

Asahi**KASEI**

Sustainability Briefing

Hideki Kobori
President
Asahi Kasei Corp.

December 1, 2020



1 Basic Sustainability Concept

2 Care for Earth

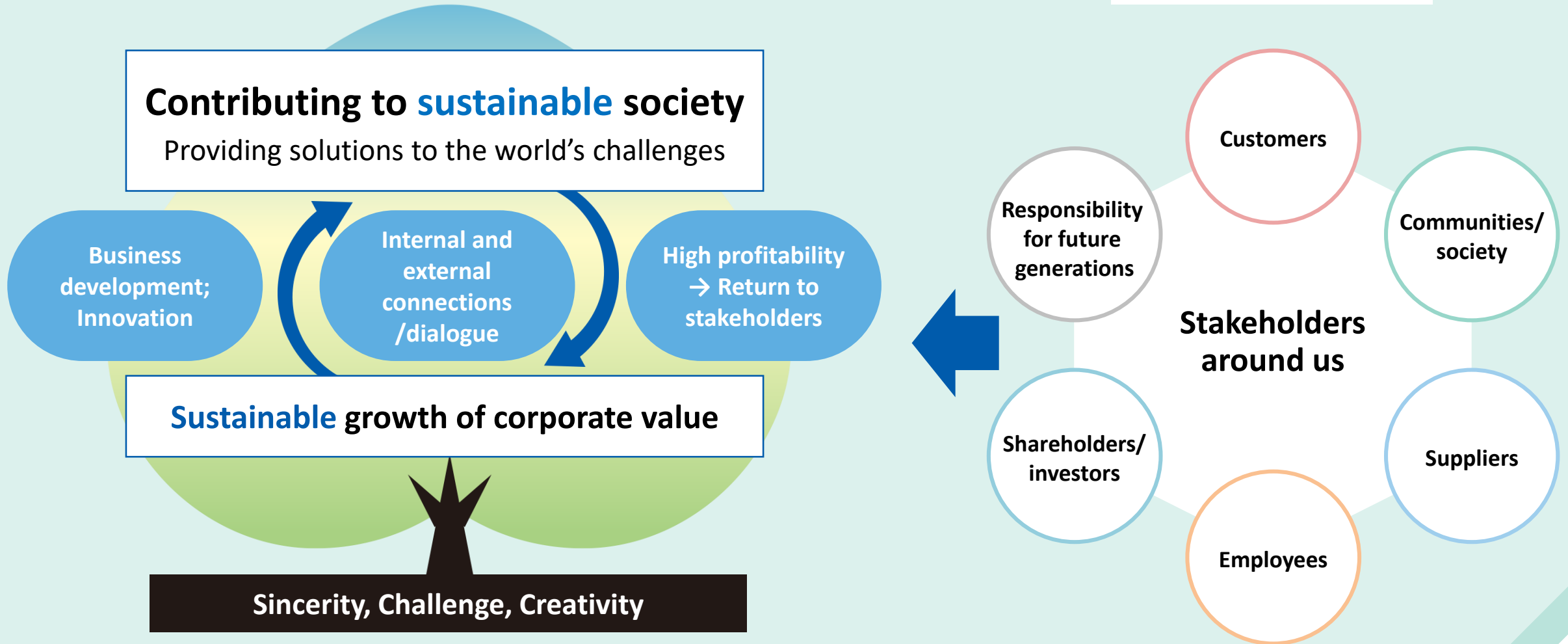
3 Care for People

4 Summary

Basic Sustainability Concept



Two aspects of sustainability for Asahi Kasei



Focusing resources on sustainability



Contributing to sustainable society

Group Mission

Contributing to life and living for people around the world

Priority fields for provision of value

Environment & Energy

Mobility

Life Material

Home & Living

Health Care

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

Employee action principles

Compliance Communication
Challenge

Creating new value

Connect

Strengths

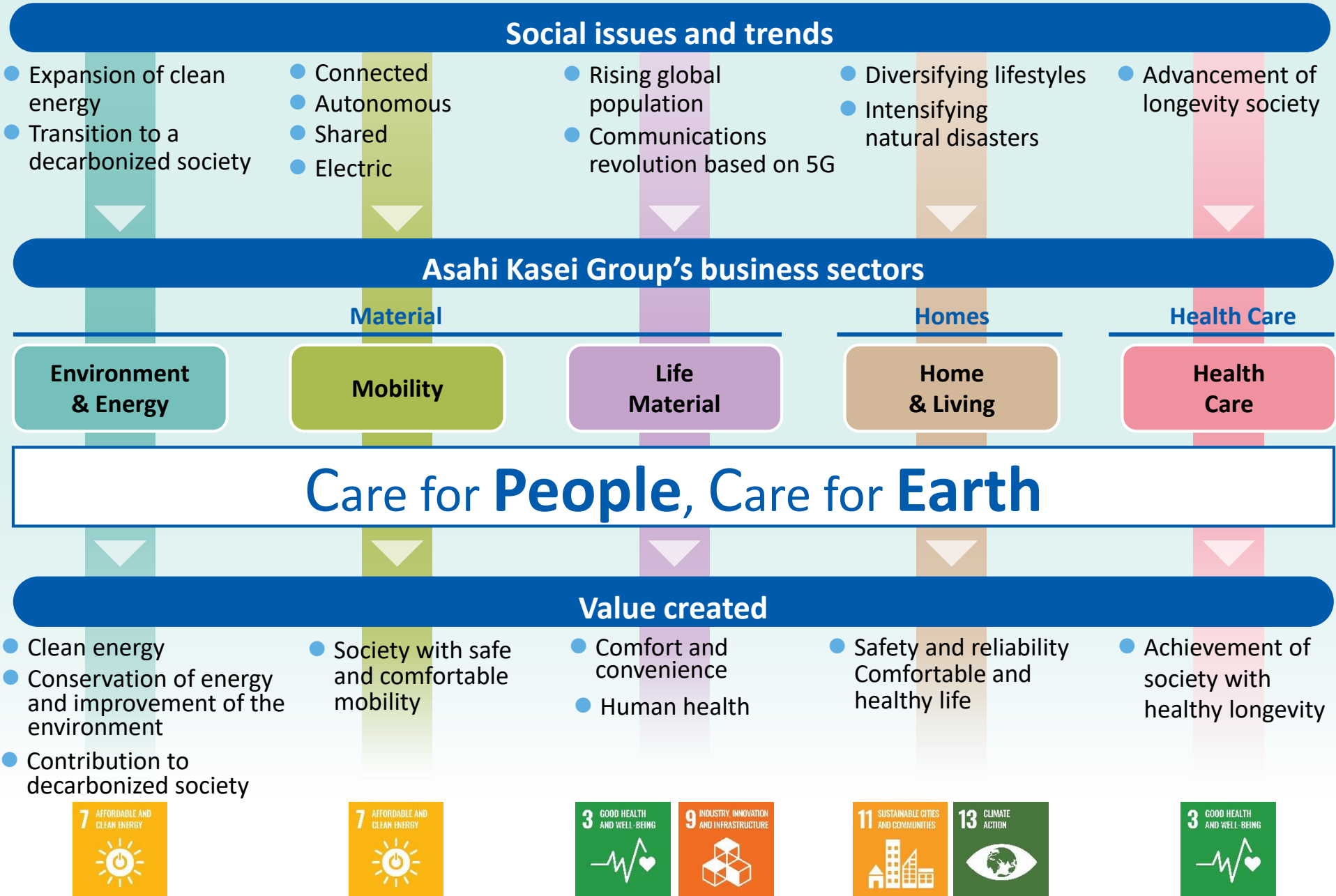
Diversity & Capability to change

Solutions to social issues

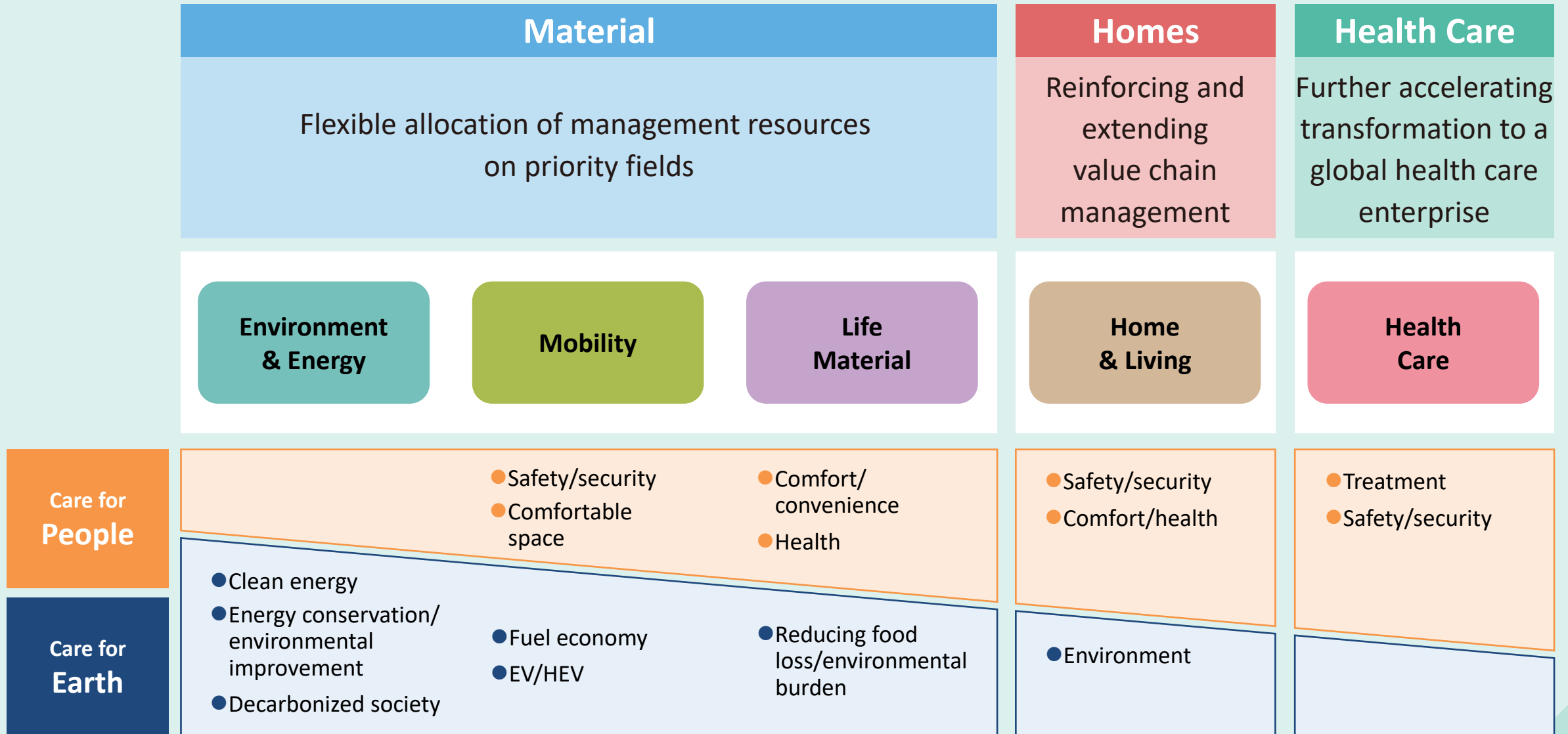
Priority fields for provision of value



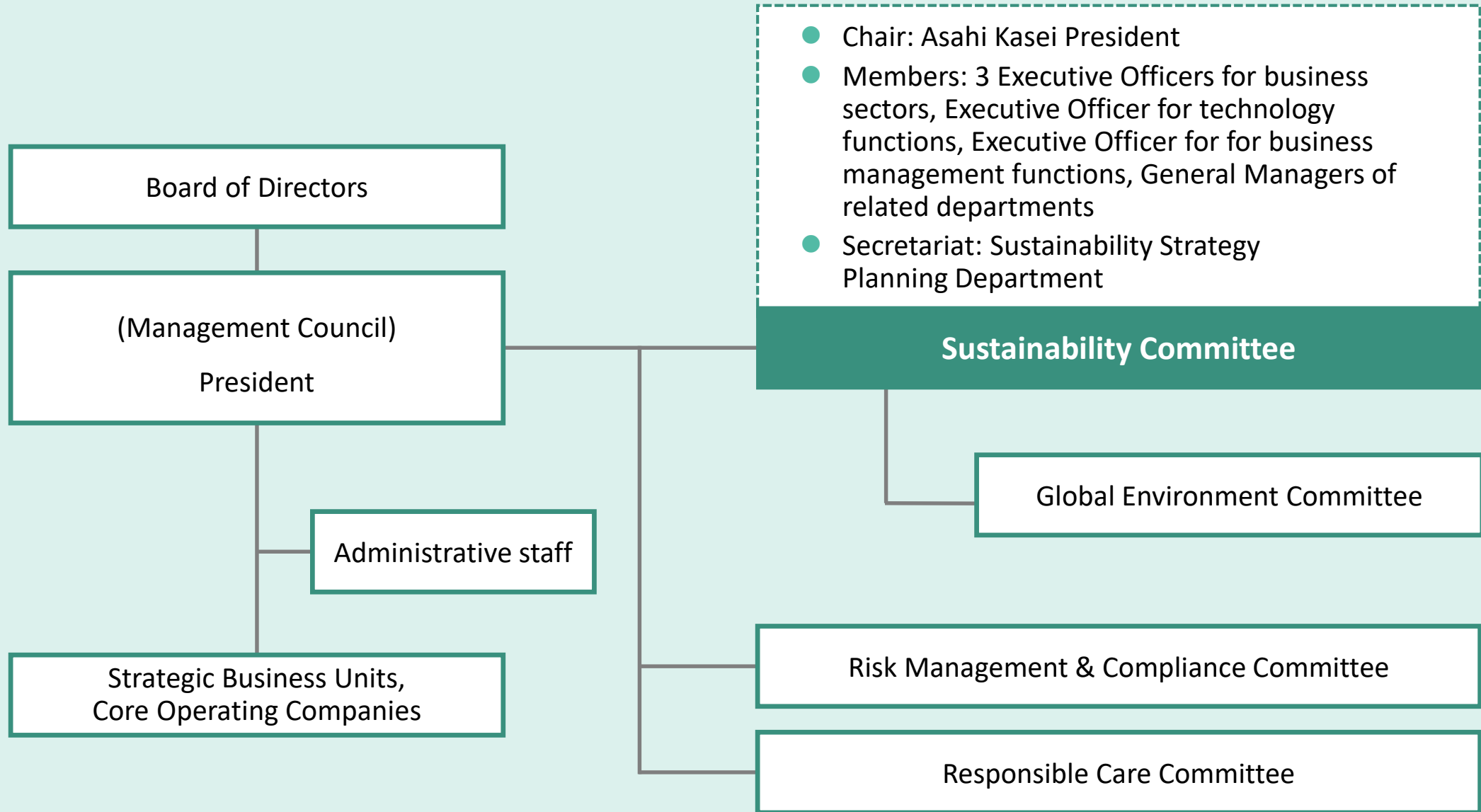
Perspective for provision of value



Main contributions of business



Framework for Sustainability



(as of December 1, 2020)

Care for **People**



**Active life
in the new normal**

Care for **Earth**



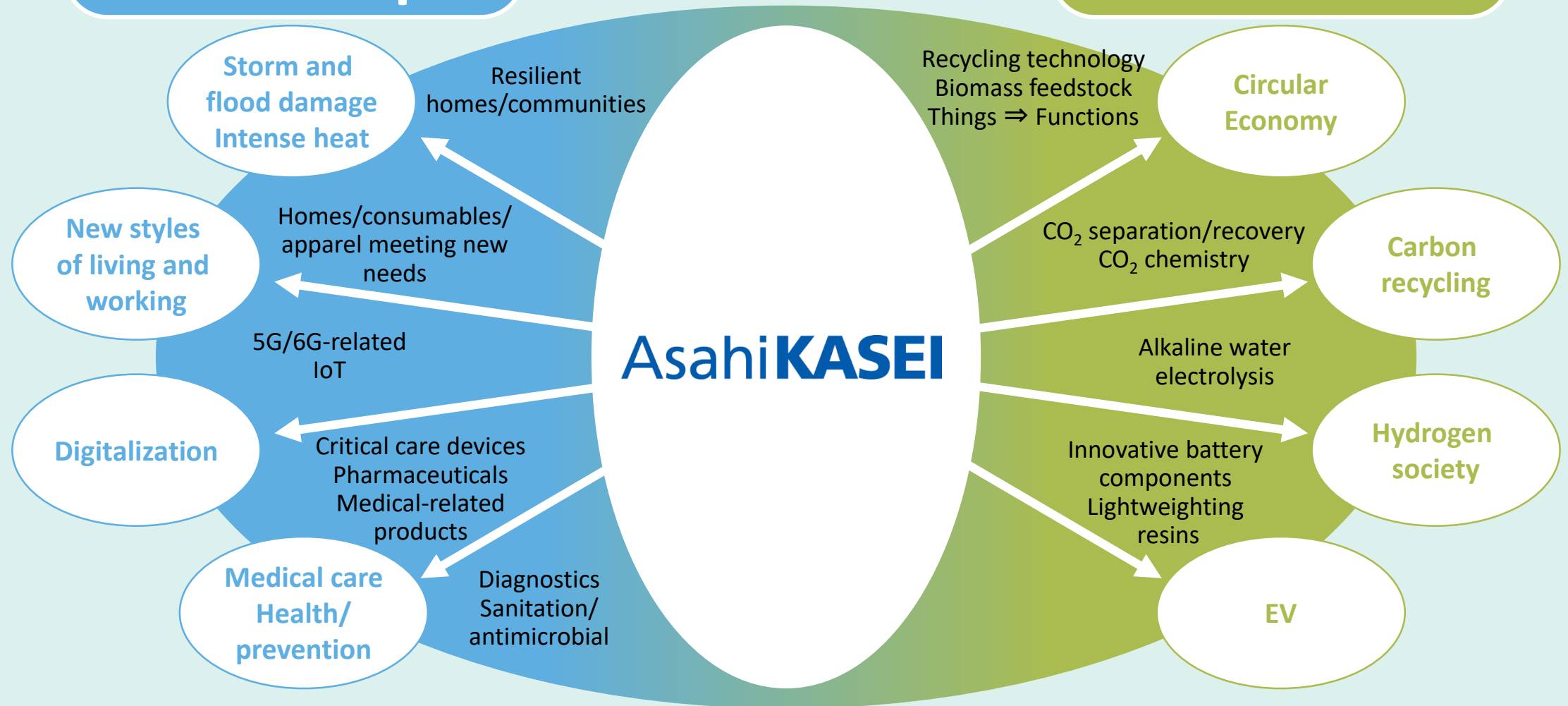
**Carbon neutral
sustainable world**

**Challenges posed by
climate change and
COVID-19**

Opportunities for Asahi Kasei toward 2050

Care for **People**

Care for **Earth**



Active life
in the new normal

Carbon neutral
sustainable world



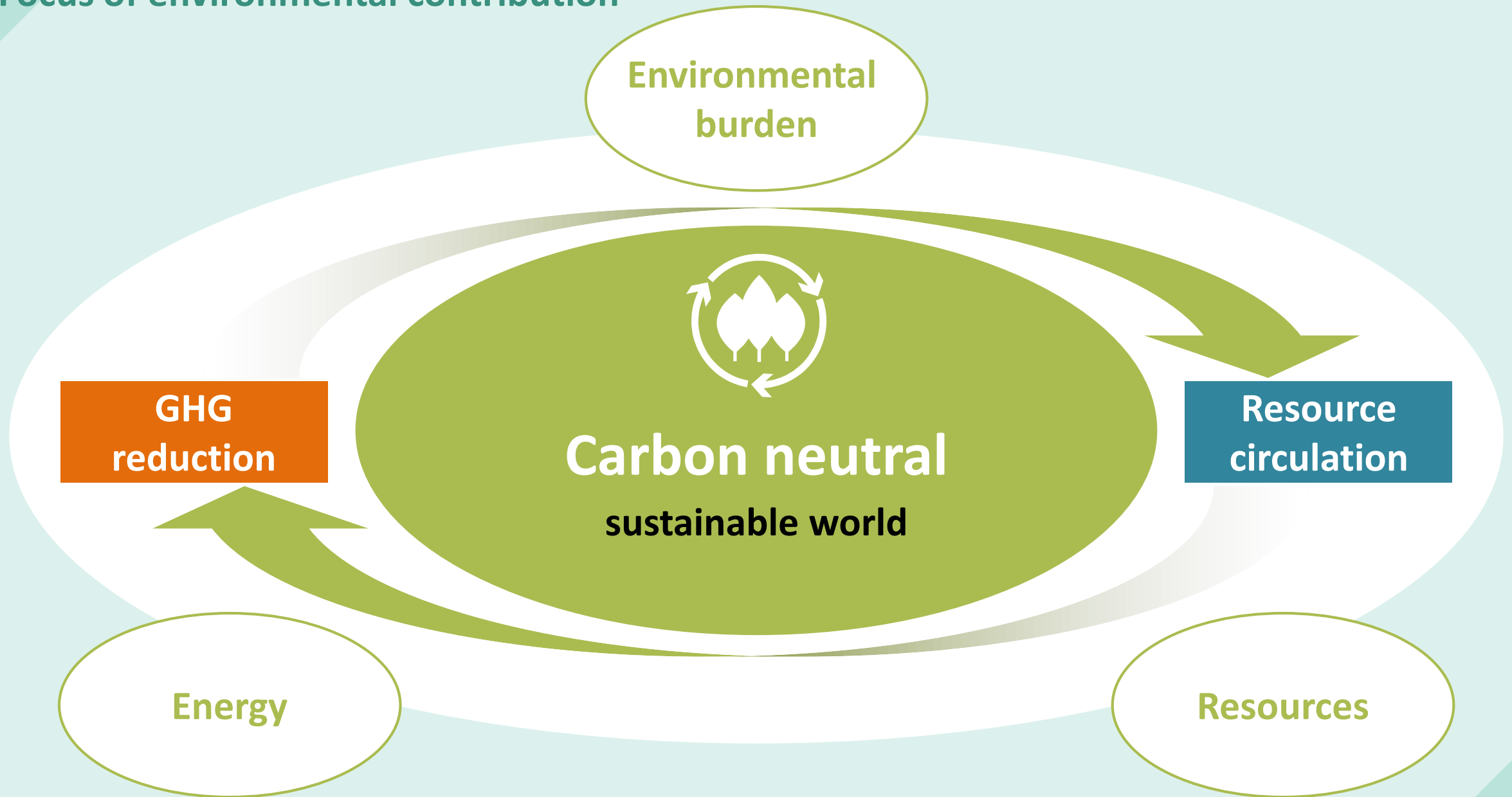
Care for **Earth**

Carbon neutral sustainable world

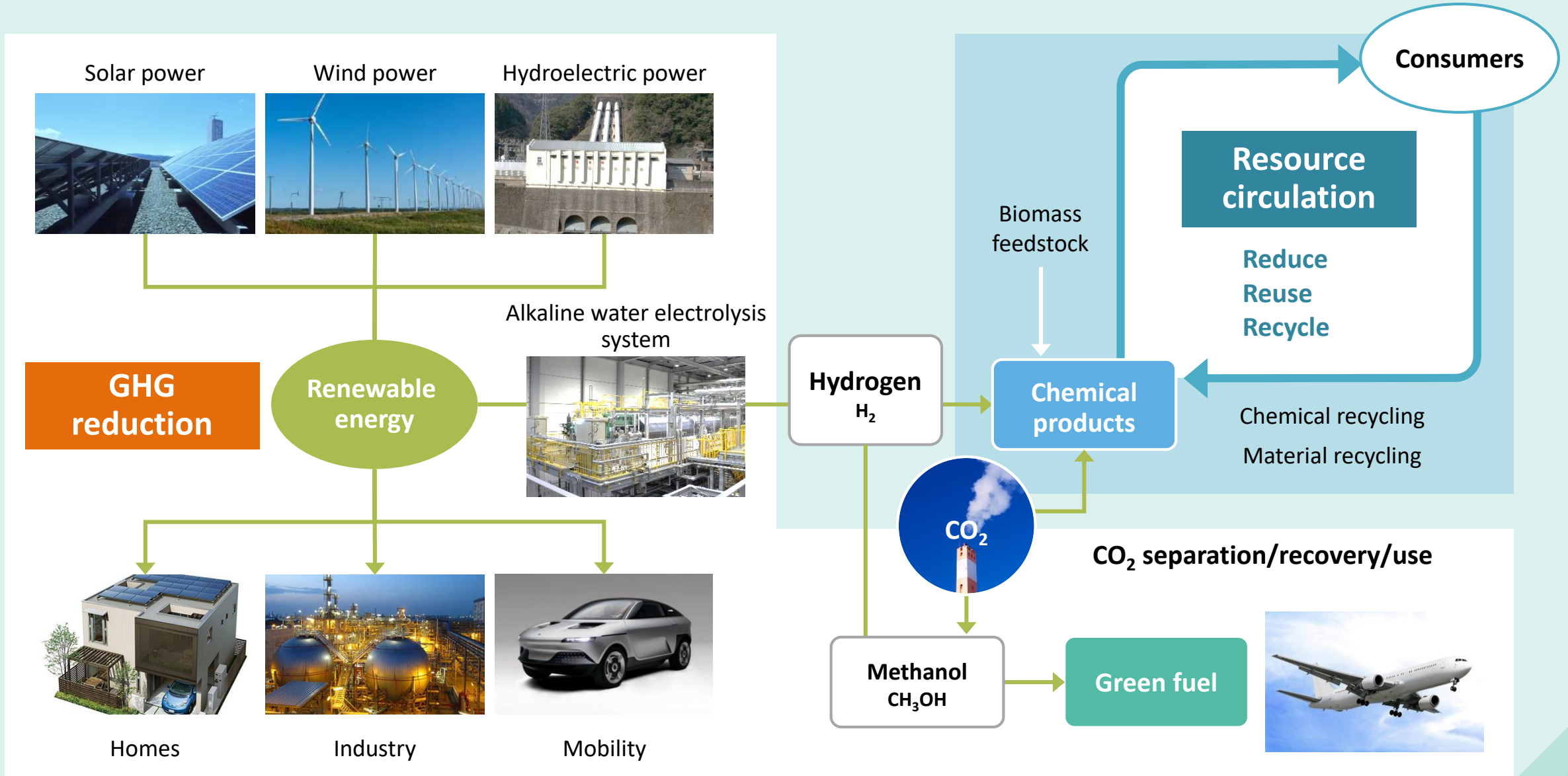
- **Business contribution to society**
- **Actions at Asahi Kasei**



Focus of environmental contribution



Concept for a carbon neutral and sustainable world



Care for **Earth**

Carbon neutral sustainable world

- **Business contribution to society**
- **Actions at Asahi Kasei**



Technologies/businesses contributing to the world

Advancing with 2 perspectives (today and 2050)

New technologies/
businesses toward 2050

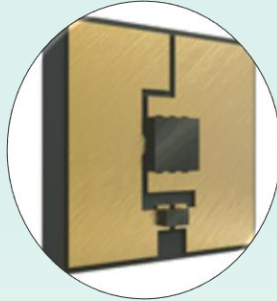
ZEH, PV

→ Carbon neutral living



UVC LED for disinfection

→ Saving energy,
eliminating mercury



CO₂ separation/
recovery/utilization



Carbon recycling

Production process
efficiency/innovation



Lightweighting,
electric drive, etc.

→ Clean mobility



Alkaline water electrolysis
→ Green hydrogen



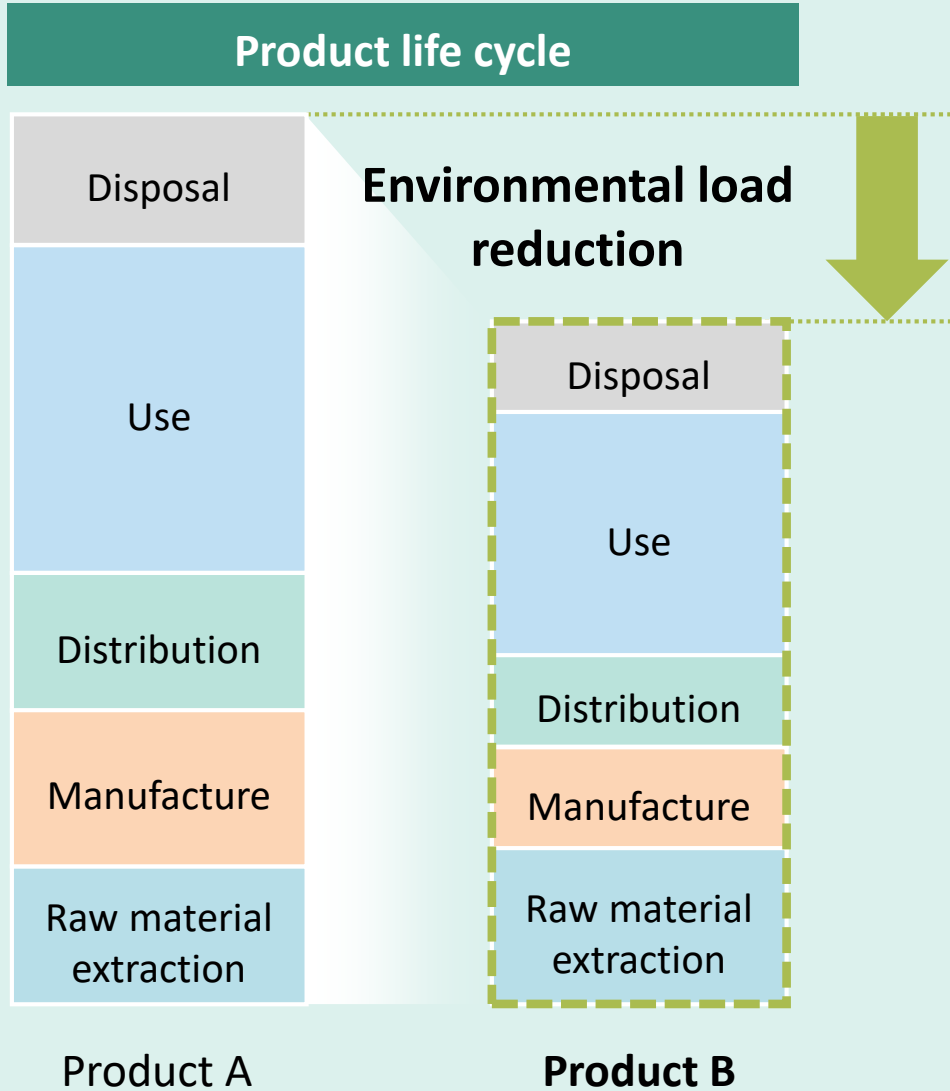
Insulated sealed boxes
→ Low environmental
impact transport



Technologies/businesses today

Current technologies/businesses

Proactive development of businesses leveraging LCA*



* Life cycle assessment

Environmental contribution product examples

Residential

- Hebel Haus
- CO₂ sensors



Urban infrastructure

- Elastomer for asphalt modification



Automotive

- LIB separators
- Lightweighting resin
- Synthetic rubber for fuel-efficient tires



Manufacturing process

- Ion-exchange membrane process for chlor-alkali electrolysis
- Manufacturing process for acrylonitrile
- Molding machine purging agent



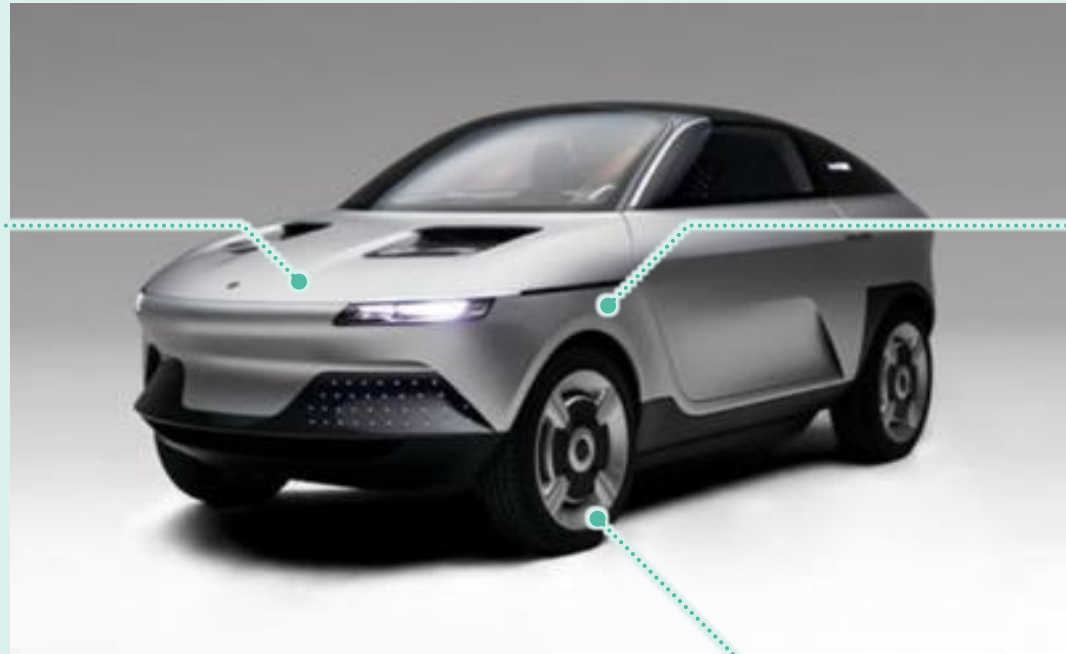
Products contributing to the environment in Mobility

Environment
& Energy

Mobility

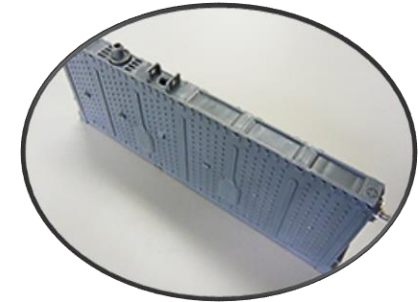
Electric drive

LIB separator



Lightweighting

Xyron mPPE



Others

- Lead-acid battery separator for idling start/stop
- Artificial suede for vehicle interiors (using recycled material)
- CO₂ sensor
- Low-VOC polyacetal
- Foamed engineering plastic
- Neoma Foam insulation

Durability

Elastomer for
asphalt modification



Rolling performance

S-SBR for tires

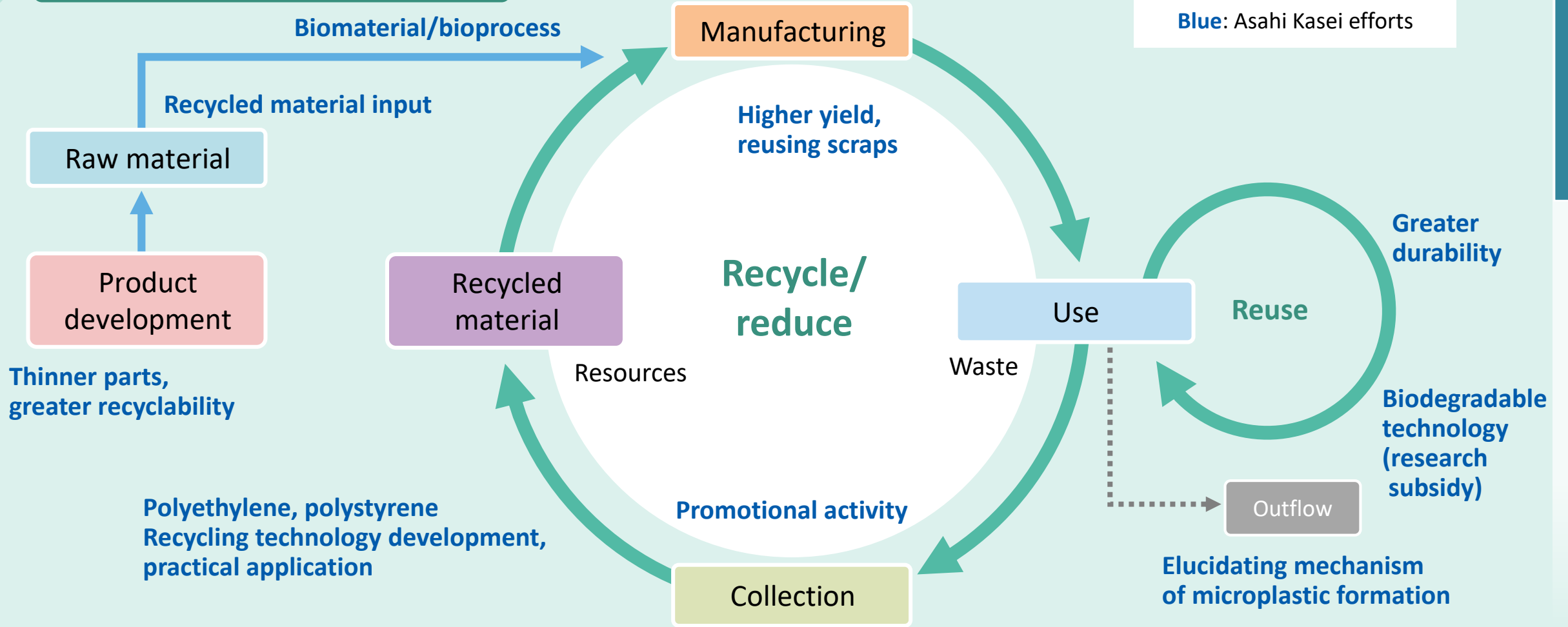


Toward a circular economy

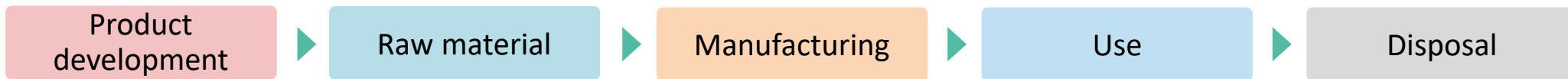
3Rs at various points in the circle

Life Material

Resource circulation



Linear Economy



Working with outside entities

Proactive participation with other companies and groups

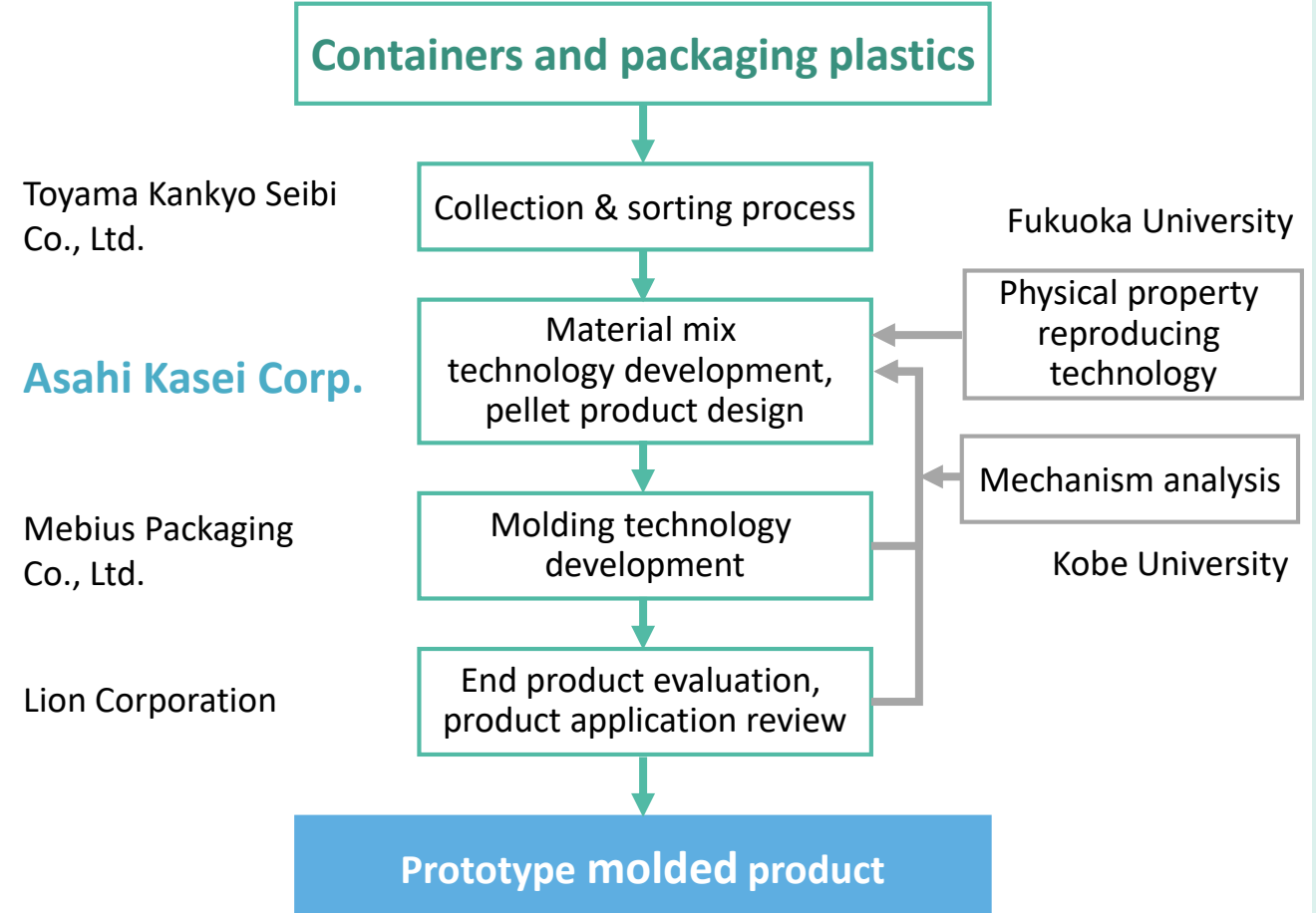
Industry initiatives



Collaboration with academia

- Elucidating mechanism of microplastic formation (with Kyushu University)
- Polyethylene recycling (with Fukuoka University)

Research led by NEDO (material recycling of polyethylene)



Effort toward 2050 (1) hydrogen

Alkaline water electrolysis system to accelerate hydrogen society

The world's largest-scale alkaline water electrolysis system using renewable energy at the Fukushima Hydrogen Energy Research Field (FH2R)

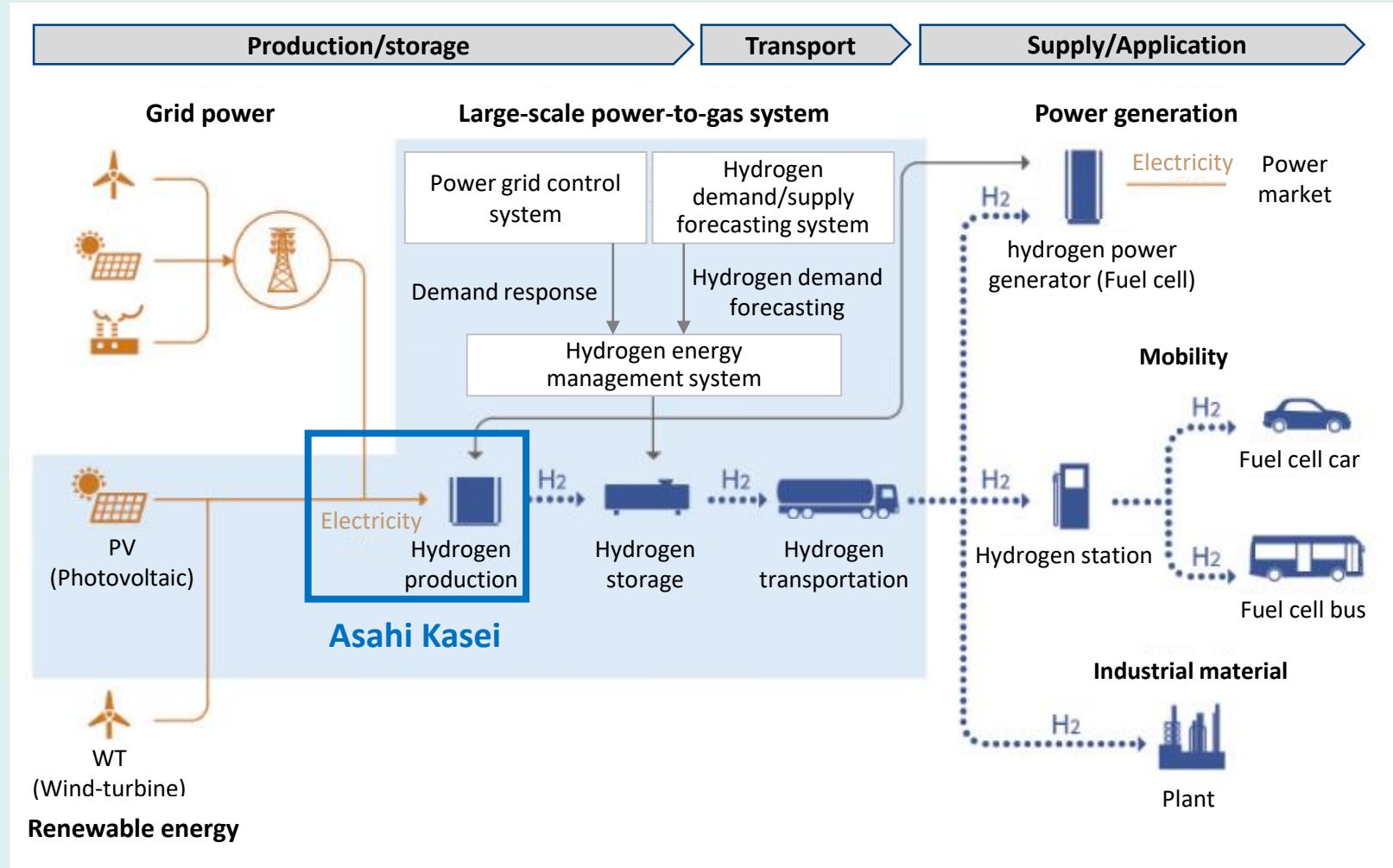


FH2R

Source: NEDO



10 MW-class alkaline water electrolysis plant



NEDO: Hydrogen social construction technical development project/Hydrogen energy system technical development/Technical development concerning business model construction and the large-scale actual proof of a re-energy use hydrogen system

Source: NEDO

Effort toward 2050 (2) CO₂ chemistry

Developing and commercializing processes using CO₂ as material

Life Material

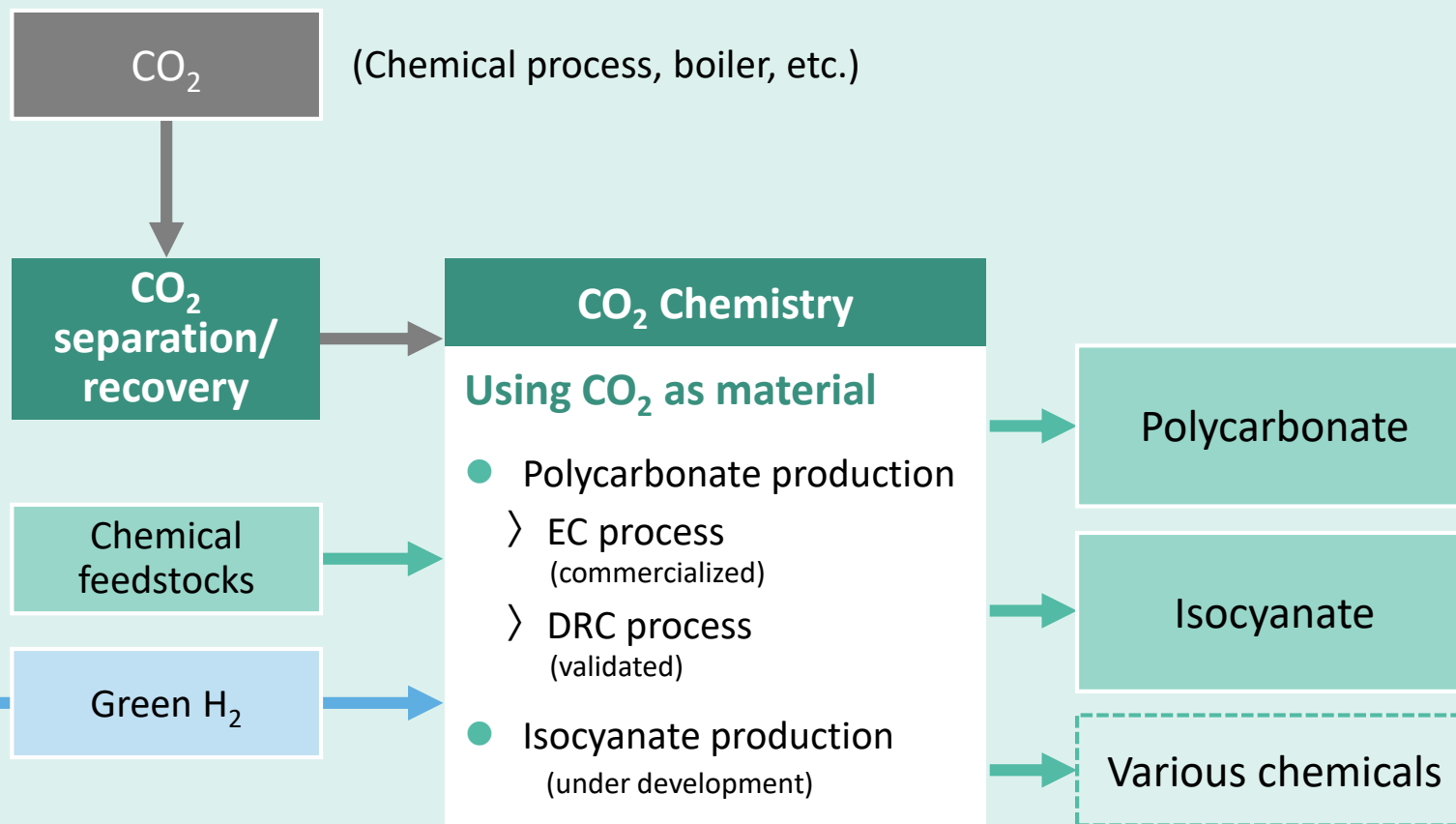
Environment & Energy

GHG reduction

Resource circulation



10 MW alkaline water electrolysis system



EC: Ethylene carbonate, DRC: Dialkyl carbonate

Renewable energy

H₂O

Alkaline water electrolysis for hydrogen production

Green H₂

Chemical feedstocks

Using CO₂ as material

- Polycarbonate production
 - > EC process (commercialized)
 - > DRC process (validated)
- Isocyanate production (under development)

Polycarbonate

Isocyanate

Various chemicals

Care for **Earth**

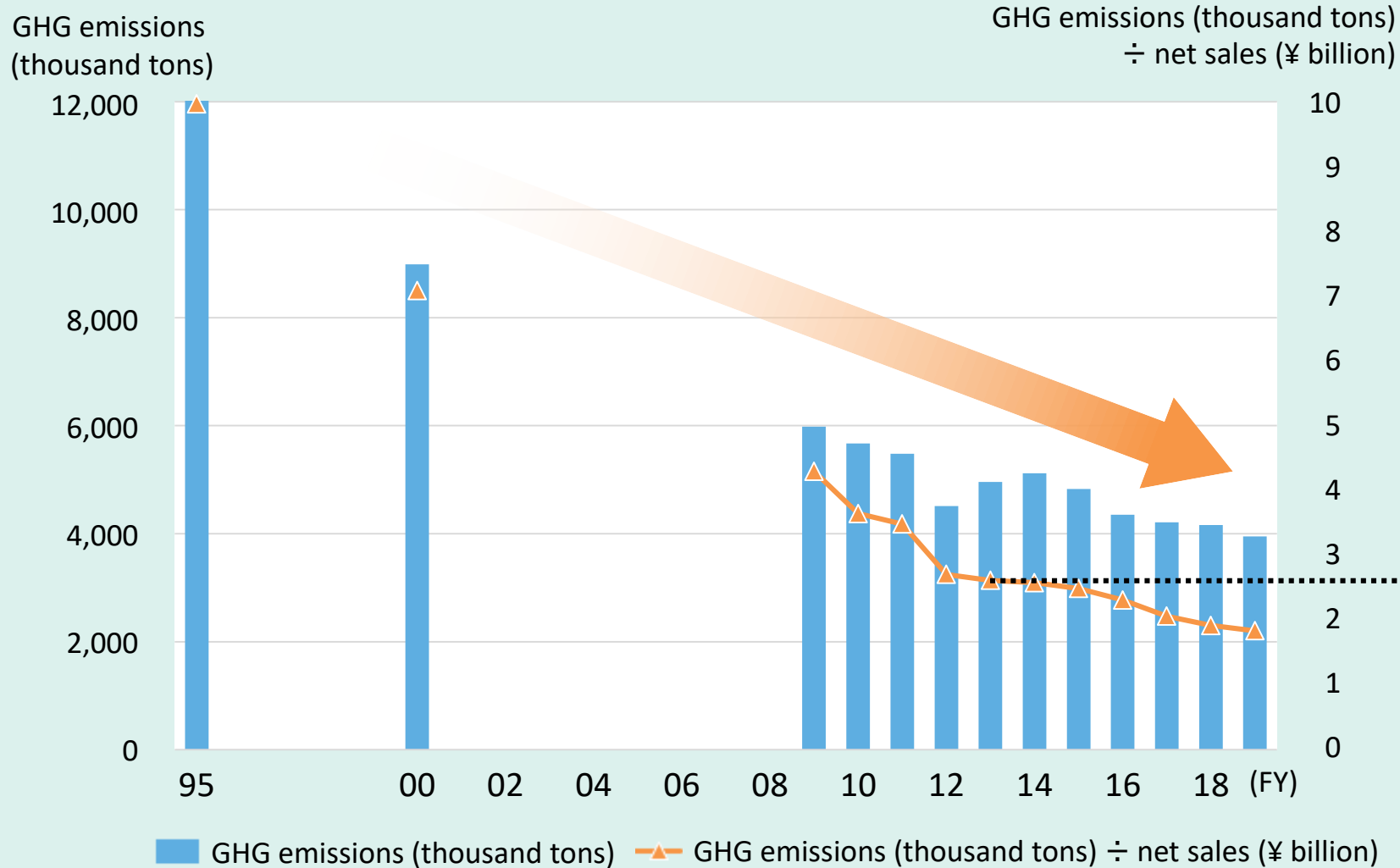
Carbon neutral sustainable world

- Business contribution to society
- **Actions at Asahi Kasei**



Reduction of GHG emissions

Accelerating the reduction by energy transformation and technological innovation



- Phasing out coal-fired power plants
- Renewable energy use
- Manufacturing process improvement
- Focusing on environmental-friendly businesses

**35% reduction
by FY2030**

(from FY2013 as a proportion of net sales)

Note:

- Amount of emissions in Scope 1 + Scope 2
- Overseas emissions not included in FY1995 and FY2000

Decarbonization and renewable energy use

Steady progress on path to decarbonization



Target for zero coal-fired power

(facilities independently owned by the Asahi Kasei Group)

Alkaline water electrolysis,
CO₂ chemistry

Renovation of hydroelectric power plants



Hydroelectric power plant in Miyazaki, Japan

Greater use of low-carbon fuel (LNG, etc.)



Solar energy

Miko SRL, Italy



Hebel Maison apartment building

Technology development

CO₂-free methane, H₂, etc. (by 2050)

Care for **People**

Active life in the new normal

- **Business contribution to society**
- **Actions at Asahi Kasei**





Active life in the new normal



Security and comfort



Healthy longevity

Care for **People**

Active life in the new normal

- **Business contribution to society**
- **Actions at Asahi Kasei**



Ventilators

(significant expansion of production capacity)



Virus removal filters (increased production)



Therapeutic apheresis



Medical gowns



Masks

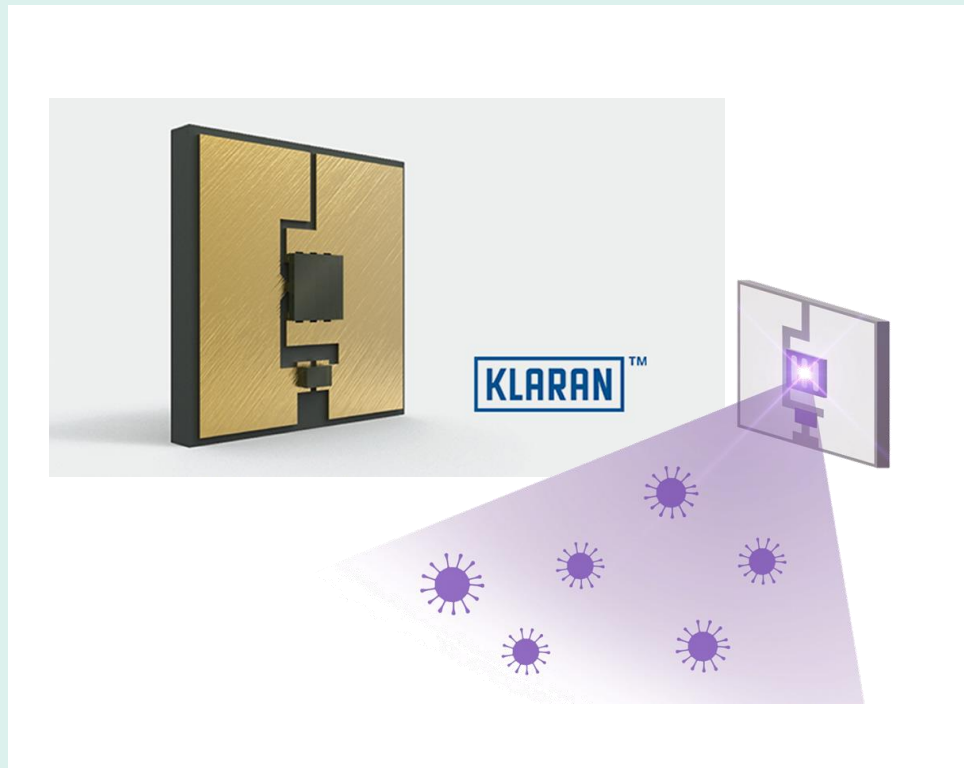


Actions against COVID-19 (2)

Providing new solutions with diverse technologies

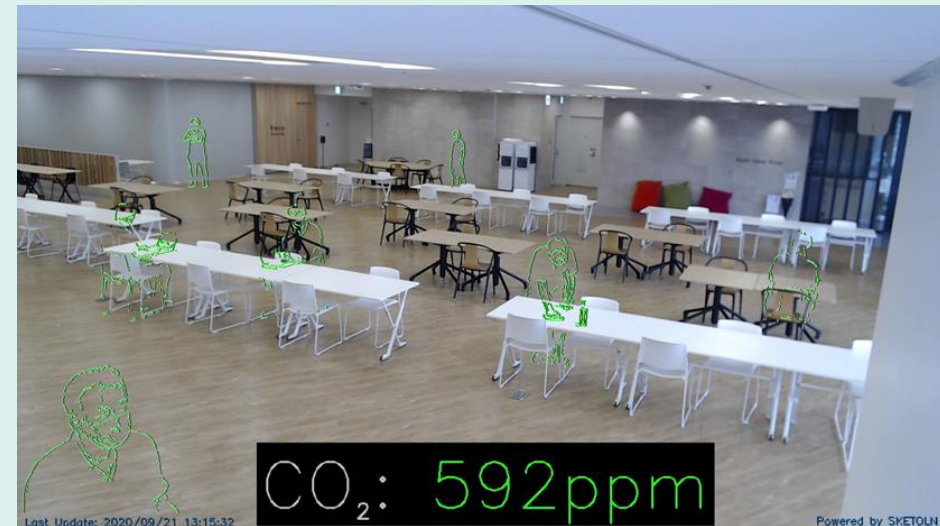
1 Surface disinfection solution with Klaran UVC LEDs

Fast inactivation of virus with high-performance UVC LEDs disinfecting various surfaces



2 3Cs visualization solution with combination of CO₂ sensors and live cameras

Contributing to management of 3Cs avoidance measures and visualization of circumstances with technology to measure CO₂ concentration and display people in silhouette outline on live camera



High-precision/low-power CO₂ sensors

+

SKETOLN (privacy-protected imaging system)

Contribution to the aging society

Providing effective therapy for quality of life

- Osteoporosis treatment

- Teribone
- Reclast

- Rheumatoid arthritis treatment

- Kevzara

- Immunosuppressant

- Envarsus XR
- Bredinin

**Bone
Orthopedics**

Immunology

**Critical care
Heart disease**

**Kidney
disease**

Virus removal filters

(for biopharmaceuticals
and plasma derivatives)

- Defibrillators

- LifeVest

(wearable defibrillator)

- Ventilators

- Recomedulin

(anticoagulant)

- Therapeutic apheresis

- Artificial kidneys



Providing resilient homes

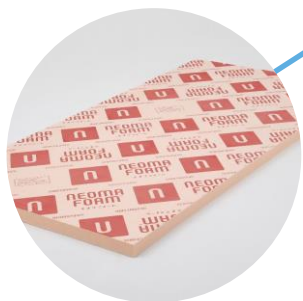
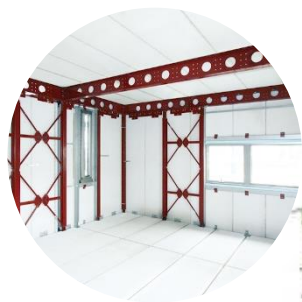
Living with safety, security, and comfort

Hebel Haus long-life homes

Earthquake/fire resistance, structurally strong frame

Gratis 60-year inspection

ZEH (net zero energy house)
Independent energy



High-performance insulation



2019 First Prize



2020 Merit Award

Working with local governments to redevelop areas densely built with wood-frame houses to be fire-resistant areas

Area disaster prevention preparation project (Shinagawa Ward and Asahi Kasei)

Tokyo 10-year project for fire resistance of dense wood-frame areas



Atlas Nakanobu



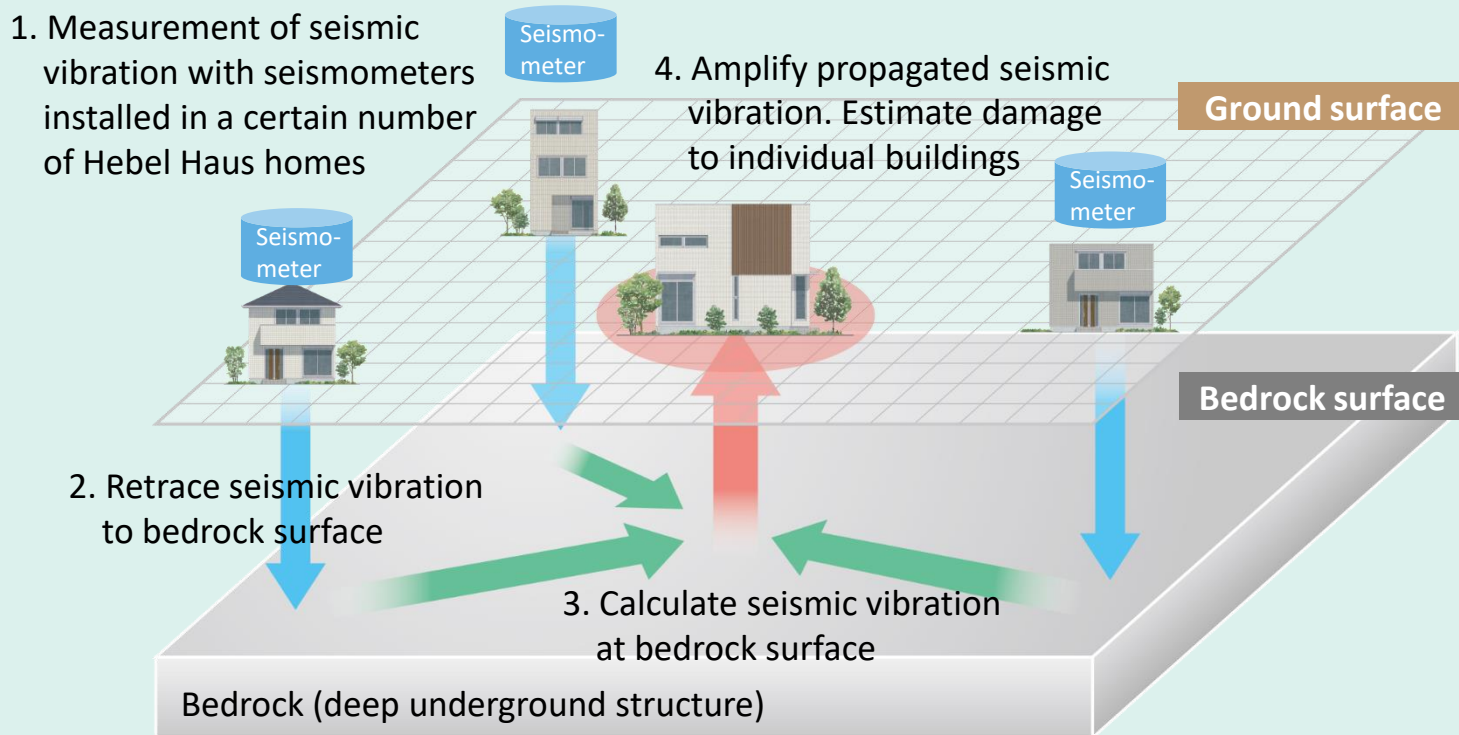
2020 Grand Prix

Faster restoration of the normal condition

New technology to heighten resilience

Immediate estimation of earthquake damage to Hebel Haus/Hebel Maison

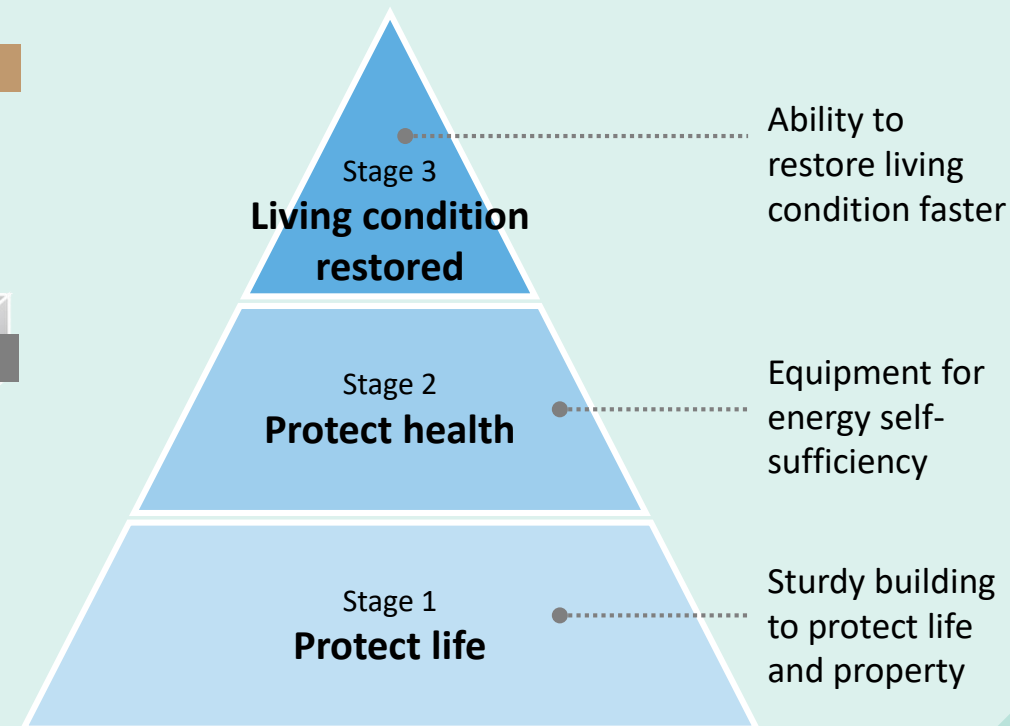
→ Aiming to **broadly contribute to improved resilience throughout society** in the future



LONGLIFE AEDGiS IoT disaster information system

Hebel Haus aim for **total resilience**

Stages to restore living condition



Care for **People**

Active life in the new normal

- Business contribution to society
- **Actions at Asahi Kasei**



Operating on the premise of remote work

Lessons from the pandemic

Effectiveness of remote work

- Compatibility with diverse lifestyles
- Maintaining and raising productivity
- Eliminating of sense of physical separation
- Digital documents and task improvements

Challenges of remote work

- Enriching communication
 - Among employees (value creation through diversity)
 - Between employees and the company
 - Preventing isolation
- Evolving management
- Raising engagement
- Security

Adapting/evolving in the new normal

- Utilizing IT
 - Stimulating communication and heightening efficiency (including DX), security
- Awareness of the purpose of work
- Raising participation in the organization
- Heightening management ability premised on remote work
- Supporting individual career plans
- Promoting individual health



Building foundations for employees to thrive

Human resources are an asset; everything starts with people

Work environment

System/process

Management ability

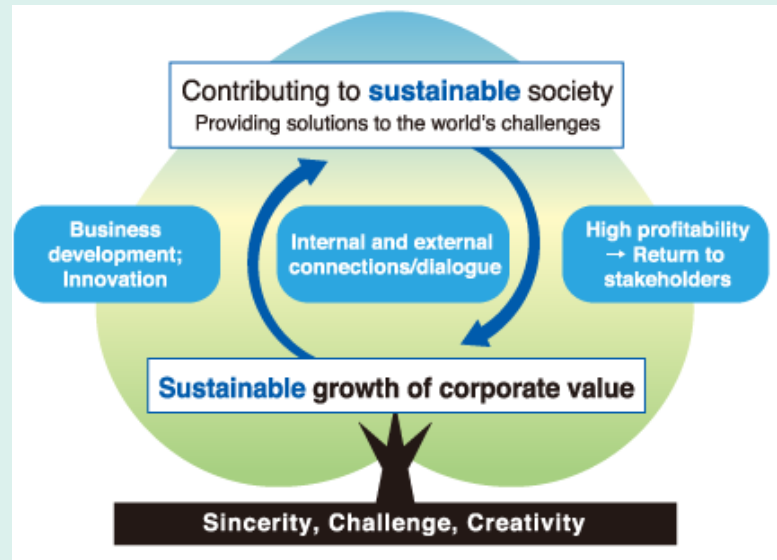
Enhanced employee engagement/greater sense of organizational participation

- Producing results as a team of diverse employees; each individual feels more engaged and fulfilled
- Greater motivation by sensing how one's own work contributes to life and living for people around the world

We want to work together

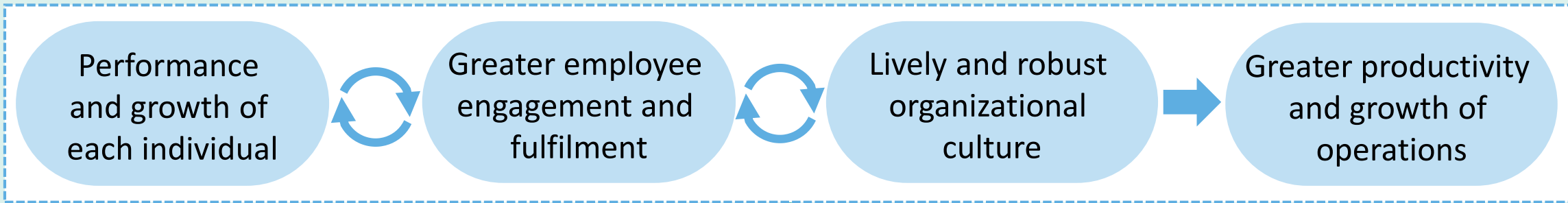
Advancing management for health

For the active performance of each individual



Sustainability for Asahi Kasei

Objectives of management for health



Physical and mental health of employees and their families

Basis of management for health

Advancing management for health

For the active performance of each individual

Actions since April 2020

- Issuance of Statement on Management for Health
- Assignment of Executive Officer with responsibility
- Establishment of Corporate Health Care Promotion Center
- Establishment of medium-term goal and action plan

Examples of our efforts

- Holding AED lifesaving workshop regularly
 - ⇒ First lifesaving treatment in emergency (BLS: basic life support)
- Osteoporosis checkup subsidy support (Asahi Kasei Pharma)
 - ⇒ Enhancing awareness of osteoporosis; improving health condition

Senior leaders of each region and business division promote health management

Priority matters

- Mental health
- Metabolic syndrome
- Cancer
- Smoking
- Quality of sleep



Achieving Care for Earth, Care for People

Advancing basic activities for sustainability

DX



Dialogue with stakeholders



Diversity & Inclusion



Human Rights



Responsible Care



Summary





Care for People

Active life in the new normal

Business contribution to society

- Measures against COVID-19
- Healthy longevity
- Resilient living

Actions at Asahi Kasei

- Work engagement
- Growth
- Health



Care for Earth

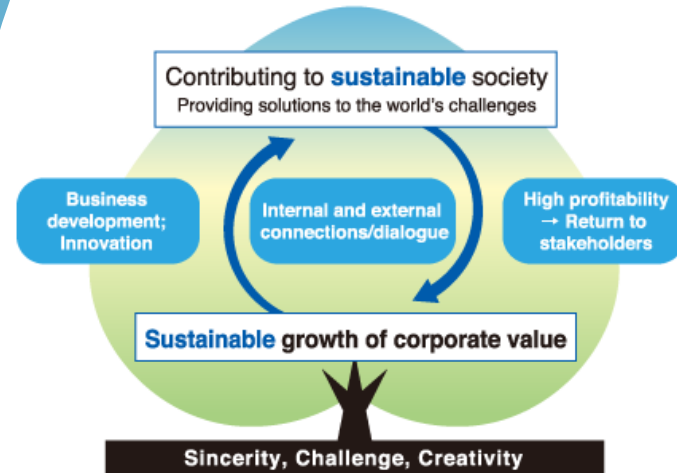
Carbon neutral Sustainable world

Business contribution to society

- Environmental contribution products
- Resource circulation
- Clean energy (hydrogen, etc.)
- CO₂ separation/recovery
- CO₂ chemistry

Actions at Asahi Kasei

- Phasing out coal power
- Renewable energy use
- Technological development



Sustainability for Asahi Kasei

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

Materiality

Highest priority

Governance

Compliance/sincerity

Human rights

Safety/quality

Extremely important



Harmony with the environment



Living in health and comfort



Basic activity

Importance for stakeholders

- Greenhouse gas
- Wastewater
- Industrial waste

- Biodiversity
- Social contribution

Business contribution to

- Global environment
- Health and longevity
- Comfortable life

- Supply chain management
- Communication with stakeholders
- Human resources
- Diversity
- Risk management

Important

Importance for the Asahi Kasei Group

Extremely important

Human rights

We support the International Bill of Human Rights, and respect basic human rights and diversity

Asahi Kasei is a signatory to the United Nations Global Compact

Human rights	<ul style="list-style-type: none">● Businesses should support and respect the protection of internationally proclaimed human rights; and● Make sure that they are not complicit in human rights abuses.
Labour	<ul style="list-style-type: none">● Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;● The elimination of all forms of forced and compulsory labour;● The effective abolition of child labour; and● The elimination of discrimination in respect of employment and occupation.
Environment	<ul style="list-style-type: none">● Businesses should support a precautionary approach to environmental challenges;● Undertake initiatives to promote greater environmental responsibility; and● Encourage the development and diffusion of environmentally friendly technologies
Anti-corruption	<ul style="list-style-type: none">● Businesses should work against corruption in all its forms, including extortion and bribery.

The Asahi Kasei Group respects individuals' basic human rights and diversity, and endeavors to provide a workplace that enables anyone to be actively engaged

1. Respecting Basic Human Rights and Diversity

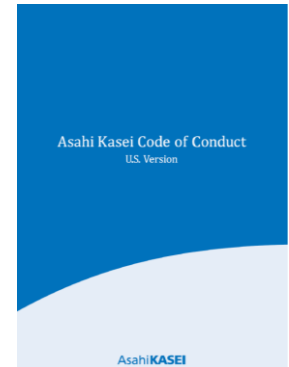
Our employees must respect individuals' basic human rights and diversity and, along with the basic policy of the Asahi Kasei Group regarding prohibition of discrimination on any protected category under applicable law, such as nationality, ancestry, race, ethnicity, religion, gender, ideology, age, physical characteristics, sexual orientation, employment status, form of contract, etc., our employees must not condone such discrimination.

2. Prohibition of Harassment

Our employees must maintain a workplace free of unlawful harassment, whether moral, sexual harassment, physical or psychological, etc., and our employees must not condone such words or deeds.

3. Prohibition of Inhumane Labor Practices

Based on respect for basic human rights, our employees must not condone inhumane practices such as compulsory labor, child labor, slavery, etc. Furthermore, our employees must not condone such practices done by our suppliers.



Code of Conduct applied worldwide

We also endorse the UN Guiding Principles on Business and Human Rights and the Children's Rights and Business Principles.

Asahi Kasei's Digital Transformation (DX) Initiatives

Strengths and Opportunities

Asahi Kasei Group

Diversity and capability to change

- Business, technologies, and human resources
- Data, PoC*

Society

Rapid advance of AI, IoT, and other digital technologies

Value Creation

- Production/manufacturing
- R&D
- Marketing
- Earnings structure
- Organization
- Systems, etc.

Promotion of Digital Transformation

Asahi Kasei Issues

Promoting business model transformation

Manufacturing labor shortages; lack of skilled workers

Accelerating global expansion

Data sharing (shift to paperless)

* Proof of Concept

MI* to innovate means of development



AI for automatic image inspection



Enhancing plant diagnostic technology



Formulating business strategy with IP information



* Materials Informatics


External evaluation

Evaluation organization	Index/name	Evaluation of Asahi Kasei
MSCI	MSCI Japan ESG Select Leaders Index	Adopted as a constituent stock AA (AAA–CCC)
MSCI	MSCI Japan Empowering Women Index (WIN)	Adopted as a constituent stock 7.31 (max. 10)
FTSE	FTSE Blossom Japan Index	Adopted as a constituent stock 3.7 (max. 5)
S&P	S&P/JPX Carbon Efficient Index	Adopted as a constituent stock
Sompo Asset Management	Sompo Sustainability Index	Adopted as a constituent stock
CDP	CDP	Climate Change A- (A–D) Water Security A- (A–D)
Nikkei	Smart Work Management	Special Jury Prize

Major initiatives participated in

Global Compact

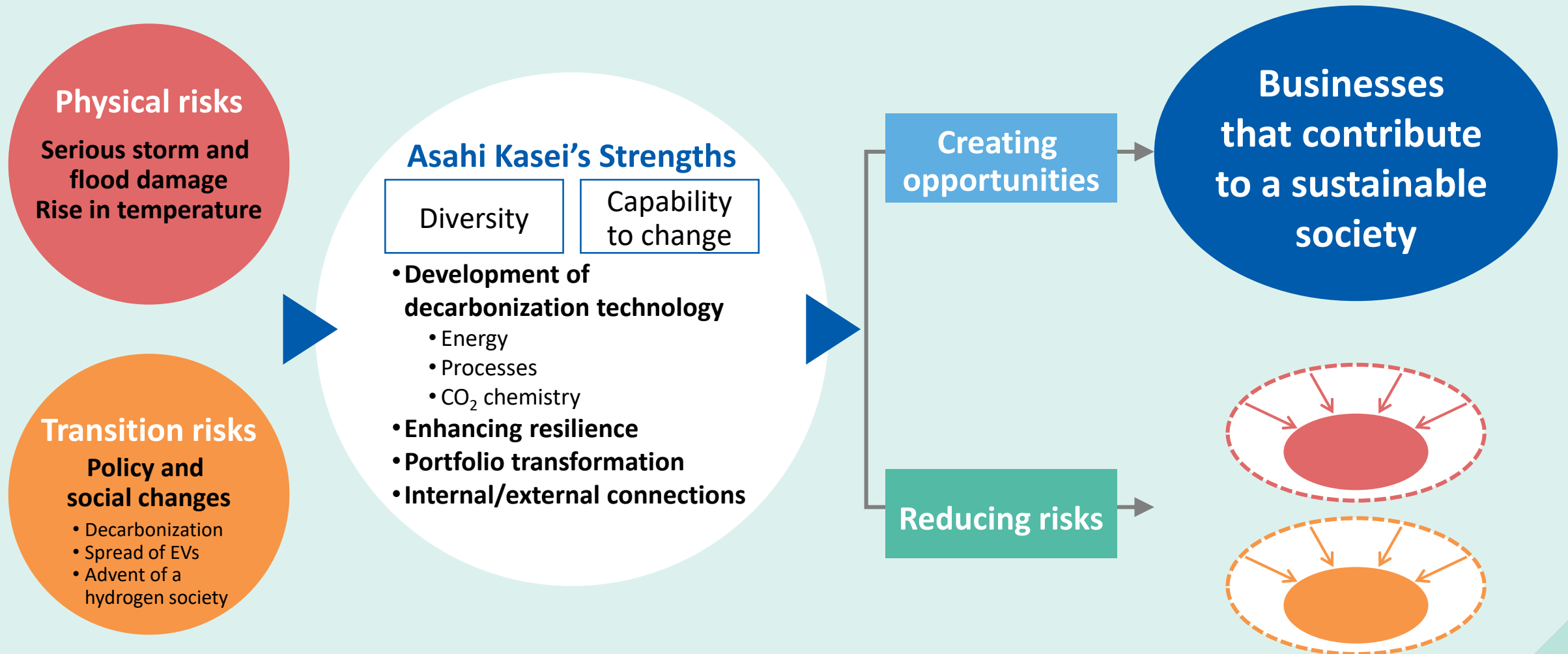
Business Call to Action



Clean Ocean Material Alliance

Analysis based on TCFD* recommendations

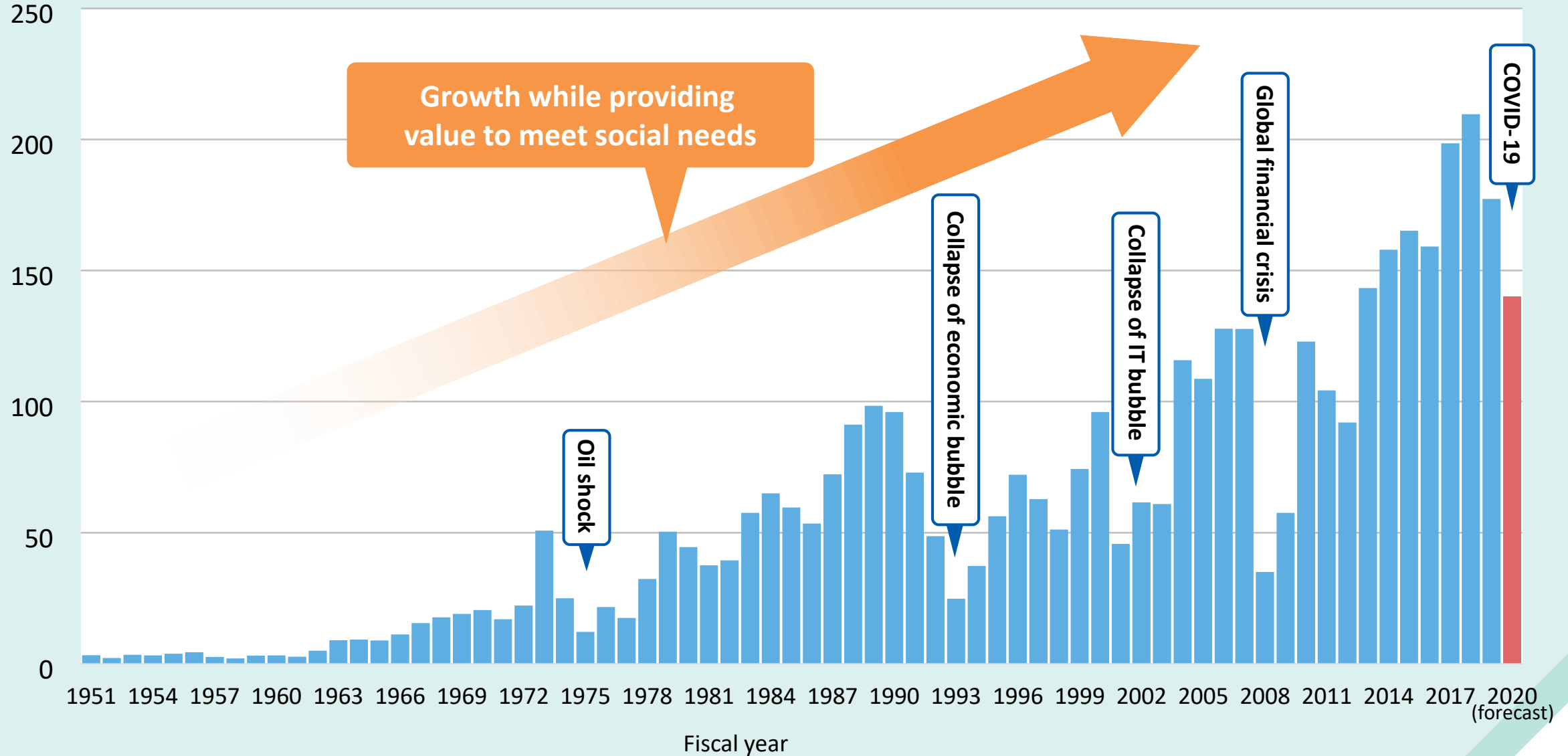
Leveraging our diversity and capability to change in order to reduce risks and create opportunities



* Task Force on Climate-related Financial Disclosures

Operating income trend

(¥ billion)



Note: Non-consolidated figures up to 1976