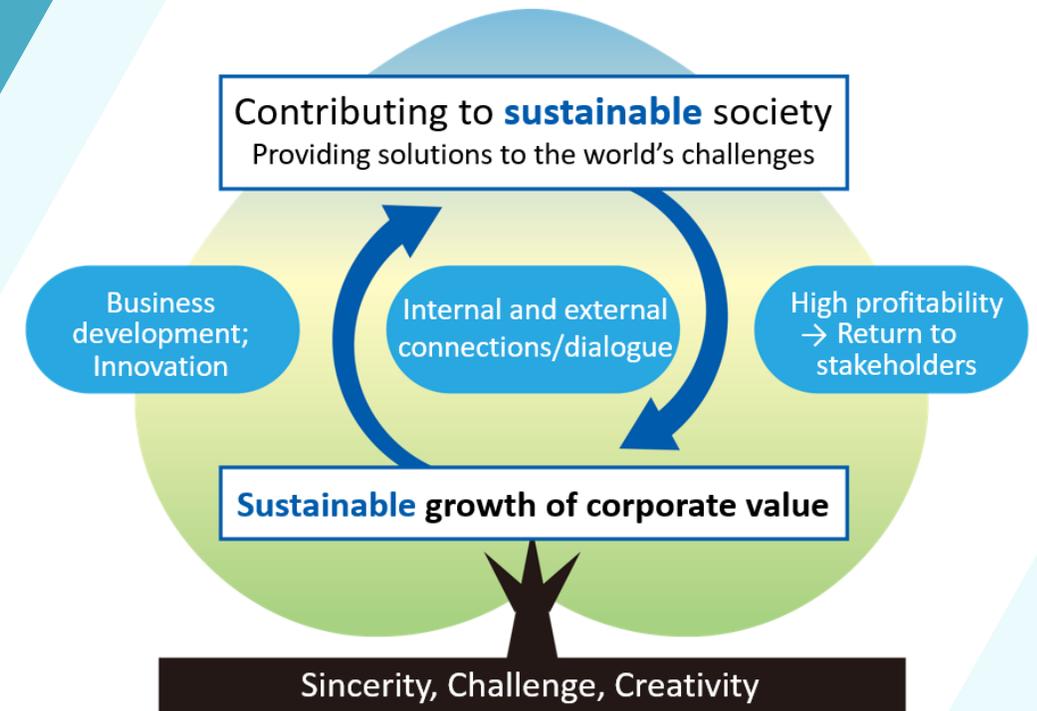


Care for  
**People**  
Care for  
**Earth**

### Fostering action for sustainability

Including in evaluation systems, etc.

# Closing



# Leveraging digital technology while pursuing sustainability

## Green



Photo from Sage Automotive Interiors Spain

## Digital



## People



Photo from Asahikasei Plastics (Thailand)

# Creating for Tomorrow

The commitment of the Asahi Kasei Group:

To do all that we can in every era to help the people of the world make the most of life and attain fulfillment in living.

Since our founding, we have always been deeply committed to contributing to the development of society, boldly anticipating the emergence of new needs.

This is what we mean by "Creating for Tomorrow."

**AsahiKASEI**

# Appendix

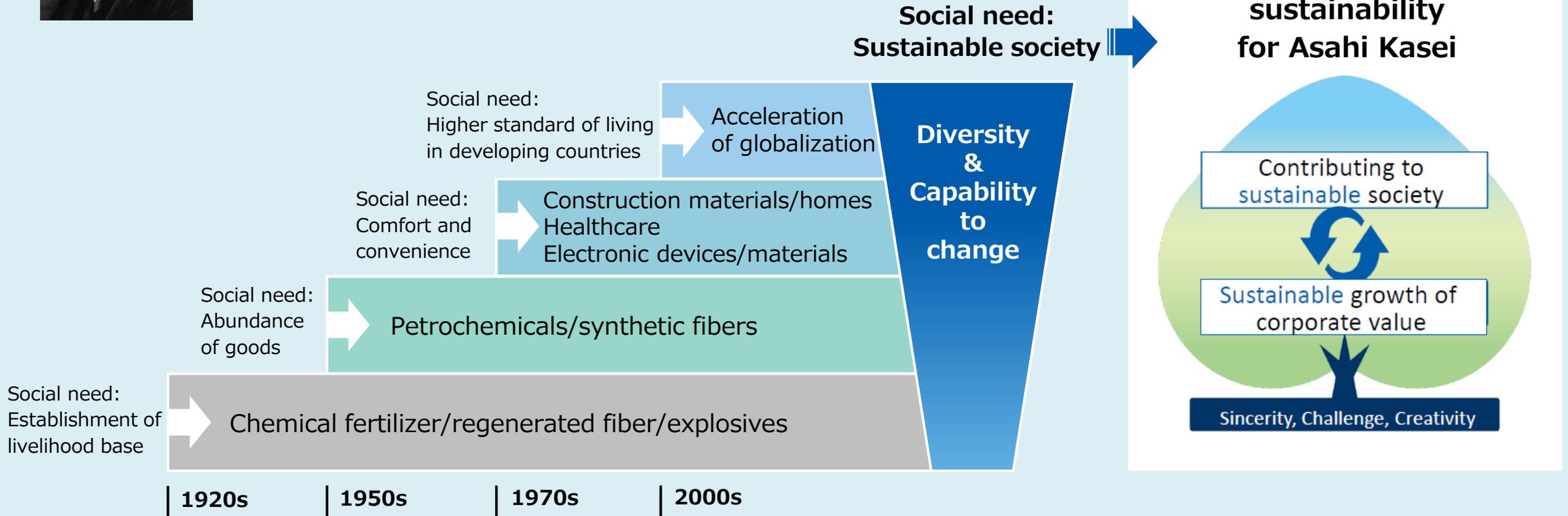


# Meeting the needs of society (the Asahi Kasei Group's past and future)



## Vision of founder Shitagau Noguchi

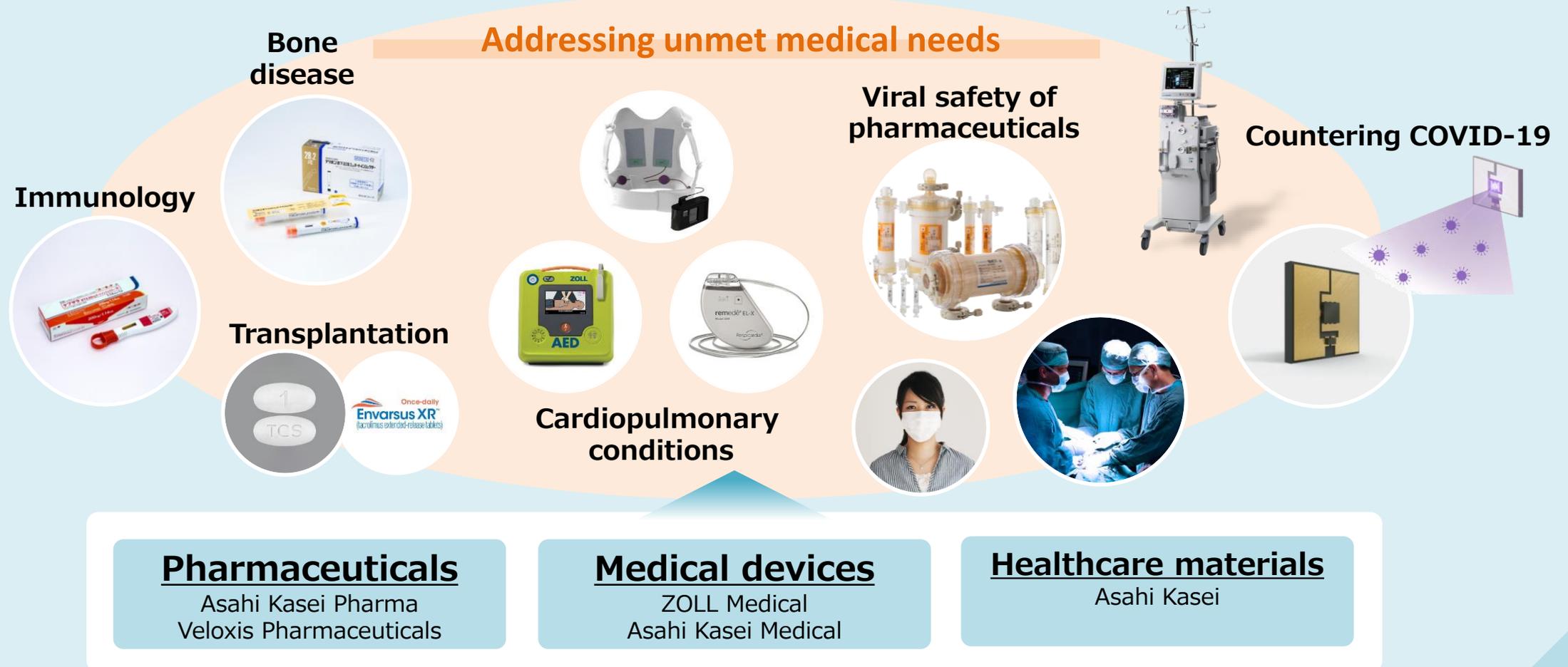
"As industrialists, we must always remember that our ultimate mission is to improve people's standard of living by supplying an abundance of the highest-quality daily necessities at the lowest prices." (1933)



**Developing businesses that make life better while grasping social needs and transforming ourselves**

# Efforts regarding “Care for People”

From the perspective of “Care for People,” achieving healthy longevity with security and comfort is essential for leading active life in the new normal. We leverage the strengths of our businesses to address unmet medical needs around the world.



# ESH (environment, safety, health) and quality

No issues related to water and air  
No landfilling of industrial waste

## Quality that ensures safety and security

- Quality education, fostering personnel for quality
- Complaint analysis; improvement
- Strengthening quality assurance system

Accurate grasp and understanding of laws and regulations

Framework to prevent violations  
“Chemical Management Portal”



Environmental protection

Consideration for biodiversity

Quality assurance

Process safety

Asahi Kasei Group

Material

Homes

Health Care

Occupational health and safety

Managing chemical substances

Community outreach

Information disclosure using website, reports, etc.  
Dialogue with community members

## Prevention of accidents

- In-house screening at capital investment stage
- Platform to control operation
- Applying lessons from past accidents

## Preventing spread of damage

- Emergency drills

Life Saving Actions program

Health and productivity management

# Respect for human rights

Asahi Kasei  
Group Code of  
Conduct

Human  
Resources  
Principles

Procurement  
Policy

Supplier  
Guidelines



Asahi Kasei Group  
Human Rights Policy  
(currently formulating)

## Basic perspectives

- Respect for human rights throughout the value chain
- Observance of international norms
- Cooperation with business partners

## Practicing respect for human rights

- Compliance (working hours, wages, safety and health)
- Prohibition of compulsory labor, slavery, child labor
- Prohibition of discrimination and harassment, etc.

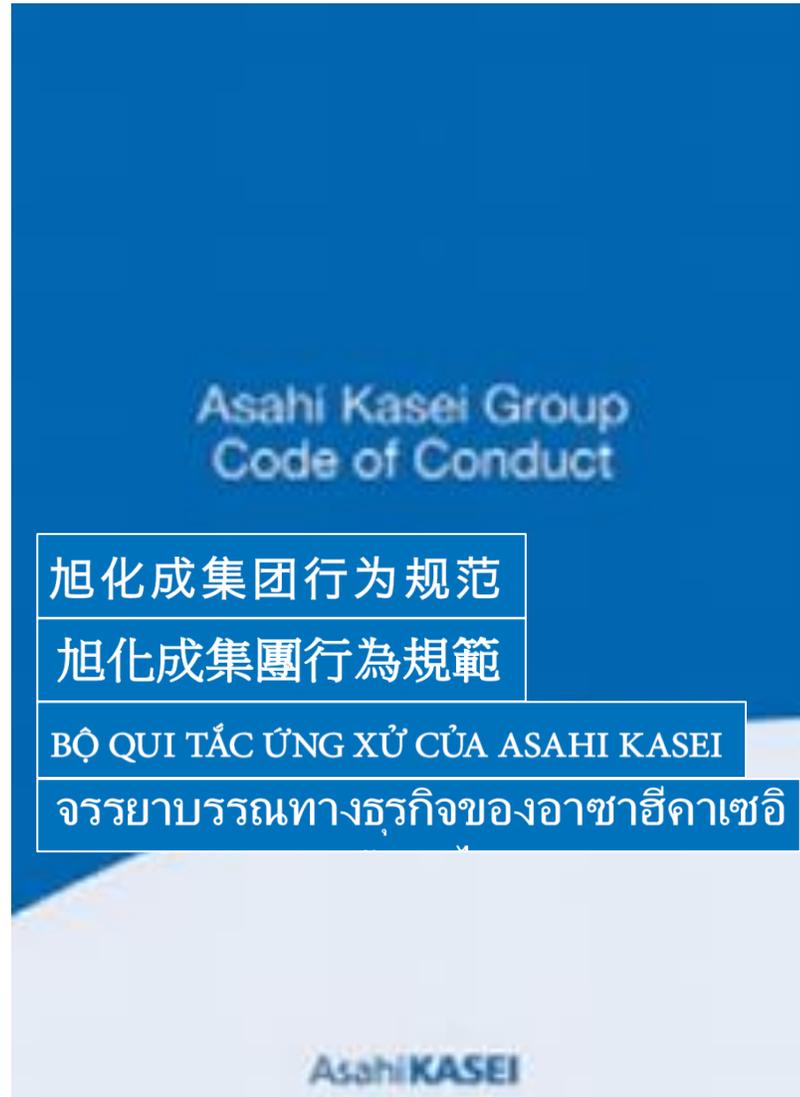
## Advancing respect for human rights

- Due diligence for human rights
- Human rights reporting and consultation hotline
- Human rights education, etc.



Numerous human  
rights violations  
around the world

# Thorough compliance



## Practicing compliance and corporate ethics

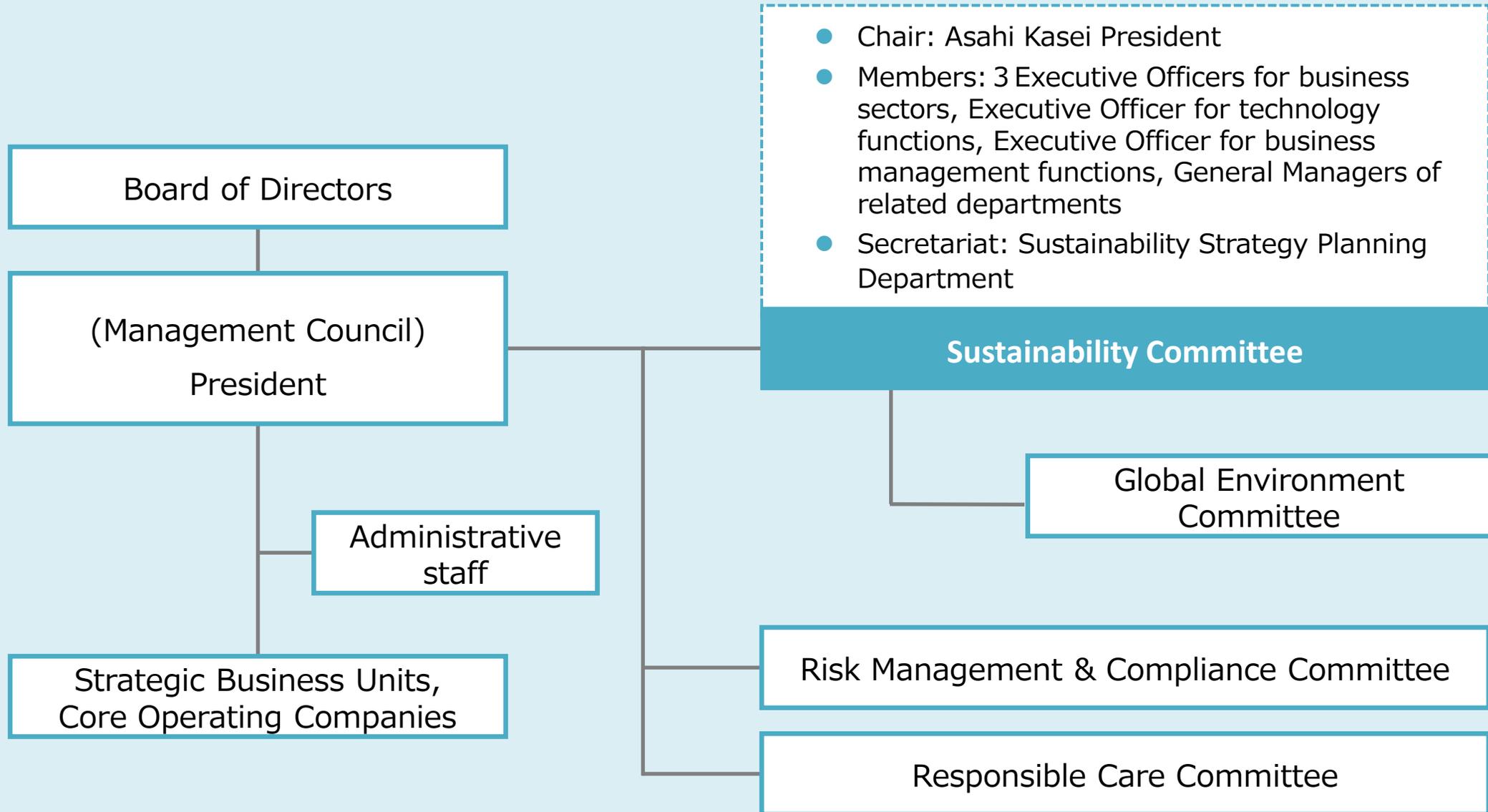
The Asahi Kasei Group thoroughly complies with each country's laws and regulations, and prepares and appropriately implements internal rules. When judgement is difficult based on laws, regulations, and internal rules, we act with sincerity.

Discussions in workplaces  
using comic-strip examples

Risk management and  
compliance case studies



# Framework for Sustainability



(as of November 29, 2021)

# External evaluation

Evaluating organization	Index/name	Evaluation of Asahi Kasei
<b>MSCI</b>	MSCI Japan ESG Select Leaders Index	Adopted as a constituent stock AA (AAA-CCC)
<b>MSCI</b>	MSCI Japan Empowering Women Index (WIN)	Adopted as a constituent stock 6.7 (max. 10)
<b>FTSE</b>	FTSE Blossom Japan Index	Adopted as a constituent stock 3.4 (max. 5)
<b>S&amp;P</b>	S&P/JPX Carbon Efficient Index	Adopted as a constituent stock
<b>SOMPO Asset Management</b>	SOMPO Sustainability Index	Adopted as a constituent stock
<b>CDP</b>		Climate Change A- (A-D) Water Security A- (A-D)

## Major initiatives participated in

Global Compact

BUSINESS CALL  
TO ACTION



Clean Ocean Material Alliance

White Logistics  
Movement