



# **Long-term Corporate Vision “TORAY VISION 2030”**

## **Medium-term Management Program “ Project AP-G 2022”**

**May 13, 2020  
Toray Industries, Inc.**

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# **I. Long-term Corporate Vision**

## **“TORAY VISION 2030”**

- Achieving Sound, Sustainable Growth  
and Creating Social Value**

# Toray Philosophy

## Corporate Philosophy

**Contributing to society through the creation of new value with innovative ideas, technologies, and products**

## Corporate Missions

### **For our customers**

To provide new value to our customers through high-quality products and superior services

### **For our employees**

To provide meaningful work and fair opportunities

### **For our shareholders**

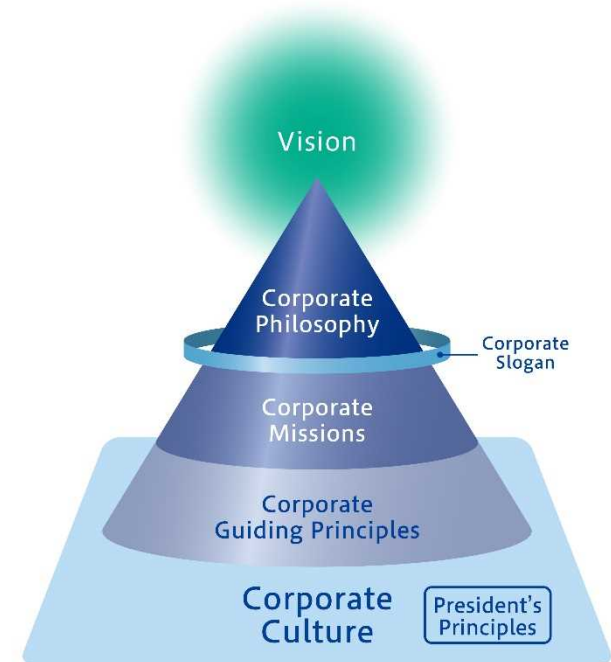
To practice sincere and trustworthy management

### **For society**

To establish ties and develop mutual trust as a responsible corporate citizen

## Vision

**Toray Group Sustainability Vision**

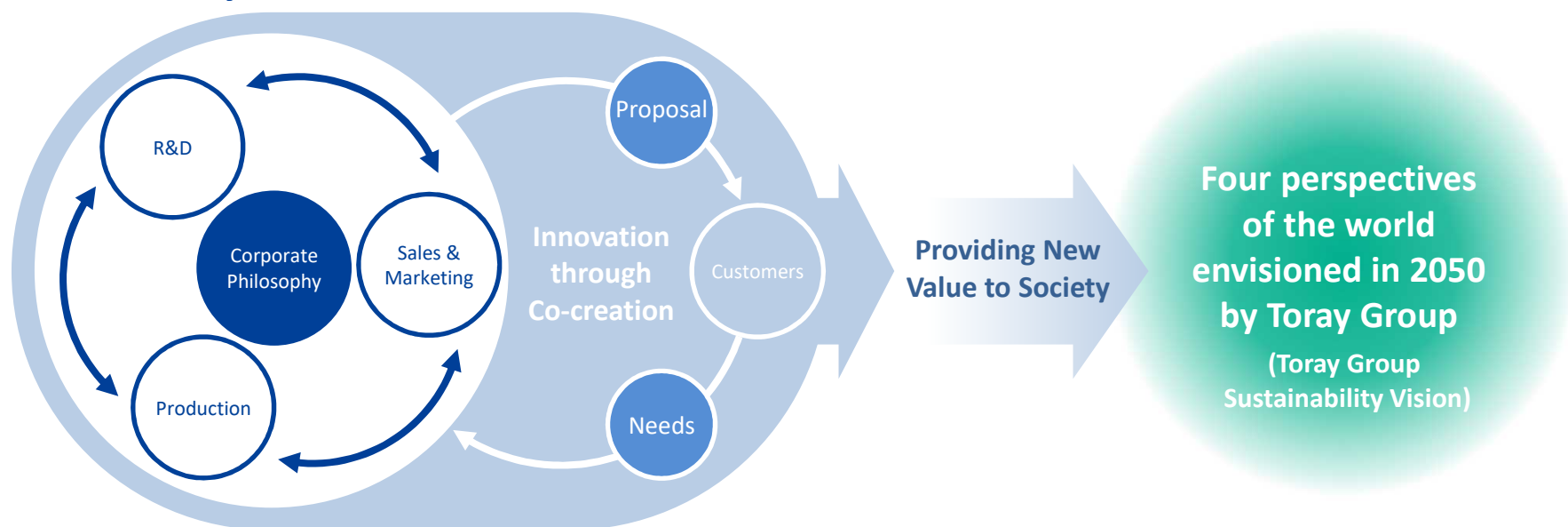


| Toray Philosophy |

# Toray's Core Value and its Value Creation Process

Based on the values which we cherish as the Group's management core value, Toray Group has established the TORAY VISION 2030 with the aim of providing new value to society by focusing on the four perspectives of the world envisioned under the Sustainability Vision.

## Toray's Value Creation Process



### Value that we cherish as management core value

Contributing to society through business activities

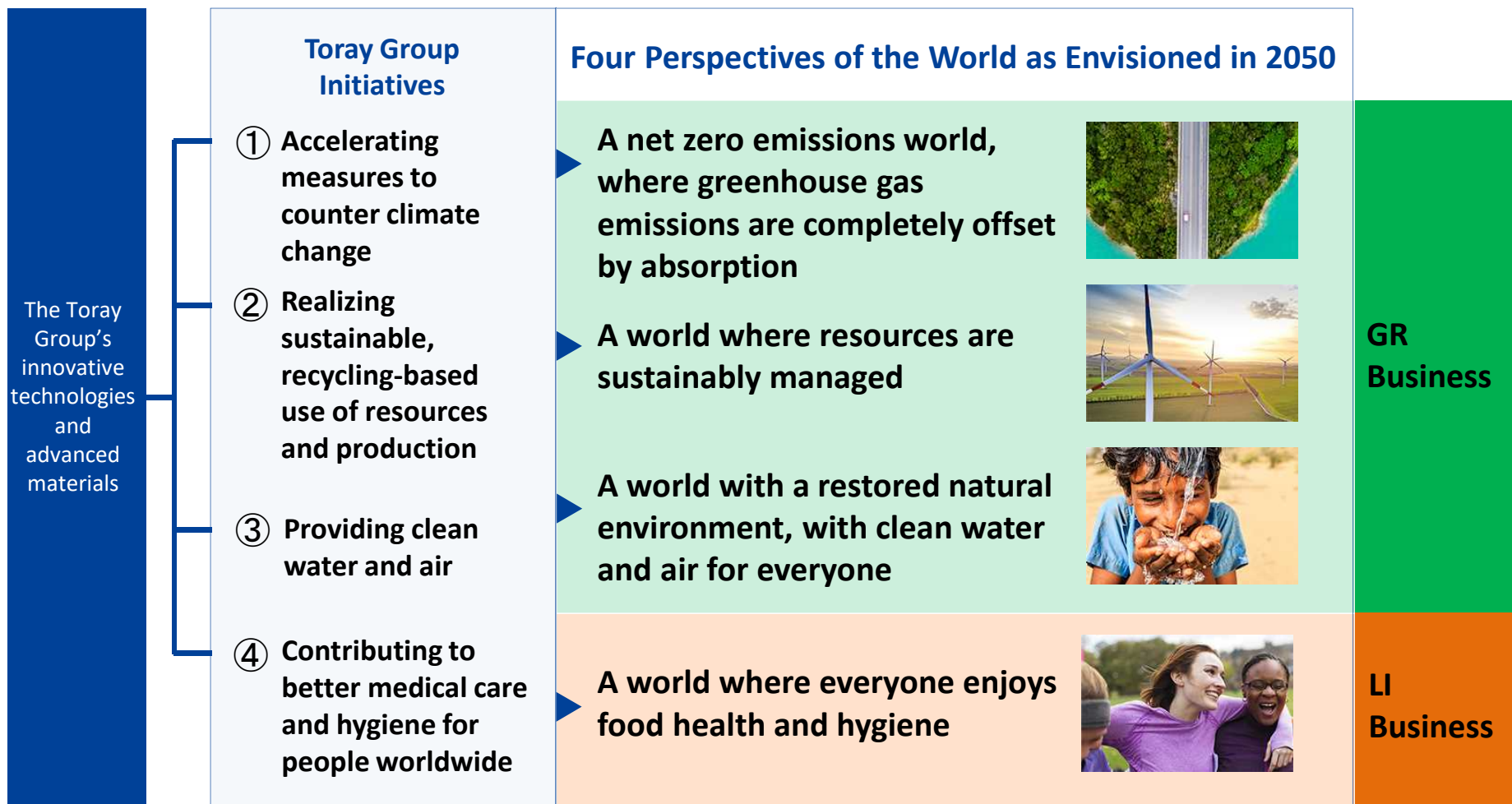
Management from a long-term perspective

People-centric management



# Toray Group Sustainability Vision

## The World as Envisioned in 2050 and Toray Group Initiatives



GR Business: Green Innovation Business, LI Business: Life Innovation Business

# Two Businesses that Contribute to Solving Social Issues

Toray Group will contribute to solving social issues utilizing its advanced materials and core technologies

## Green Innovation (GR) Business

Contribute to solving global environmental, resource, and energy issues



Carbon fiber for aircrafts



Carbon fiber for compressed vessels



Carbon fiber for wind turbine blades



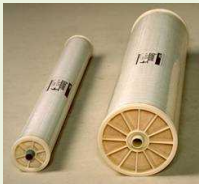
Carbon fiber for automobiles



Resins for automobiles



Air filter



Water treatment membranes



Battery separator film for lithium-ion batteries



Toray Waterless Plate®

## Life Innovation (LI) Business

Contribute to better medical-care and longevity, foster public health, and support personal safety



Pharmaceuticals



Extracorporeal circulation therapeutic columns



Contact lenses



Protein detection system



Catheter



Functional materials for vital signs monitoring



PP spunbond for hygiene products



Protective Clothing

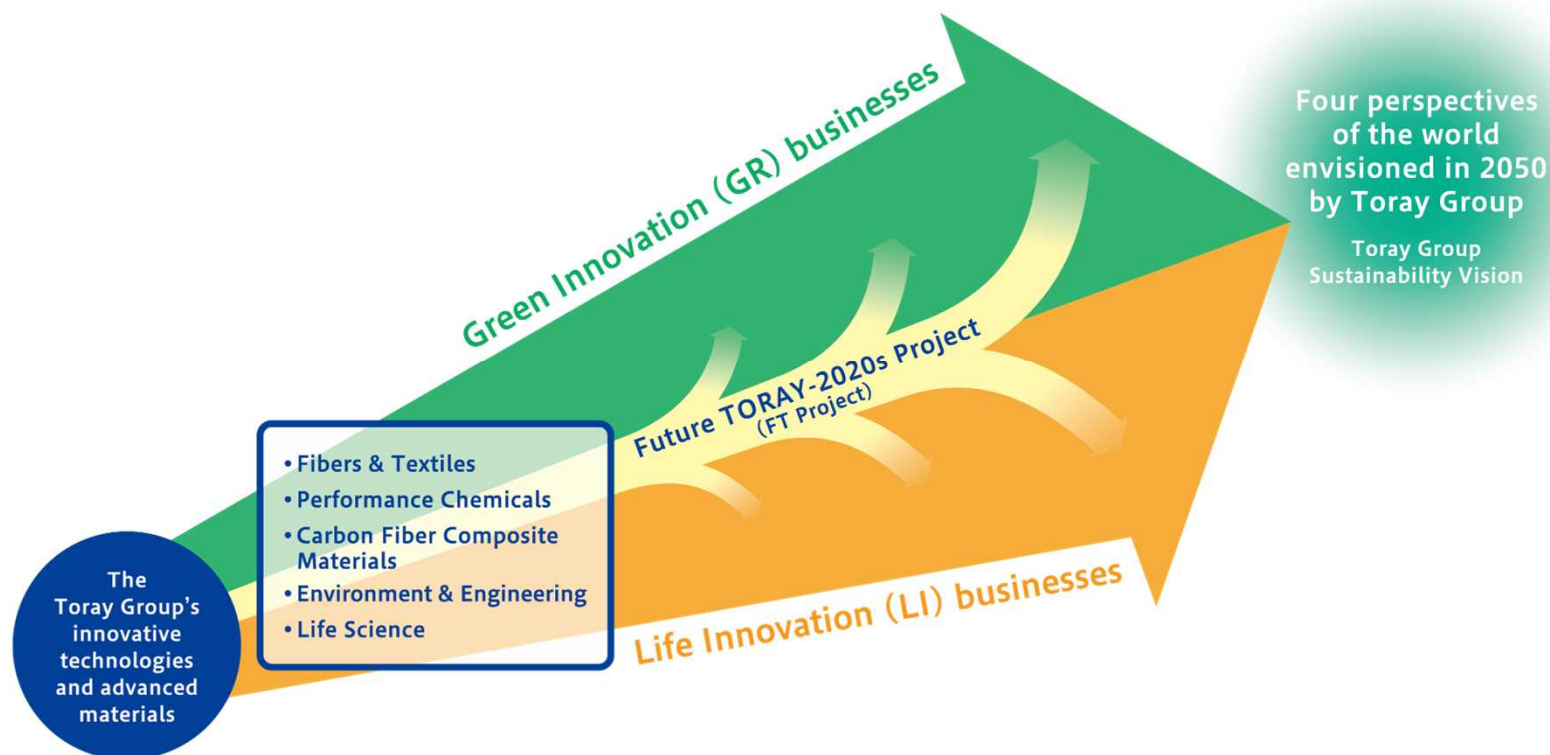


X-ray CT cradle, Cartridge



Airbag fabric

# The Growth Model for Achieving the Sustainability Vision



- Drive business expansion with GR and LI businesses which we expect to contribute to “the global environment and people’s health and safety”
- Accelerate the development and the construction of business models of large-scale themes for the next growth stage as a Group-wide project, Future TORAY-2020s Project (FT Project), for new business creation



# Long-term Corporate Vision “TORAY VISION 2030”

## Assumed business environment changes in 2030

Expectations to solve global environmental problems



Increased uncertainty



Building of a recycling-oriented society



Society of longevity



Global population growth



Industry and lifestyle changes due to the advancement of the digital world



## Long-term Corporate Vision “TORAY VISION 2030”

### 1. Global expansion in growth business fields

Green Innovation (GR) Business Expansion, Life Innovation (LI) Business Expansion

### 2. Strengthening competitiveness

Sophistication of the business, value-added products, total cost reduction

### 3. Strengthening the management foundation

Strengthening the financial structure, structural reforms

**Aim for sound and sustainable growth**

# “TORAY VISION 2030” Quantitative Targets for FY 2030

	FY 2013 Actual (baseline year) (J-GAAP)	FY 2030 Targets (compared to FY 2013) (IFRS)
GR Net sales	463.1 billion yen	4 fold
LI Net sales	119.6 billion yen	6 fold
Avoided CO <sup>2</sup> emissions	40 million tons	8 fold
Contributed annual water filtration throughput	27.23 million tons/day	3 fold
Greenhouse gas emissions per unit of sales in production activities	33.7 tons/billion yen	30% reduction
Water consumption per unit of sales in production activities	1,520 tons/billion yen	30% reduction
Set quantitative targets to be achieved in FY 2030 as interim milestones for the year 2050		

## **II. Review of the Medium-term Management Program “Project AP-G 2019”**

# Basic Strategies of “Project AP-G 2019”

## Basic Strategies

**Business expansion in growth business fields**

GR Project

LI Project

**Expansion and advancement of global business**

AE Project

**Strengthening competitiveness**

TC Project



**Strengthen initiatives designed to generate new earnings sources that would help Toray Group to attain sustainable growth and deliver corporate value from 2020 onwards**

# Green Innovation Business Expansion (GR) Project

## Net sales expanded in areas contributing to new energy

### Topics

#### Reduction of GHG Emissions

- Decided to increase large tow carbon fiber production capacity at Zoltek Companies, Inc. (Apr. 2018)
- Completed the acquisition of TenCate Advanced Composites Holding B.V. (Jul. 2018)
- Decided to establish a new facility in Hungary for the production of battery separator films. (Jul. 2019)

#### Low Environmental Impact

- Developed world's first waterless offset printing press for the use in printing on flexible packaging materials. (Mar. 2019)



#### Biomass-derived Products

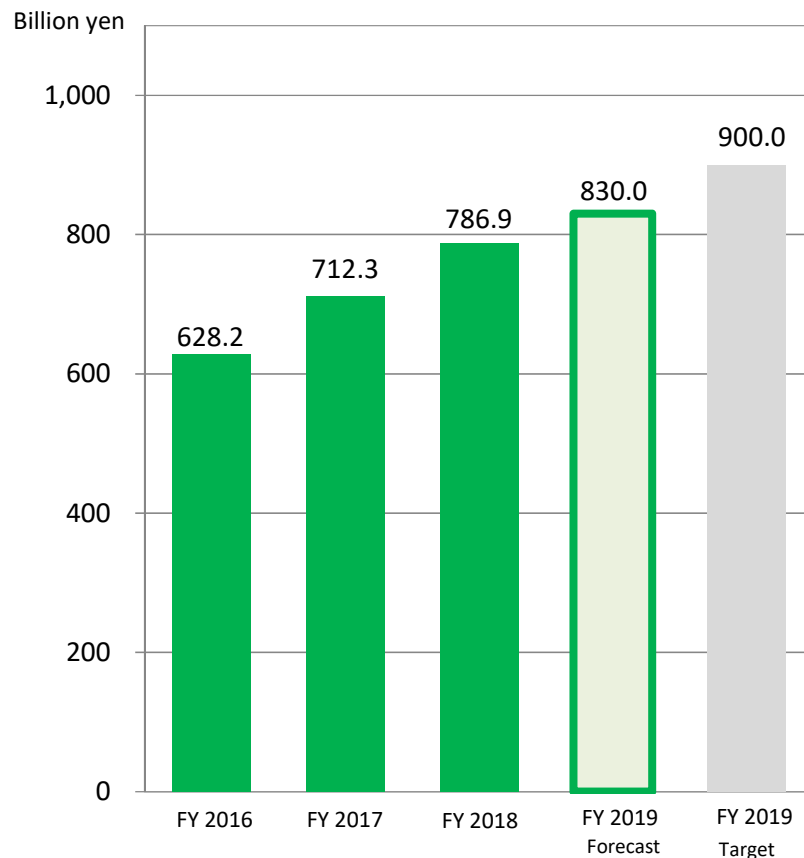
- Started sales of "Ultrasuede® BX," a non-woven material created using ultra-fine fibers that realizes the highest proportion of plant-based raw materials in the world. (Nov. 2018)

#### Water Treatment

- Received an order to supply UF membrane for the largest drinking water production facility in the US west coast. (Mar. 2018)
- Established Toray Membrane (Foshan) Co., Ltd. (TMFC), a new company in Foshan, China, for the production and sales of water treatment membrane products. (Apr. 2019)



Net Sales of Green Innovation Businesses



# Life Innovation Business Expansion (LI) Project

Advanced materials such as non-woven fabrics for hygiene products contributed to sales expansion

## Topics

### Advanced Materials in LI Business

- Decided to set up a new facility in South China for the production of PP spunbond. (Nov. 2017)
- Commercialized “hitoe<sup>®</sup> wearable electrocardiogram monitoring system” for long-term monitoring. (Sep. 2018)
- Acquired EU Type Examination Certificate (CE marking) for the chemical protective clothing LIVMOA<sup>®</sup> 3000 series. (Jan. 2019)

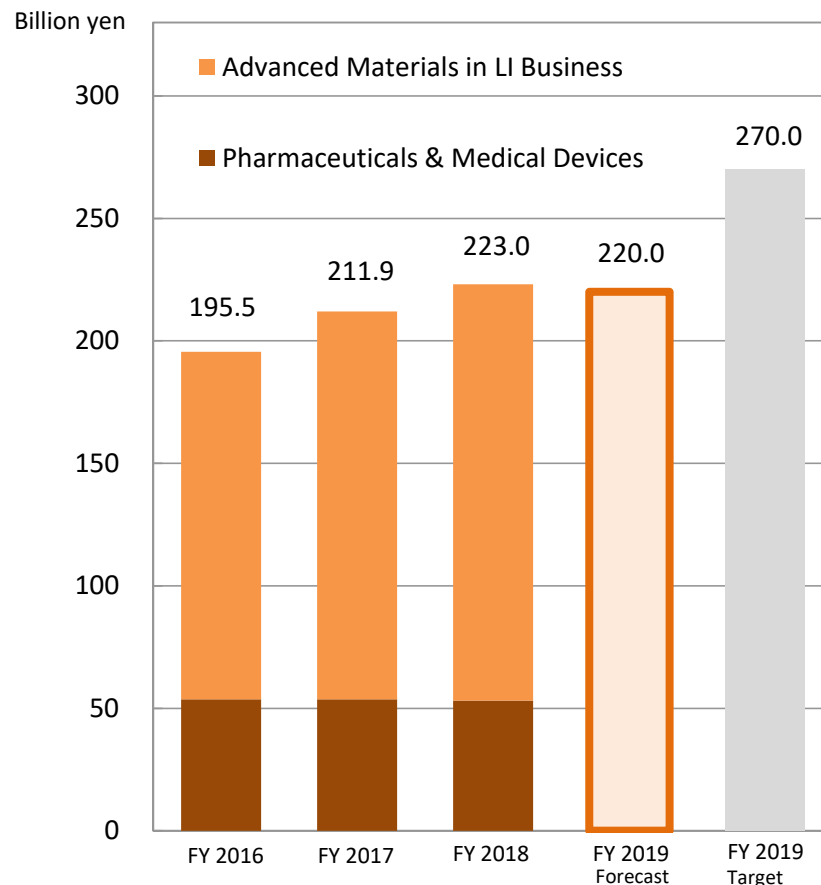


### Pharmaceuticals and Medical Devices

- Decided to start sales of OD tablet version of pruritus treatment REMITCH<sup>®</sup>, and received approval of new indications in Japan. (May, Sept. 2017)
- Commercialized “INOUE BALLOON for aortic valve,” a new type of valvuloplasty catheter. (Sep. 2018)
- Signed a license agreement on antipruritic drug “TRK-820” in Thailand and Indonesia. (Jan. 2019)



## Net Sales of Life Innovation Businesses



\*REMITCH<sup>®</sup> is a registered trademark of Torii Pharmaceutical Co., Ltd.

# AE (Asia, Americas, Europe, and Emerging Regions) Project

**Pursued growth investments, established new operational bases, and acquired profit opportunities**

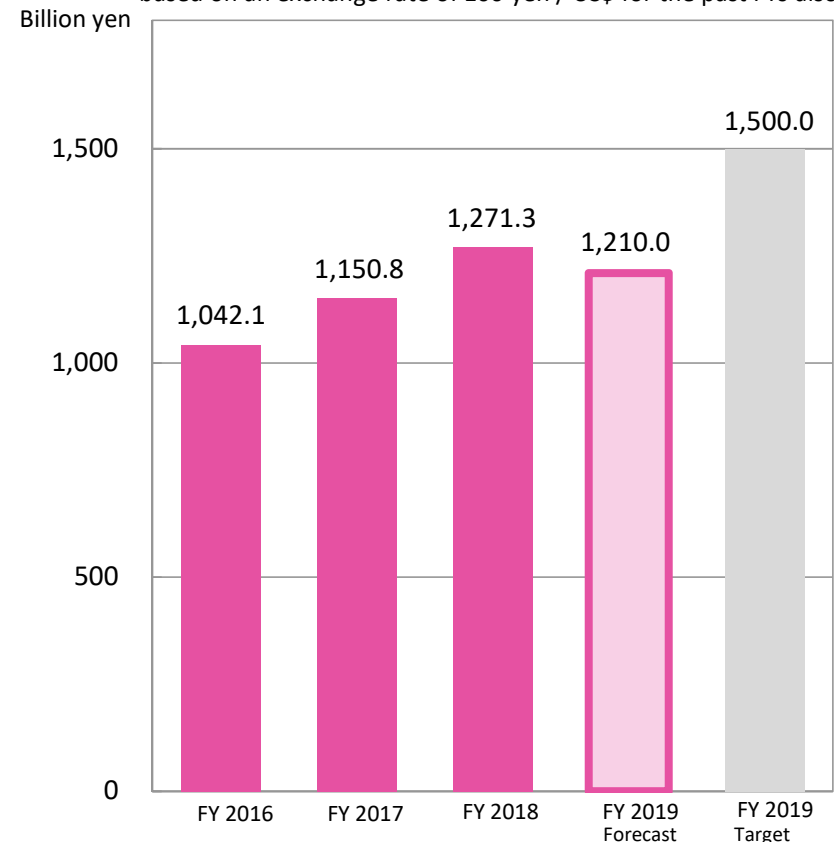
## Topics

- Invested in Pacific Textiles Holdings Ltd., a leading textiles manufacturer in Hong Kong. (Jul. 2017)
- Established a new PPS resin compound production facility at the Zoltek Hungarian plant. (Mar. 2018)
- Opened the Toray Automotive Center Europe (AMCEU) in Germany. (Aug. 2018)
- Decided to increase production capacity of ABS resin TOYOLAC® at a Malaysian subsidiary, Toray Plastics (Malaysia) Sdn. Berhad. (Dec. 2018)
- Decided to increase production capacity of polypropylene film TORAYFAN® at Toray Plastics (America), Inc. (Feb. 2019)
- Completed the acquisition of Alva Sweden AB, a manufacturer of cushions for automotive airbag systems in Sweden, and its two subsidiaries, Alva Confeccões S.A. and AlvaTunisia SA. (Jan. 2020)

## Net Sales of Expansion and Advancement of Global Businesses

<Combined sales of overseas consolidated subsidiaries>

\*based on an exchange rate of 100 yen / US\$ for the past FYs also



# Total Cost Reduction (TC) Project

Reduced 220 billion yen in 3 years from FY 2017

Total Cost Reduction	
<b>Target</b> <ul style="list-style-type: none"><li>▪ Activities of variable cost reduction (annual target at over 3.6%, over 11% in 3 years)</li><li>▪ Control fixed costs through P-ratio accounting method (P-ratio * = under 0.96 each fiscal year)</li><li>▪ Innovation of production process (achieve reduction effects by more than 50 billion yen in 3 years)</li></ul> <small>*P(Performance)-ratio= fixed cost growth rate/ marginal profit growth rate. Target: less than 1.0 or monitored by division under budget.</small>	<b>Forecast (total of 3 years)</b> <ul style="list-style-type: none"><li>▪ Variable costs: reduce 90.2 billion yen (reduction rate: 9.7% in 3 years)</li><li>▪ Fixed costs: reduce 77.5 billion yen (P-ratio for each year=0.98, 1.04, 1.01)</li><li>▪ Innovation of production process: reduce 52.4 billion yen</li></ul>
Target for total of 3 years : 220 billion yen	Total of 3 years : 220 billion yen
Strengthening Corporate Structure	
<b>Topics</b> <ul style="list-style-type: none"><li>▪ Fibers &amp; Textiles: Conducted share and management transfer of a Chinese subsidiary which manufactures polyester/cotton blended textiles.</li><li>▪ Films: Decided to start production of PET films for MLCC release films after modification of an existing facility at Toray Gifu plant.</li></ul>	<b>Strengthening Sales and Marketing</b> <b>Topics</b> <ul style="list-style-type: none"><li>▪ Entered into an agreement with Idemitsu Kosan Co., Ltd. for technical cooperation relating to OLED materials.</li><li>▪ Accelerated global communications by introducing digital tools.</li></ul>



# “AP-G 2019” Target and FY 2019 Forecast

Billion yen

	FY 2016 Actual	FY 2019 Forecast*	“AP-G 2019” Target
Net Sales	2,026.5	2,250.0	2,700.0
Operating Income	146.9	130.0	250.0
Operating Income to Net Sales Ratio	7.2%	5.8%	9%
ROA	6.3%	around 5%	around 9%
ROE	10.1%	around 7%	around 12%
D/E Ratio	0.70	around 0.8	below 1 (guideline)

Exchange rate for “AP-G 2019” target : 100 yen / US\$

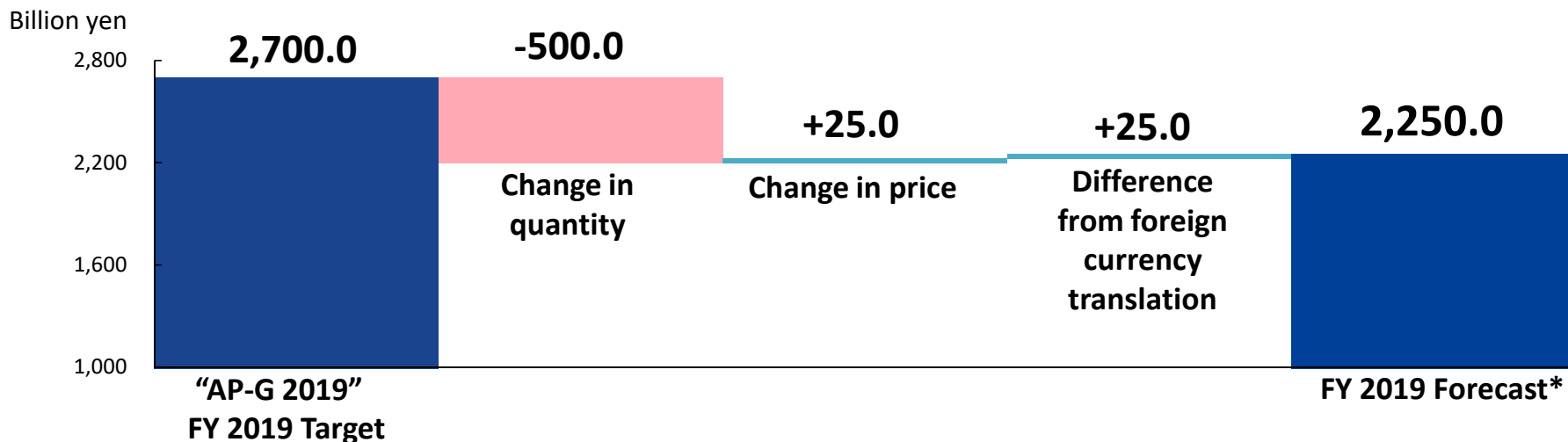
\* Forecast announced on February 10, 2020

ROA = Operating Income / Total Assets

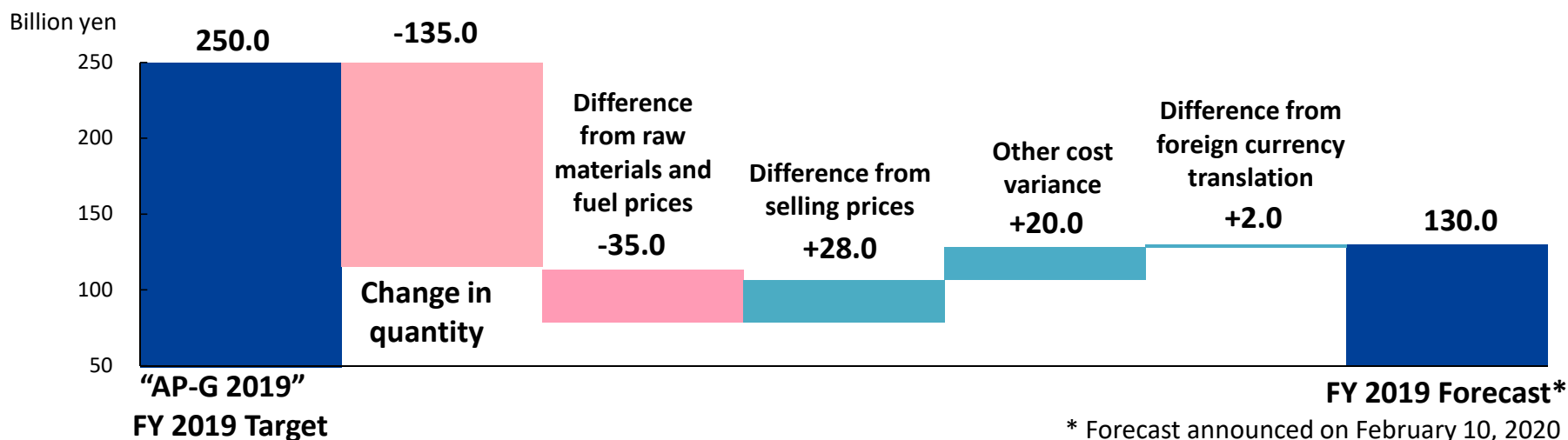
ROE = Net Income Attributable to Owners of Parent / Owners' Equity

# Difference between FY 2019 Forecast\* and “AP-G 2019” Target

## Net Sales



## Operating Income



\* Forecast announced on February 10, 2020

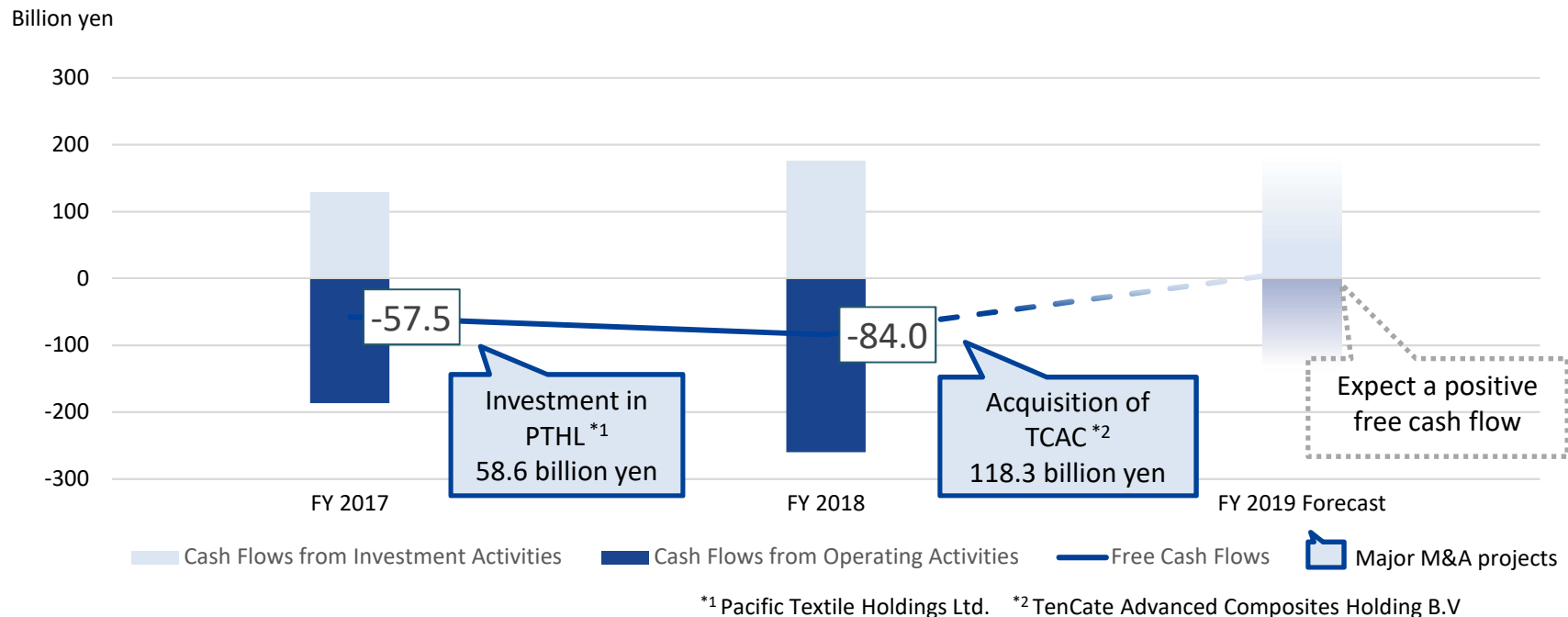
# Difference between FY 2019 Forecast and “AP-G 2019” Target (by Segment)

Billion yen

	Net Sales			Operating Income		
	“AP-G 2019” Target	FY 2019 Forecast*	Changes	“AP-G 2019” Target	FY 2019 Forecast*	Changes
Fibers & Textiles	1,120.0	895.0	-225.0	92.0	61.0	-31.0
Performance Chemicals	950.0	780.0	-170.0	103.0	62.0	-41.0
Carbon Fiber Composite Materials	260.0	240.0	-20.0	45.0	20.0	-25.0
Environment & Engineering	270.0	260.0	-10.0	20.0	11.0	-9.0
Life Science	80.0	55.0	-25.0	9.0	1.0	-8.0
Others	20.0	20.0	±0.0	3.0	3.0	±0.0
Adjustments	-	-	-	▲22.0	▲28.0	-6.0
Total	2,700.0	2,500	-450.0	250.0	130.0	-120.0

\* Forecast announced on February 10, 2020

# Trends in Free Cash Flows during “AP-G 2019”



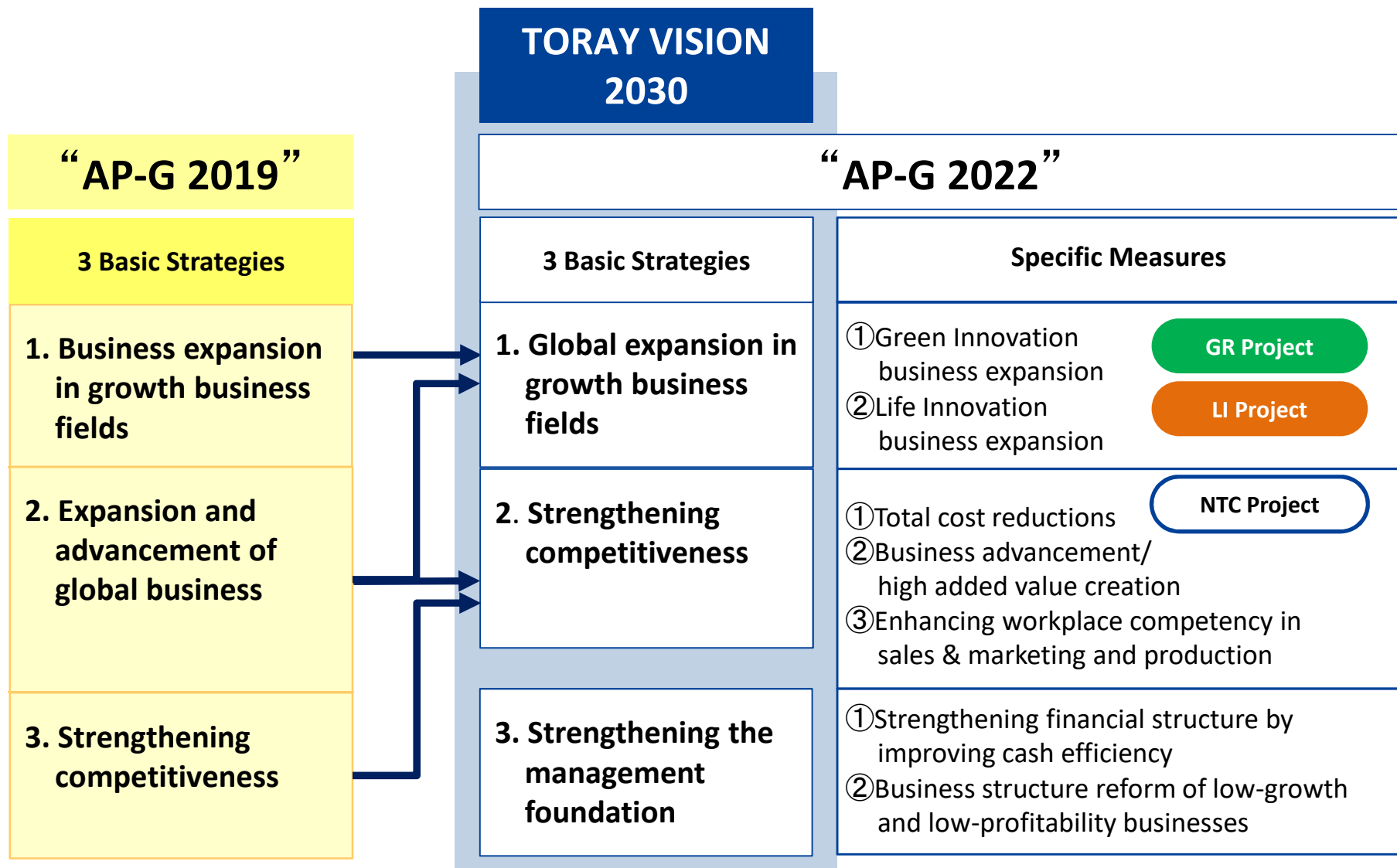
	“AP-G 2019” 3-year Forecast	“AP-G 2019” Plan
Capital Expenditures	around 490.0 Billion yen	500.0 Billion yen
R&D Expenses	around 200.0 Billion yen	220.0 Billion yen

# **III. Medium-term Management Program**

**“Project AP-G 2022”  
(FY 2020 – FY 2022)**

**“Resilience and Proactive Management”  
- Sustainable Growth and New Development**

# Basic Strategies of “Project AP-G 2022”



# Green Innovation (GR) Businesses

## Sales Revenue Target in FY 2022 : 1 trillion yen

### Green Innovation Businesses

Net Sales forecast in FY 2019 830 billion yen

#### Recycling

- Fiber recycling
- Film recycling

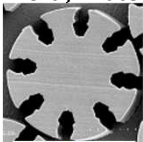
#### Water Treatment

- RO•MBR•MF/UF membranes



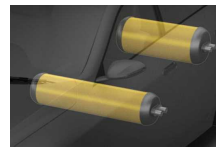
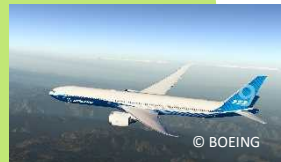
#### Low Environmental Impact

- Non-fluorine water-repellent material
- Toray Waterless Plate®



#### Air Purification

- Dust collecting filter/Air filter

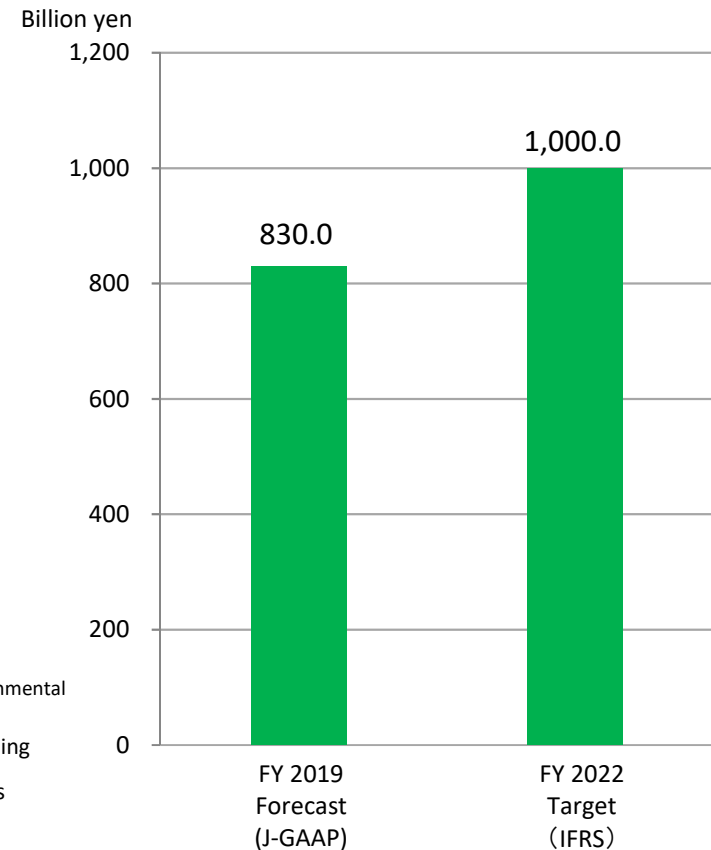


#### Reduction of GHG Emissions

- Resins for automobiles
- Battery separator film for lithium-ion batteries
- Carbon fiber for aircrafts, automobiles, wind-turbine blades, pressure vessels, etc.

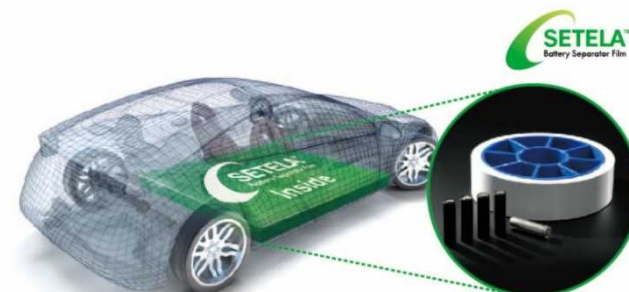


### Net Sales of Green Innovation Business Expansion (GR) Project

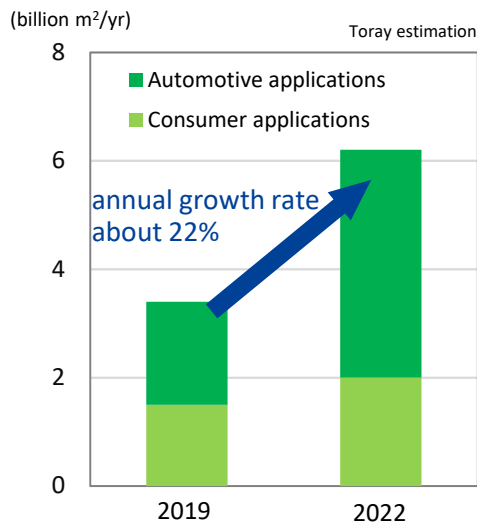


# Battery Separator Films

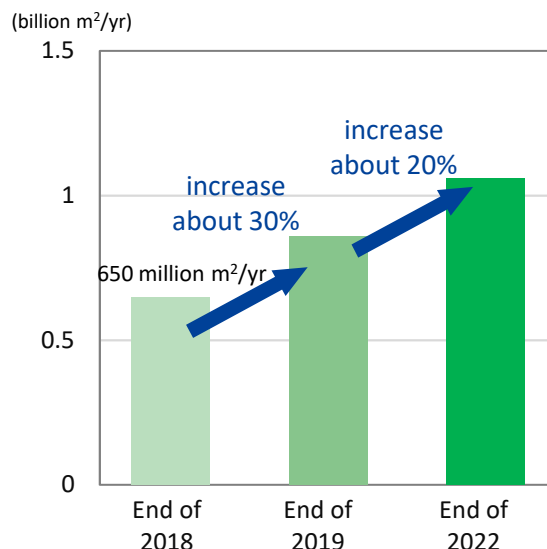
- Pursue cost reduction and expand production capacity of battery separator base films and coating facilities for automotive applications where high growth is expected particularly in the European market. By manufacturing in optimal locations and developing product quality and product types that matches customers' production process, Toray Group will offer proposals for the benefit of customers, from a total cost perspective.
- Accelerate the development speed of consumer applications, with the demand increase from the new IoT devices in view .



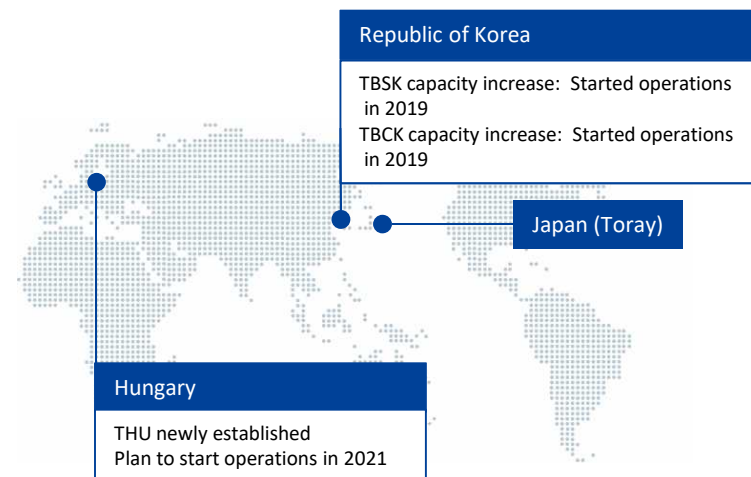
### Demand for Battery separator films



### Toray Group production capacity of Battery separator films



### Toray Group Battery Separator Films Production Bases



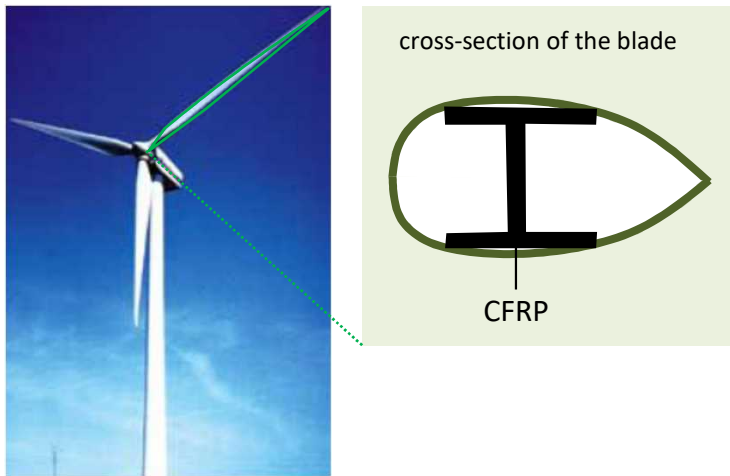


# Carbon Fiber for Wind Turbine Blades

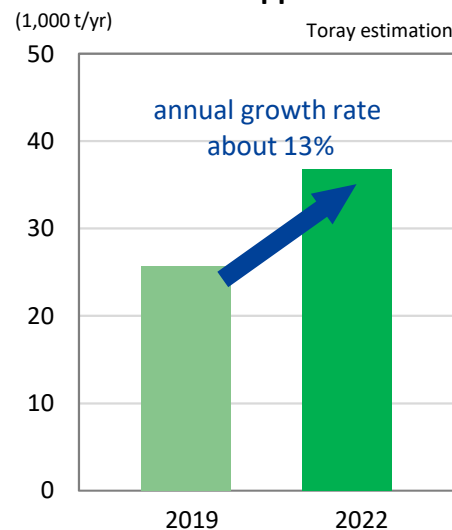
- In addition to the increase in the number of wind power generation systems, expect increase in size of blades and the proportion of carbon fibers used, given the fact that installation locations are shifting to offshore and low-wind areas due to site restrictions.
- In order to capture the market growth, invest continuously to large-tow carbon fibers for wind turbine blade applications at Zoltek's Hungary and Mexico bases, and aim for business expansion.

## Increasing size of blades

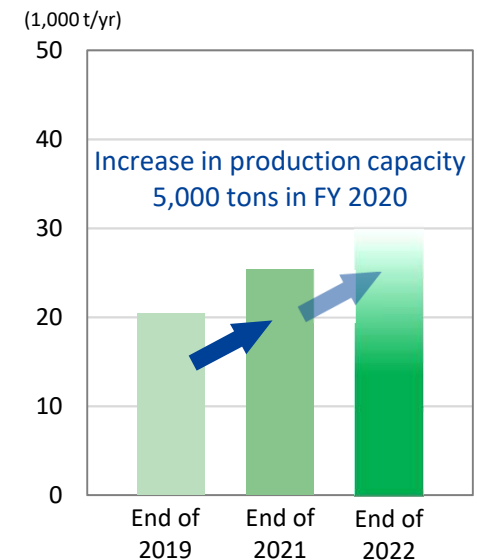
Accelerating shift to carbon fibers due to increasing demand for light-weight and high-modulus properties associated with increasing blade size



## Demand for wind turbine blades applications

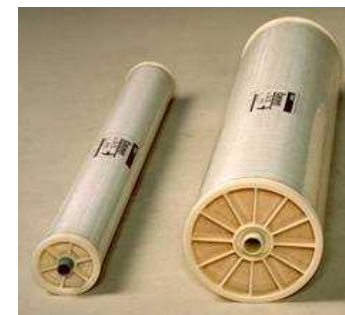


## Production capacity of Zoltek



## Reverse Osmosis (RO) Membranes

- Establish a global system for production to respond to demand increase in the RO membrane business where demand is expanding, particularly in the Middle East and China. Aim for world's No. 1 market share through the development of new high-performance products while pursuing cost reduction.

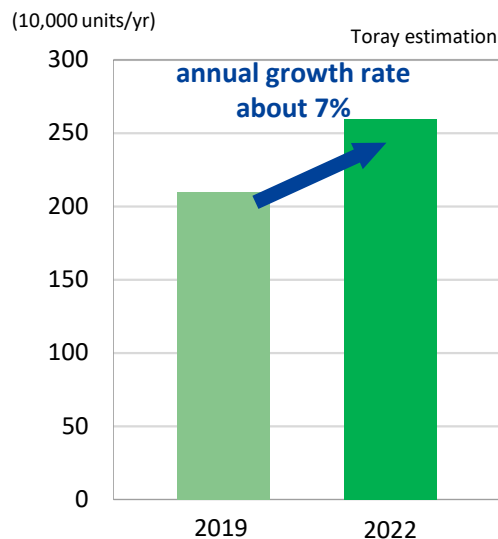


RO membrane

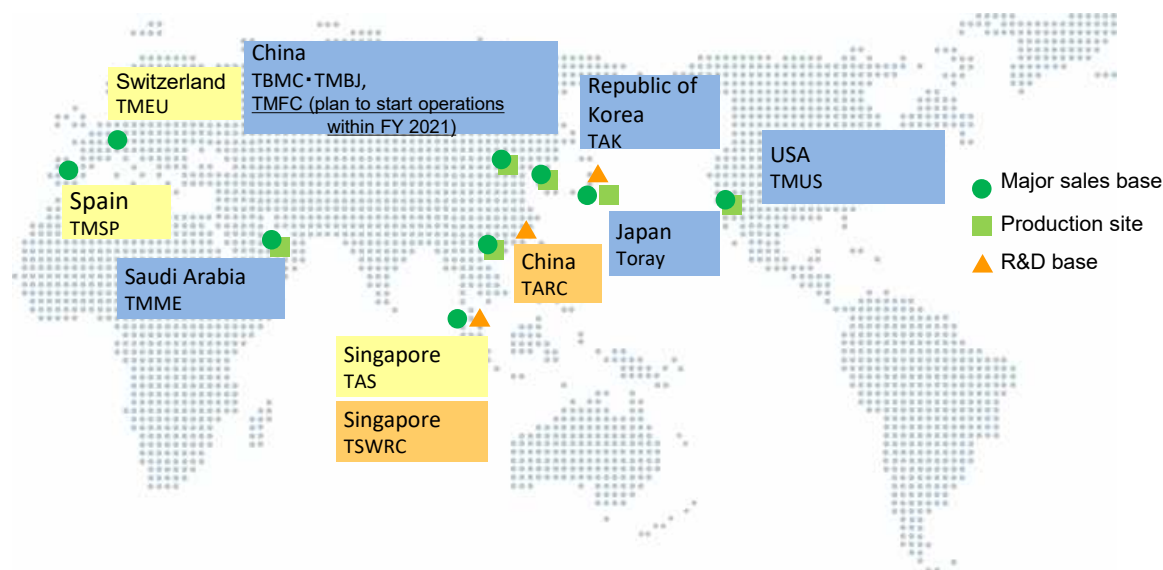


Seawater desalination plant in Algeria

### Market size of RO membranes for industrial applications



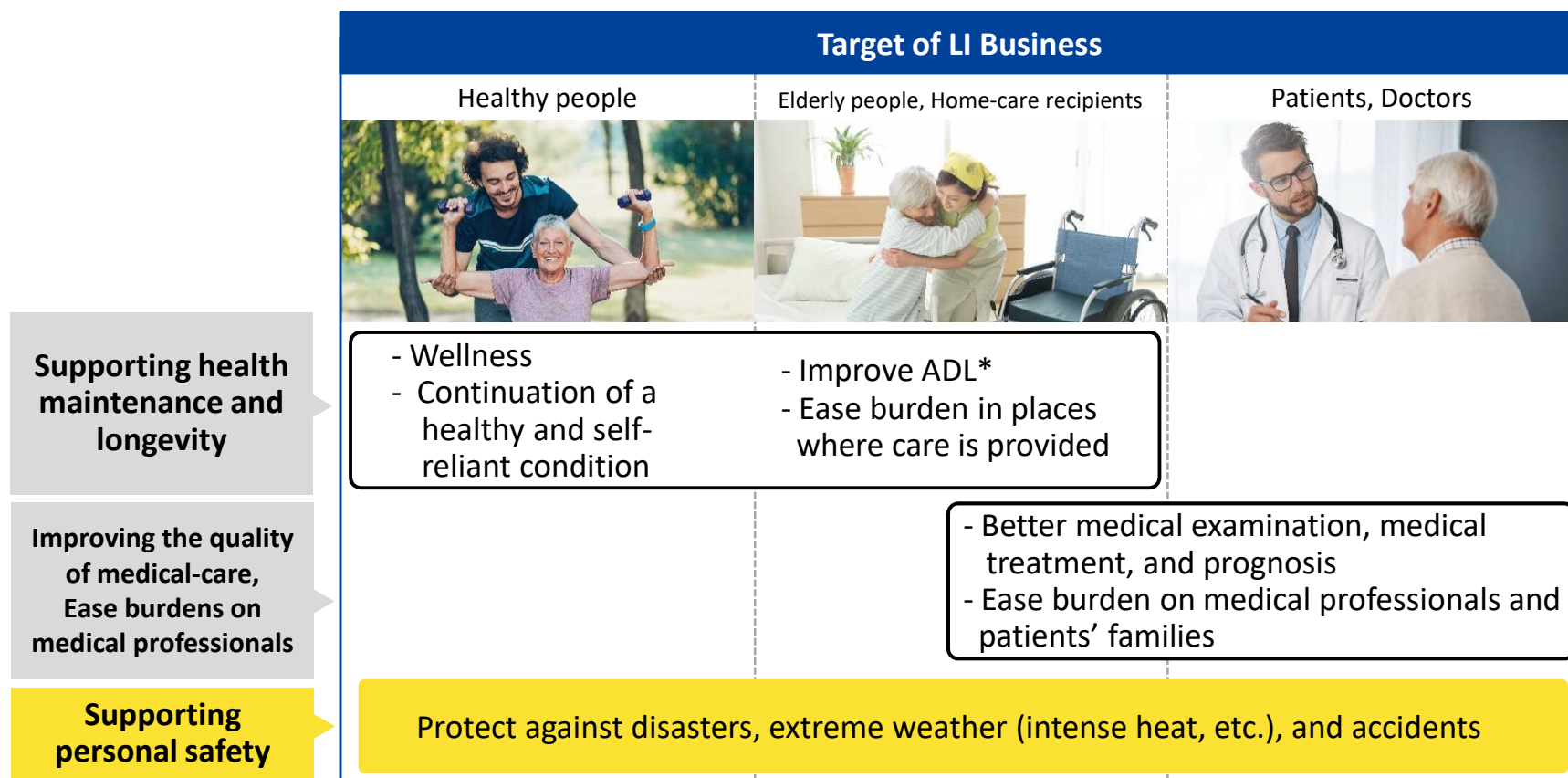
### Toray Group Water Treatment related operational bases Plan to increase Toray Group's production capacity by 1.6-fold against 2019 in 2022



# The Concept of Life Innovation Businesses

Basic Strategy 1

In addition to the conventional concepts of contributing to health maintenance and longevity and improving the quality of medical care, will broaden the definition to include products for “personal safety” to respond to threats on society such as recently increasing natural disasters and extreme weather

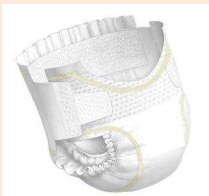


\*ADL : Activity of Daily Living (eating, dressing, toileting, bathing, grooming)

# Life Innovation (LI) Businesses

**Sales Revenue Target in FY 2022 : 300 billion yen**

## Support health and longevity



Non-woven fabric  
for hygiene products



Materials for  
facilitating access



Sportswear  
fabrics



Home water  
purifiers

## Improve quality of medical-care, Ease burdens on medical professionals



Dialyzers



Catheter



Medical-use  
hitoe®



Pharmaceuticals

## Support personal safety



Heat-shielding/light  
shielding/UV protective  
SUMMER SHIELD®

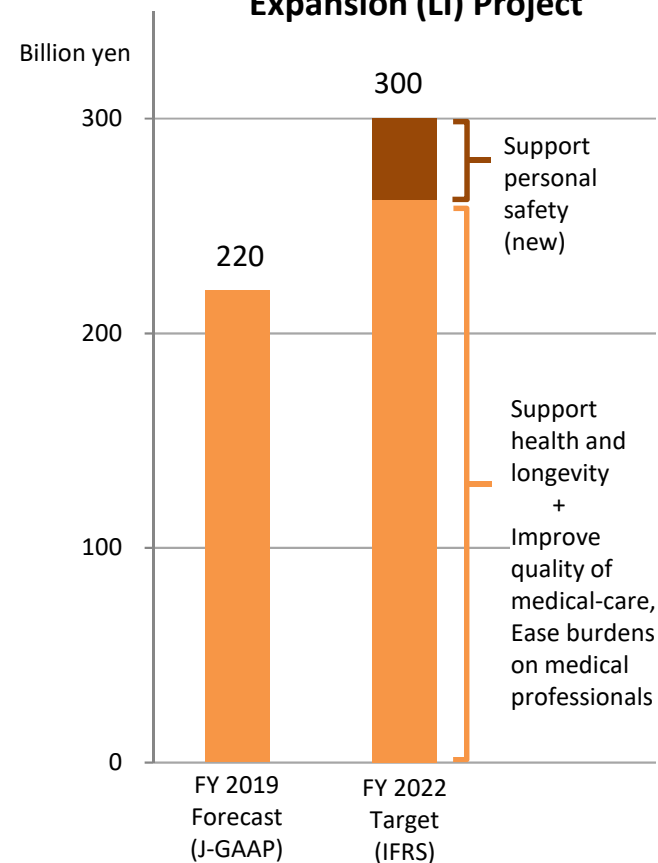


Non-woven fabric with  
flame-shielding  
property, GULFENG®



Protective clothing  
LIVMOA®

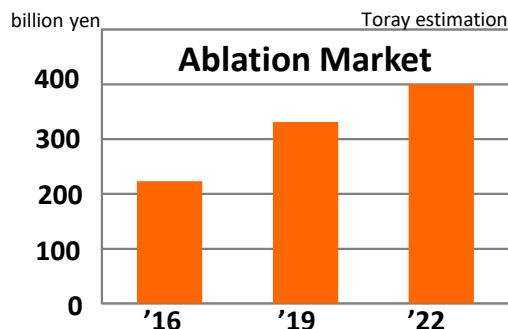
## Net Sales / Sales Revenue of Life Innovation Business Expansion (LI) Project



# SATAKE・HotBalloon® Ablation System

## Business Environment

- With the progress of aging society, the number of patients with atrial fibrillation (a type of cardiac arrhythmia) are increasing.
- Definitive care for atrial fibrillation is needed, as it might prevent other illness such as cerebral infarction, heart failure, and dementia.



Market growth rate (2016→2022)  
over 10% annually

Market size (2019)  
Global: 330 billion yen  
(of which 20 billion yen in Japan)

**Japanese and Global  
Market is Growing.**

## SATAKE・HotBalloon® : Ablation Catheter for Atrial Fibrillation

- The world's first heat conductive balloon ablation system (launched in Japan in 2016)
- The HotBalloon will shorten the procedure time and will have lower recurrence rate as it ablates Pulmonary Veins seamlessly.



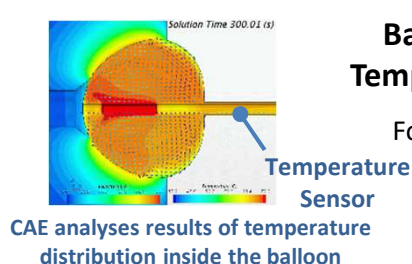
## Development Status and Future Plans

- The 2020 model, which pursues further safety, effectiveness, and handling, is being developed (plan to launch in summer/ autumn of 2020 in Japan).



**Balloon with Mapping  
Electrodes**

For Real-Time  
Pulmonary Vein  
Isolation Monitoring



**Balloon Surface  
Temperature Sensor**

For Ideal Procedure  
Setting



**Functionally  
Integrated Handle**

For Better Handling

- Expand overseas operations (obtaining CE-marking, preparing for the clinical trial in the US)

# LIVMOA™ 5000 Protective Clothing

## Business Environment

- Infectious disease risk is increasing with the impact of climate change and globalization of people and products
- Increased demand for Personal Protective Equipment to protect medical professionals while easing their work in severe environments
- Increasing occurrence of public health emergencies of international concern (PHEIC\*)

\*Public Health Emergency of International Concern The term is defined by WHO as the following:

1. Constitutes a public health risk to other States through the international spread of disease; and 2. potentially requires a coordinated international response

## LIVMOA™ 5000 Infection Prevention Suit

- Balances a high level of safety with durability, and comfort.

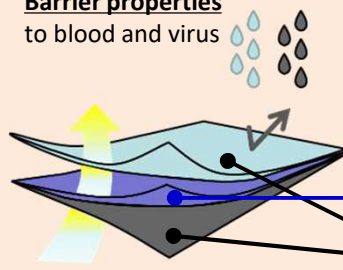
Highly-functional and highly moisture permeable waterproof film / Multi-layered structure of Nonwoven fabric



Successfully balances the contradictory properties of permeability while acting as a barrier to viruses and blood born pathogens. Through the technological integration of microporous film and non-woven fabric, an infection prevention suit with high workability and comfort was created.

### Composition of LIVMOA™ 5000 fabric

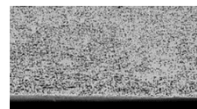
**Barrier properties**  
to blood and virus



**Moisture permeability**

#### Microporous film

Highly-functional and moisture permeable waterproof film



**Nonwoven fabric**

### Relationship between Barrier Properties and Moisture Permeability

Barrier to virus <sup>1)</sup>	Class 6
Barrier to synthetic blood <sup>1)</sup>	Class 6
Moisture Permeability (g/m <sup>2</sup> /hr) <sup>2)</sup>	330

1) EN14216 standard class 6 is the highest

2) Toray calculation

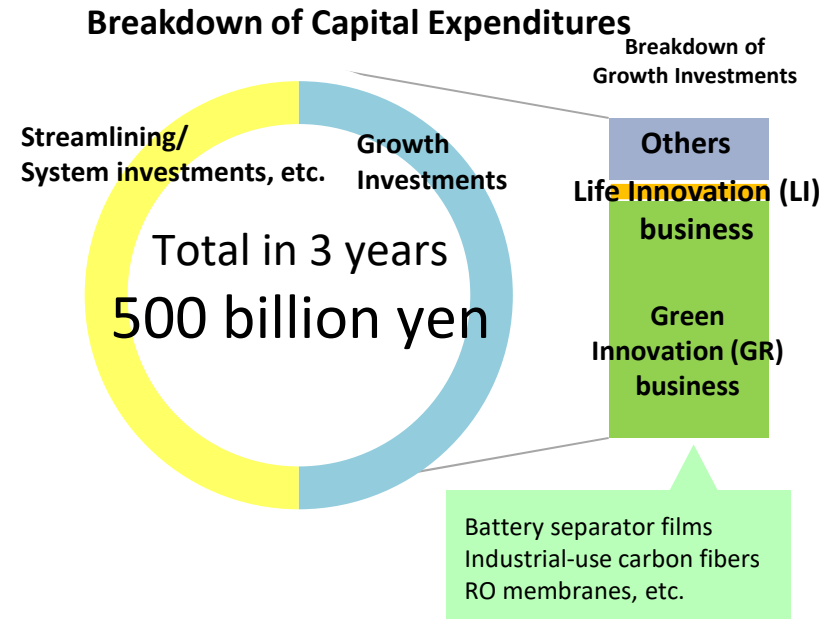


# Capital Investment, M&A , Business Alliances

## Capital Investment

**Proactively pursue growth investments in growth business domains**

- Invest around 50% of total capital expenditures for the purpose of business growth and expansion
- Implement capital investments efficiently
- Aim to minimize potential risks by carefully selecting the investment plans
- Make efficient use of existing facilities



## M&A, Business Alliances

**Carry out M&A and alliance activities to pursue the growth of existing businesses where Toray Group can expect synergies that leverage its strengths in advanced materials, core technologies, and global business platforms, and accelerate the launch of new businesses**

- Conduct strategic investments separately from capital investments

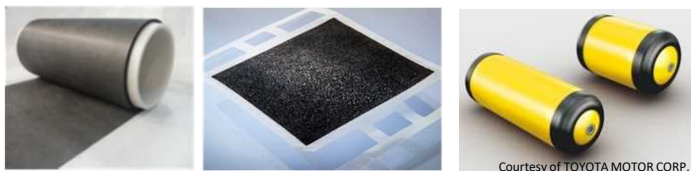
## New Business Creation

Invest resources selectively to large scale themes for the next growth stage, and accelerate product development and the establishment of business models, with the aim to achieve total sales of around 1 trillion yen in the 2020s

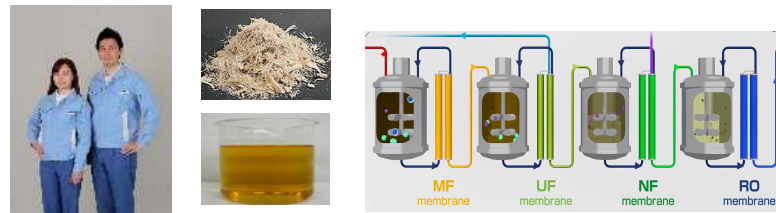
### Future TORAY-2020s Project (FT Project)

#### Examples of themes in “AP-G 2022”

##### Hydrogen-fuel cell related materials



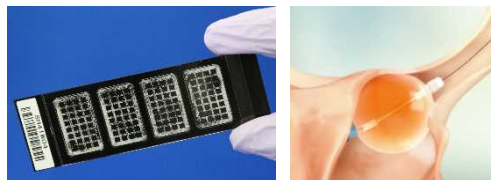
##### Biomass-utilization products and processing technologies



##### Environmentally-friendly printing solutions



##### Hygiene, Health-care products



##### Sensing devices related materials





# R&D, Intellectual Property

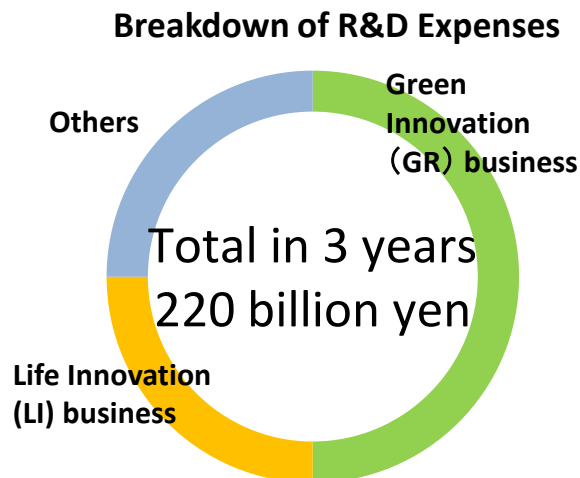
## R&D

**Invest resources to future large scale themes, contribute to the realization of the Sustainability Vision, and further leverage comprehensive capabilities by integrating fundamental technologies with original technologies**

- Invest resources to future large scale themes and highly-profitable themes
- Upgrade and optimize R&D and production with digital utilization
- Promote themes including innovative separation materials, innovative medical materials/regenerative medicines, IoT, sensing devices, and computer sciences, at the R&D Innovation Center for the Future

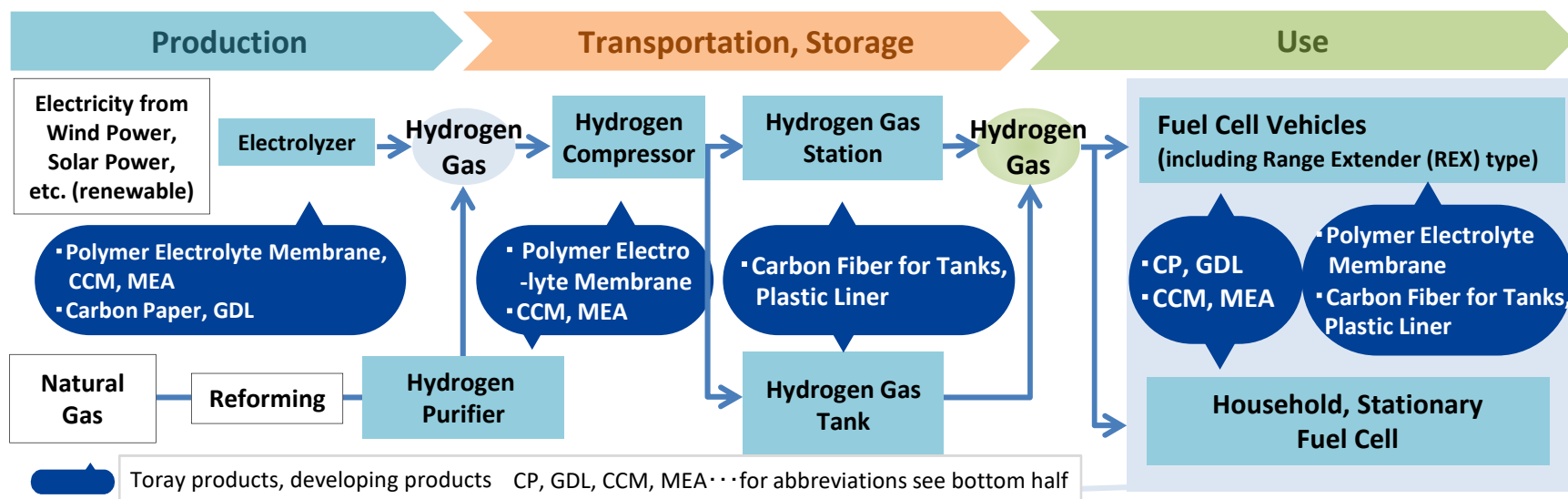
## Intellectual Property

**Raise barriers for market entry through strategic patent applications and know-how protection, enhance global intellectual property capabilities**



# Initiatives for the Realization of “Hydrogen Society”

Promote R&D of various products for the realization of a low-carbon circular economy

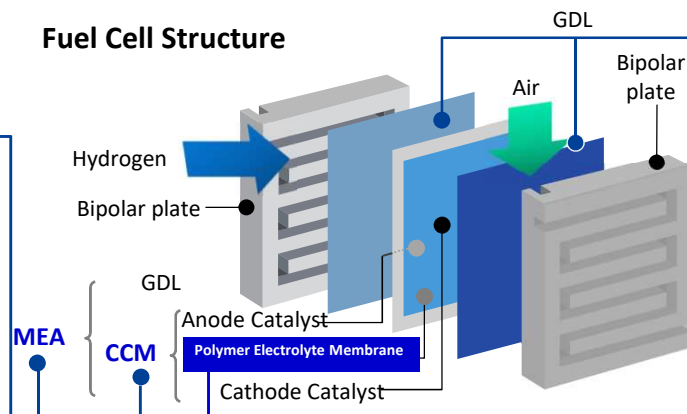


## Application Example of Toray's Advanced Materials Polymer Electrolyte Fuel Cell

### CCM (Catalyst Coated Membrane) MEA (Membrane Electrodes Assembly)

Decided to establish the second factory at a German subsidiary, Greenerity GmbH (plan to start operation in Nov. 2021)

### Fuel Cell Structure



**Carbon Paper (CP)**  
**Gas Diffusion Layer (GDL)**  
Start full operation at Ehime Plant (FY 2020)

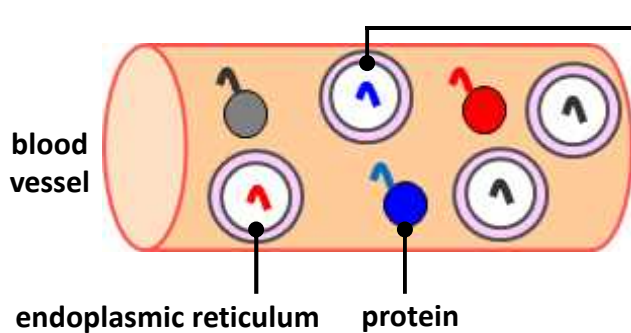


**Hydrocarbon Type Polymer Electrolyte Membrane**  
Start production (FY 2019)

# Development of Early-diagnosis Technology with DNA chip

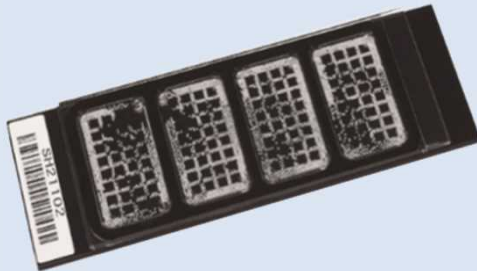
## - Analysis of MicroRNA in Blood -

### MicroRNA



### MicroRNA (miniscule amount)

MicroRNA controls the protein inside the cell. Since it is released into the blood from cancer cells, it has the potential to be a cancer diagnosis marker. However, the amount is so miniscule that a **highly sensitive detection** method is required for its detection.



### DNA chip “3D-Gene”

- Enabled the detection of microRNA in blood by **achieving 100 times more sensitivity than conventional products**
- Identified blood microRNA markers for 13 kinds of human cancers and dementia

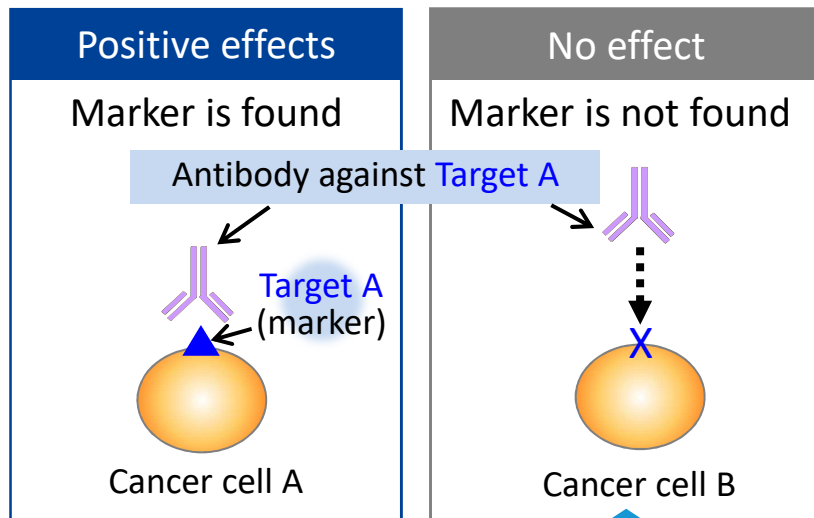
- DNA chip test kits for the detection of pancreatic cancer and biliary tract malignancy was designated as one of objects in “SAKIGAKE Designation System” by the Ministry of Health, Labour, and Welfare Aiming for application within fiscal 2020
- By prioritizing the Diseases to be diagnosed, sequentially aim to apply for approval of In Vitro Diagnostics.

# Anti-cancer Drug TRK-950 (antibody drug)

## About TRK-950

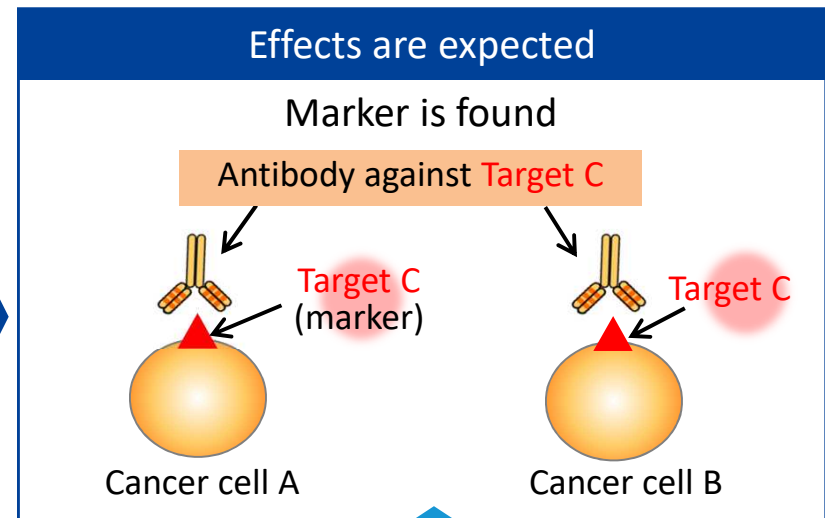
- An antibody against novel target which is expressed at high levels on various human cancer cells
- Aim for market approval as first-in-class (innovative) anti-cancer drug in the 2020s

### Existing antibody



Possibility of both positive and negative expression of target A in the same type of cancer

### TRK-950



Detected an target C expressing in many types of tumors

## Clinical trials

- Started Phase I clinical trials in the US (2 sites) and France (1 site) from March 2017
- Expanded research in the US (5 sites) and France (1 site) and additionally started confirmation of safety and effectiveness for treating colon cancer, cholangiocarcinoma, bladder cancer, ovarian cancer, gastric cancer, kidney cancer and malignant melanoma etc.

**Strengthen competitiveness through maximization of cost reduction and added value**

## 1. Total Cost Reduction

### **Total Cost Reduction Project (NTC Project)** **Target to reduce 150 billion yen in 3 years**

**Variable Cost Reduction**  
Target to reduce 100 billion yen  
in variable costs  
(annual target : over 3.7% YoY)

**Fixed Cost Reduction**  
Target to reduce 35 billion  
yen in production  
fixed costs

**Innovation of Production Process**  
▪ Refine themes that directly link  
to substantial cost reduction  
▪ Aim for reduction effects at 15  
billion yen in 3 years

## 2. Business Advancement / High Added-value Creation

- Achieve advancement in products
- Add high-value by integrating and combining products and services
- Create new value in collaboration with external partners
- Pursue innovation in the value chain using Information and Communication Technology (ICT)

## 3. Enhancing Workplace Competency in Sales & Marketing and Production

- Lead the maximization of value-adding by strengthening the ability of the sales force to gather information, provide supply chain insight, the ability to make comprehensive sales proposals, and the ability to resolve issues
- Continually improve labor productivity by strengthening the ability to maintain equipment, resolve onsite problems, and the ability to resolve issues in order to meet customer requirements

## Expand cash flows and enhance asset efficiency

### 1. Strengthening financial structure by improving cash efficiency

- Improve the certainty of return on investment
- Introduce management-based free cash flows internally
- Reduce working capitals
- D/E ratio around 0.8
- Set goals for dividend payout ratio (about 30%)

#### Total of FY 2020 - FY 2022

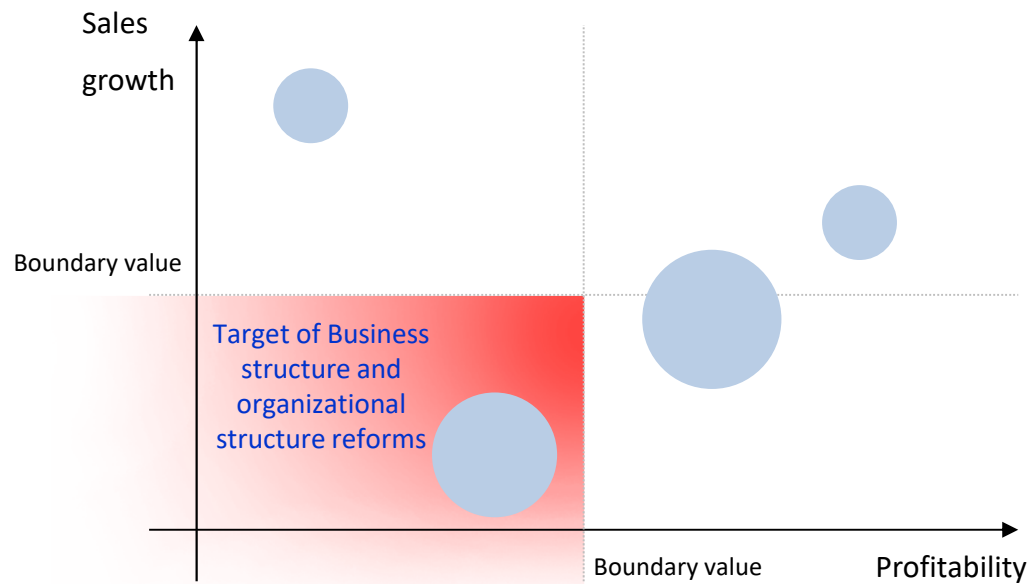
CASH-IN	Cash flows from operating activities	620 billion yen or more
CASH-OUT	Cash flows from investment activities	500 billion yen ※
Free Cash Flows		120 billion yen or more

※exclude M&A

## 2. Business structure reform of low-growth and low-profitability businesses

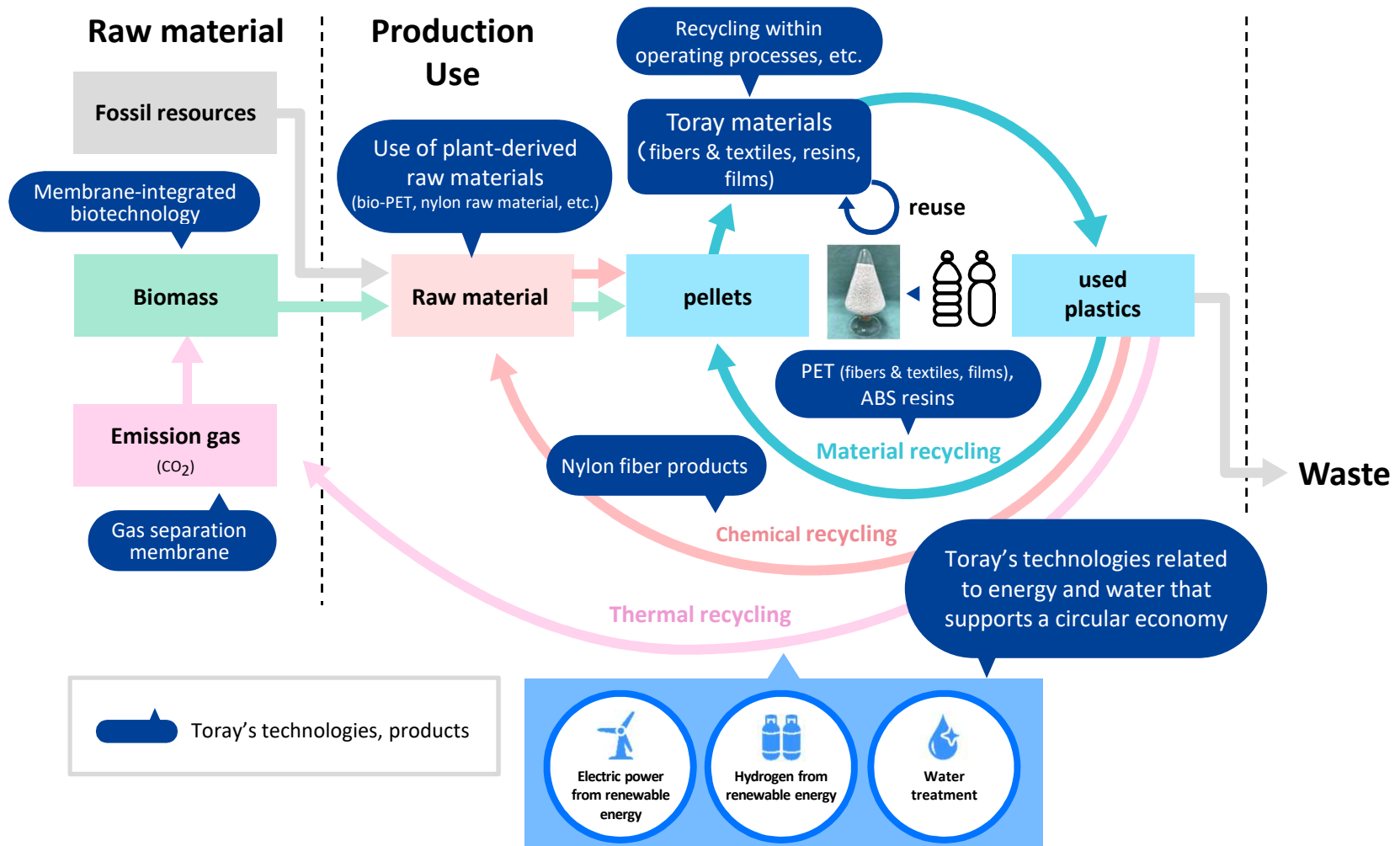
- Conduct business structure and organizational structure reforms of low-growth and low-profitability businesses
- Will consider options including reducing or withdrawal from businesses with low market growth potential or where it would be difficult to make the most of Toray Group's strengths in the future

Determine once a year of target businesses and companies that fall below boundary value for “sales growth” and “profitability”, and conduct business structure and organizational structure reforms



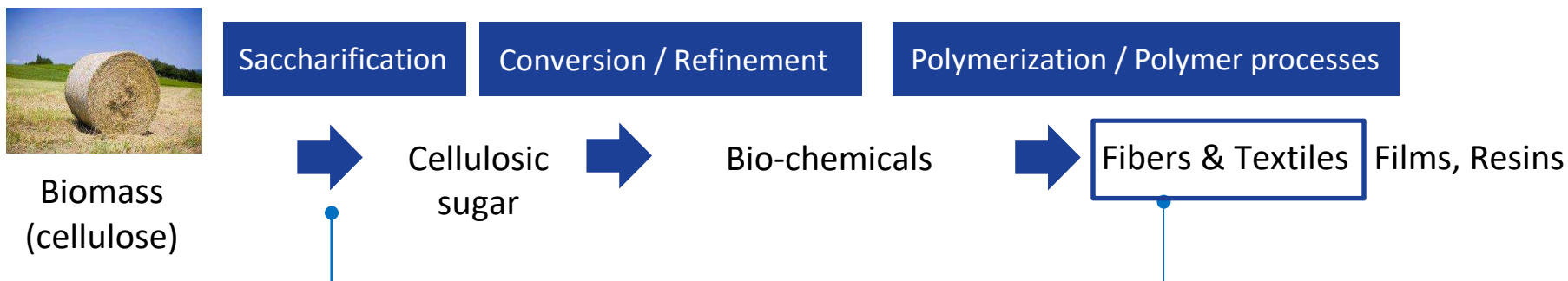
# Key Initiatives (1) Initiatives for a Circular Economy

Contribute to initiatives including biomass plastics, recycling, promoting of renewable energy and the use of hydrogen, and water reuse



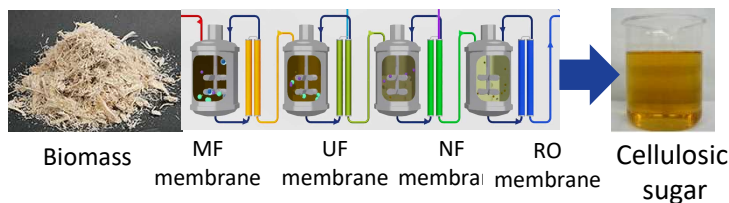


# Utilization of Biomass



## Membrane-integrated saccharification process

A processing technology that realizes cost reduction through energy-saving and recycling by applying water treatment membranes for the biomass saccharification process.



Installed demonstration plant for cellulosic sugar production in Thailand, started prototype evaluation by customers

## Partial Bio-PET fiber

already in mass production



“Ultrasuede® BX,” a non-woven material created using ultra-fine fibers made with plant-based raw materials

## 100% Bio-PET fiber

- Completed prototype production at the demonstration plant
- Positioning it as a top-level environmentally-friendly material, started prototype evaluation mainly for sportswear and automotive interior applications
- Aim for mass production in the 2020s

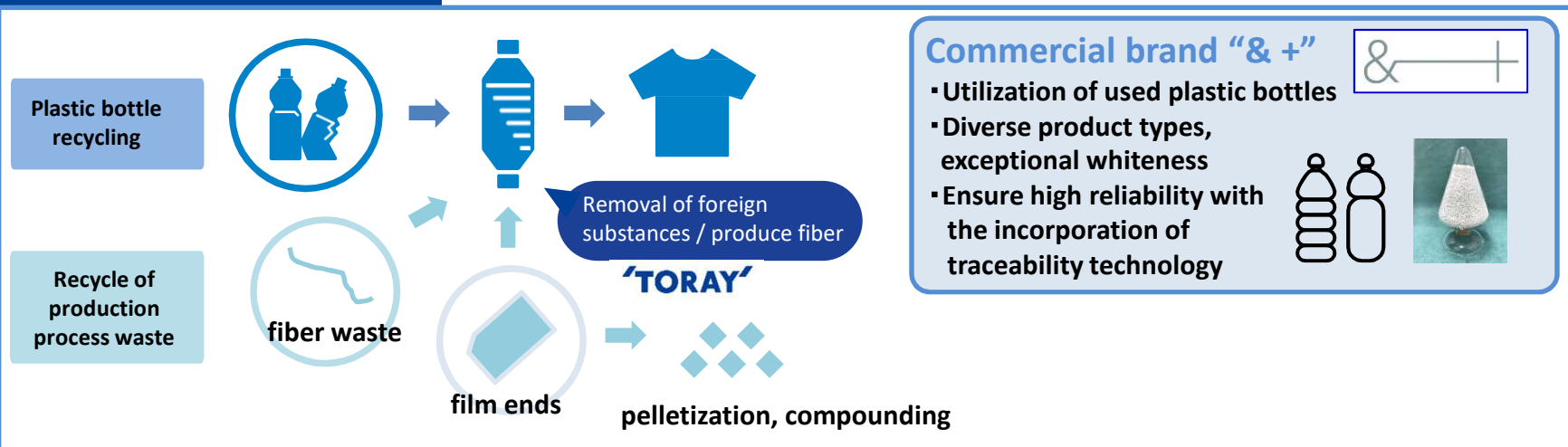


# Promotion of Recycling

## Regeneration-type recycling

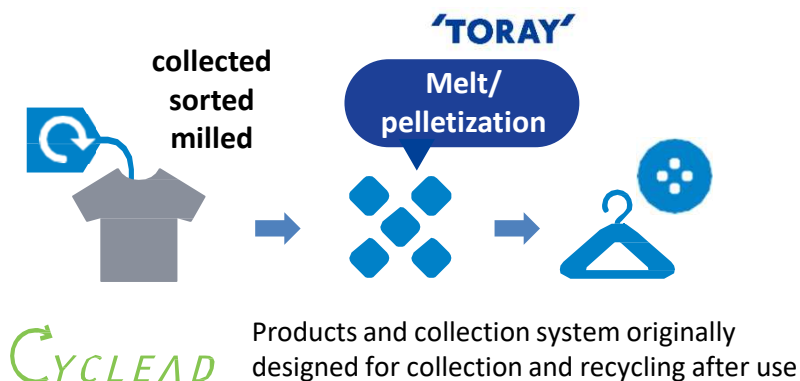


The reuse of production process wastes and used plastic bottles as raw materials is expected to reduce the use of fossil resources and reduce wastes

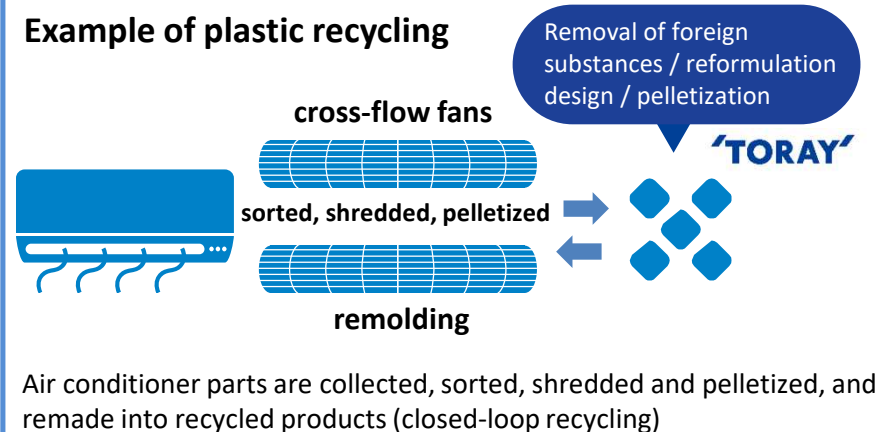


## Collection and circulation type recycling

### Example of fiber & textile recycling



### Example of plastic recycling



Air conditioner parts are collected, sorted, shredded and pelletized, and remade into recycled products (closed-loop recycling)

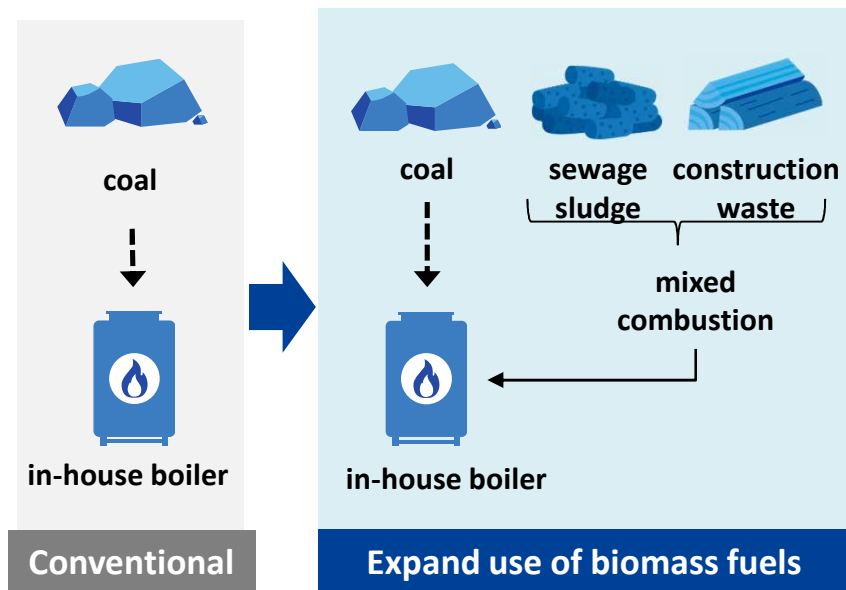
# Reduction of Greenhouse Gas Emissions in the Production Stage

Prepare and implement concrete action plans to achieve the FY 2030 targets to reduce both greenhouse gas emissions and water usage per unit of sales revenue by 30% compared to FY 2013.

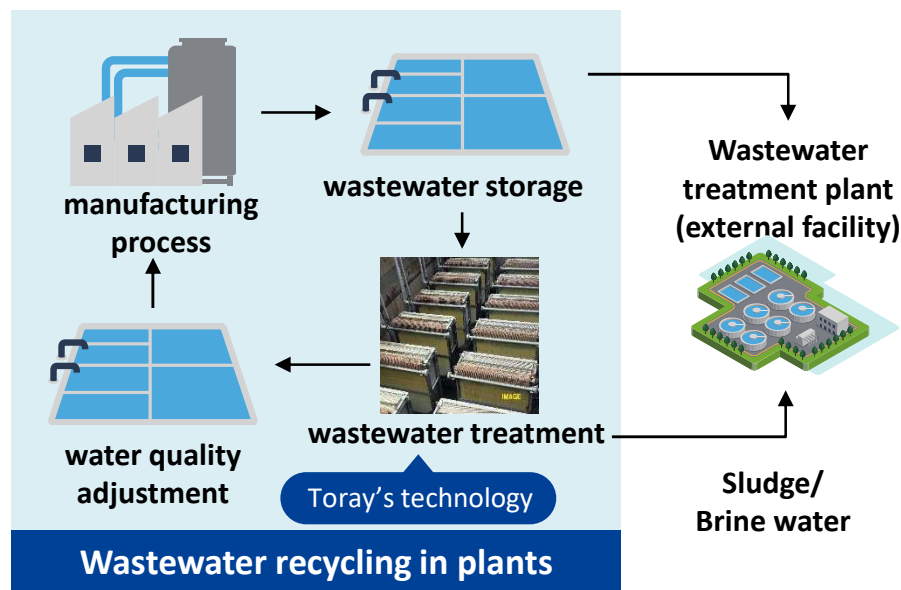
### Challenge 30 Project

- Implement regular energy-saving activities with stronger cooperation between sites in and outside Japan, and adopt successful case studies across the Group
- Shift to purchasing electricity instead of generating with coal-fired boilers, and increase the usage of biomass fuels
- Promote wastewater recycling, etc. with Toray Group's water treatment technologies

### Reduction of GHG emissions



### Reduction of water usage



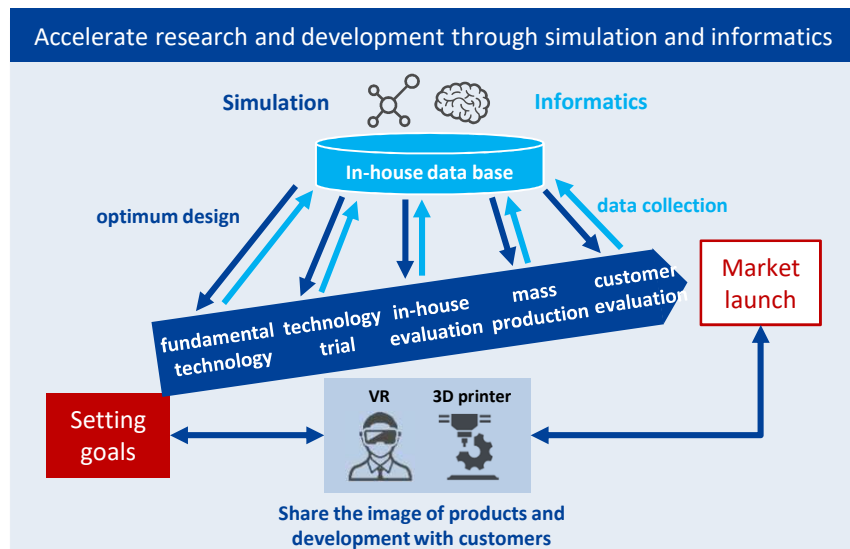
# Advanced Business Management by Utilizing Digital Technologies

## Promote advancements in management through digital transformation (DX)

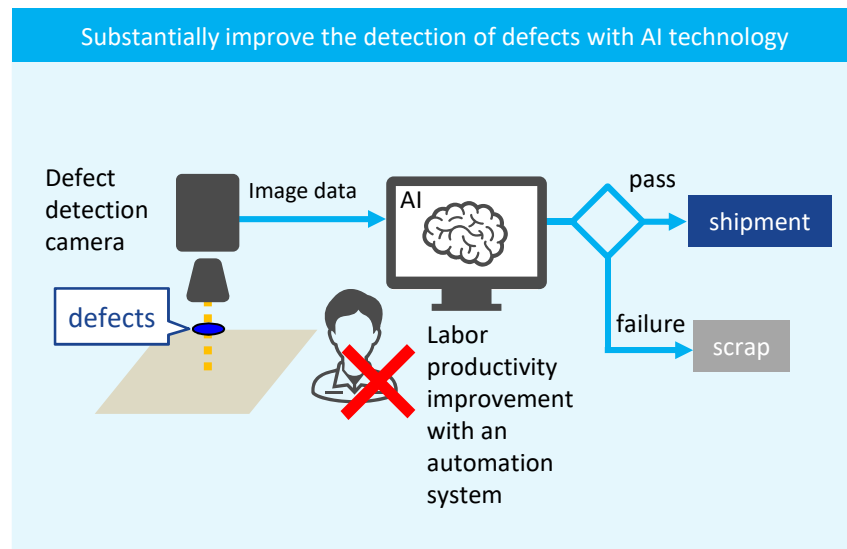
### Toray Digital Transformation Project

- Drive advancement and streamlining by leveraging digital technology in research and technological development (R&D), and production  
Main themes: material and bio design (R&D), quality and productivity improvement (production)
- Visualize global management information in sales & marketing, finance & accounting, and purchasing & logistics, and advance business management

**R&D** Research of advanced materials through Digital Monozukuri (manufacturing)



**Production** Improve labor productivity by application of an automatic monitoring system utilizing AI technology



## Key Initiatives (4) Securing and Developing Human Resources

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**Toray will secure, develop, and promote future management candidates and professional human resources with strong capabilities to lead on the frontlines by realizing a “People-centric Management”**

### **Secure, develop, and promote core staff**

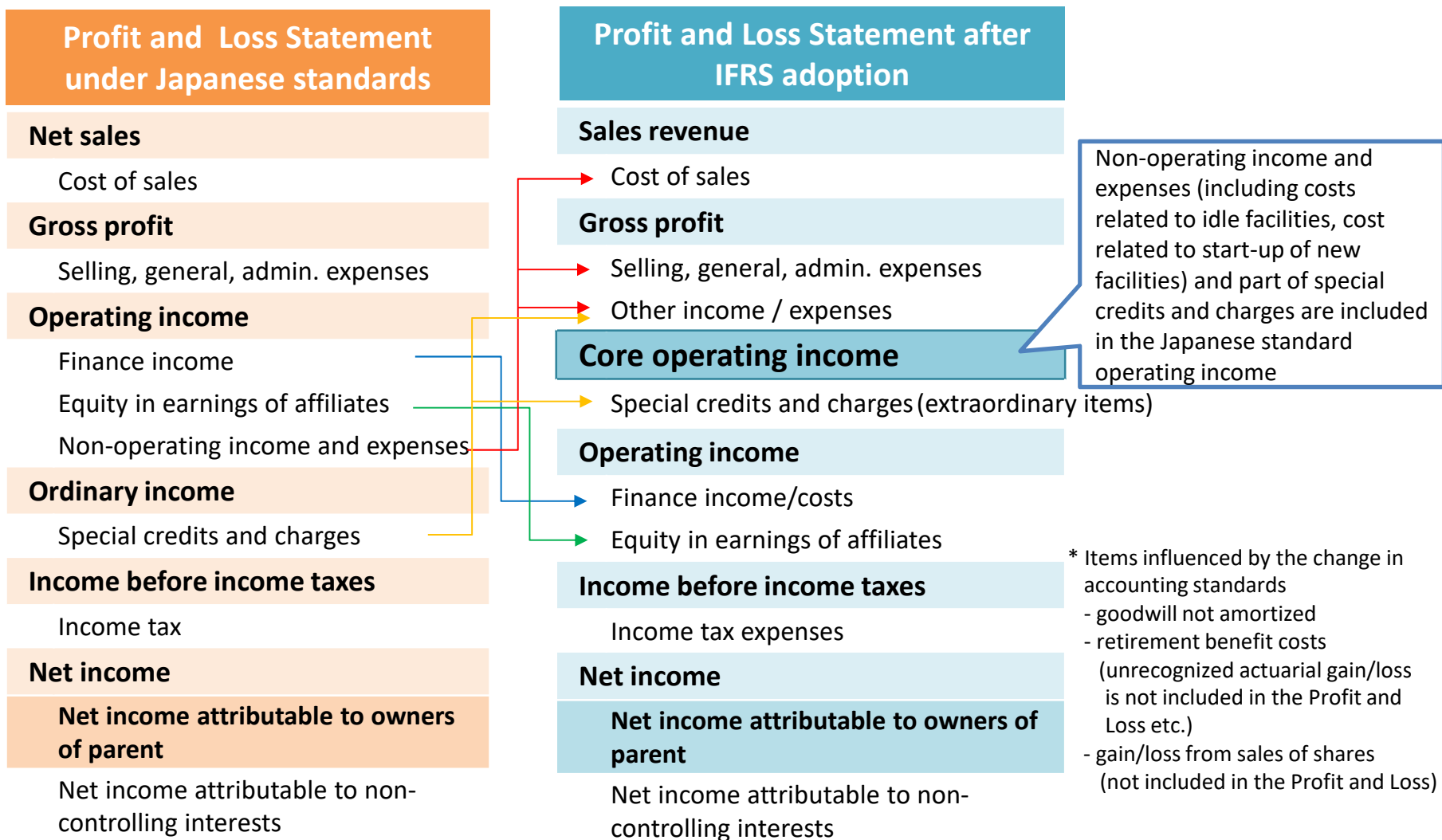
- From a company-wide perspective, strategically provide core staff with the opportunity to develop their career, and promote the acquisition of expert knowledge, capabilities, and experience necessary for formulating management through initiatives to address important management issues
- Develop human resources from a medium to long-term perspective including young candidates
- Strategically secure, develop, and promote core staff outside Japan

### **Secure and develop professional human resources**

- Promote the development of professional human resources by clarifying expert knowledge and capabilities necessary for each job class, in order to strategically develop each individual's career

# Changes in Performance Measures after IFRS Adoption

Ordinary business revenue and profit will be disclosed as **"core operating income"** as a measure of management performance



# Financial Targets in FY 2022

Billion yen

	FY 2019 Forecast		FY 2022 Target (IFRS)
	(J-GAAP*)	(IFRS estimation)	
Net Sales / Sales Revenue	2,250.0	2,130.0	2,600.0
Operating Income / Core Operating Income	130.0	125.0	180.0
Operating Income to Net Sales / Core Operating Income to Sales Revenue	5.8%	5.9%	7%
ROA	about 5%	about 5%	about 7%
ROE	about 7%	about 7%	about 9%
Free Cash Flows	-	-	120 billion yen or more (in 3 years)
D/E ratio	around 0.8	around 0.9	around 0.8 (guideline)
Dividend Payout Ratio	-	-	about 30%

Exchange rate for “AP-G 2022” target : 105 yen / US\$

ROA = Operating Income, Core Operating Income / Total Assets

ROE = Net Income Attributable to Owners of Parent, Net profit Attributable to Owners of Parent / Owners' Equity

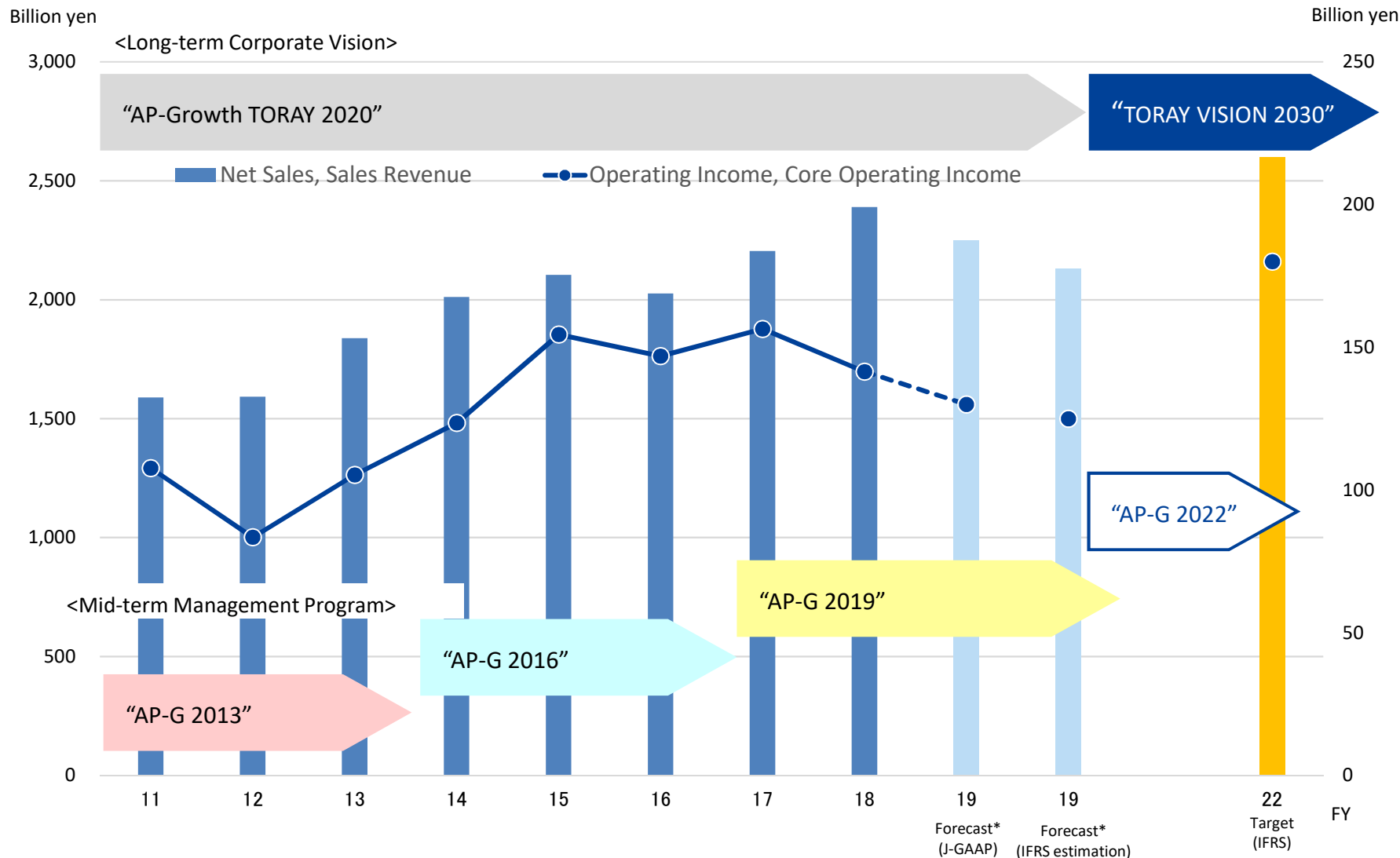
\* Forecast announced on February 10, 2020

# Sustainability Targets in FY 2022

	FY 2013 Actual (baseline year) (J-GAAP)	FY 2019 Forecast (compared with FY 2013) (J-GAAP)	FY 2022 Target (compared with FY 2013) (IFRS)
GR Net sales/Sales Revenue	463.1billion	830.0 billion yen	1,000.0 billion yen
LI Net sales/Sales Revenue	119.6 billion yen	220.0 billion yen	300.0 billion yen
Avoided CO <sup>2</sup> emissions	40 million tons	5.1 fold	5.3 fold
Contributed Annual water filtration throughput	27.23 million tons/day	1.9 fold	2.4 fold
Greenhouse gas emissions per unit of sales in production activities	33.7tons/billion yen	13% reduction	20% reduction
Water consumption per unit of sales in production activities	1,520 tons/billion yen	24% reduction	25% reduction



# Trends in Net Sales, Sales Revenue, Operating Income, Core Operating Income



\* Forecast announced on February 10, 2020

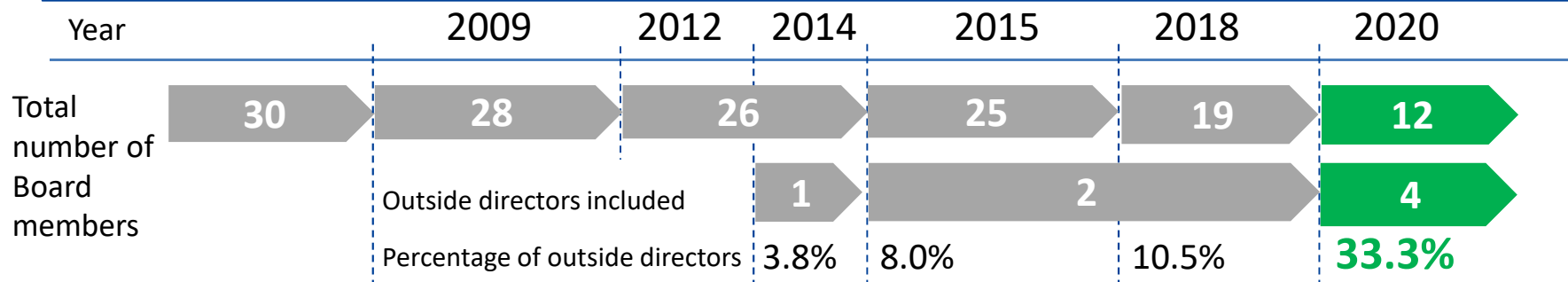
# **IV. Strengthening Corporate Governance**

# Initiatives for Strengthening Corporate Governance ①

## Enhance the effectiveness of the Board of Directors and strengthen the business execution system

### ① Reduction in number of Members of the Board and change in its composition

- Deepen the discussions concerning the Group management policies and mid-term management programs from a wider perspective, and aim to further enhance the effectiveness of the management that contribute to increased corporate value in the medium to long term



### ② Strengthening the Governance Committee

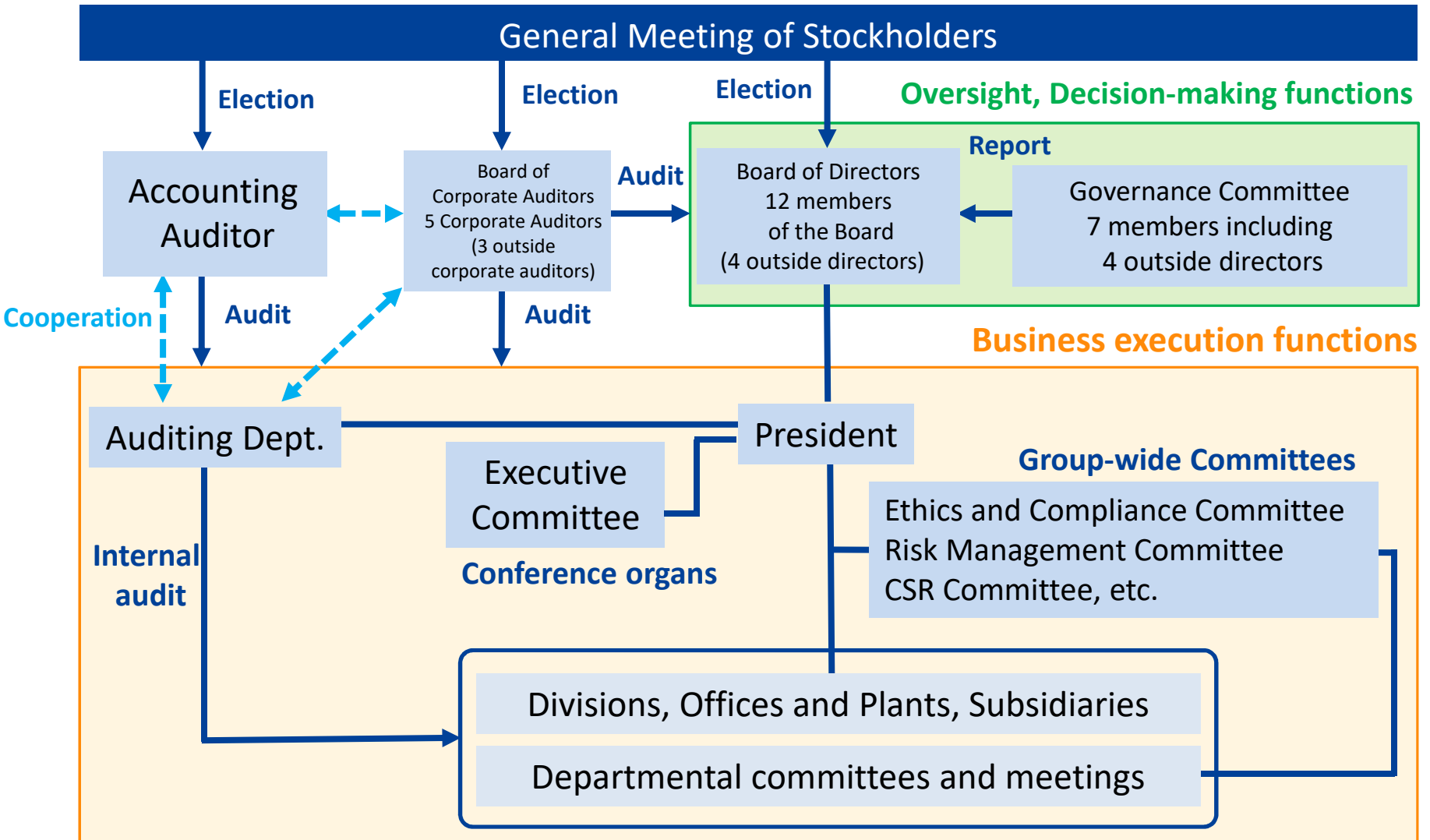
- Increase the members to 4 outside directors and 3 internal members of the Board (chaired by an outside director)
- General matters related to governance shall be discussed and reported from a variety of perspectives

### ③ Introduction of an executive officer system

- Aim for a flexible and efficient management execution, based on quick decision-making, by responding accurately to the changes in the business environment, in order to accelerate the business expansion globally

# Initiatives for Strengthening Corporate Governance ②

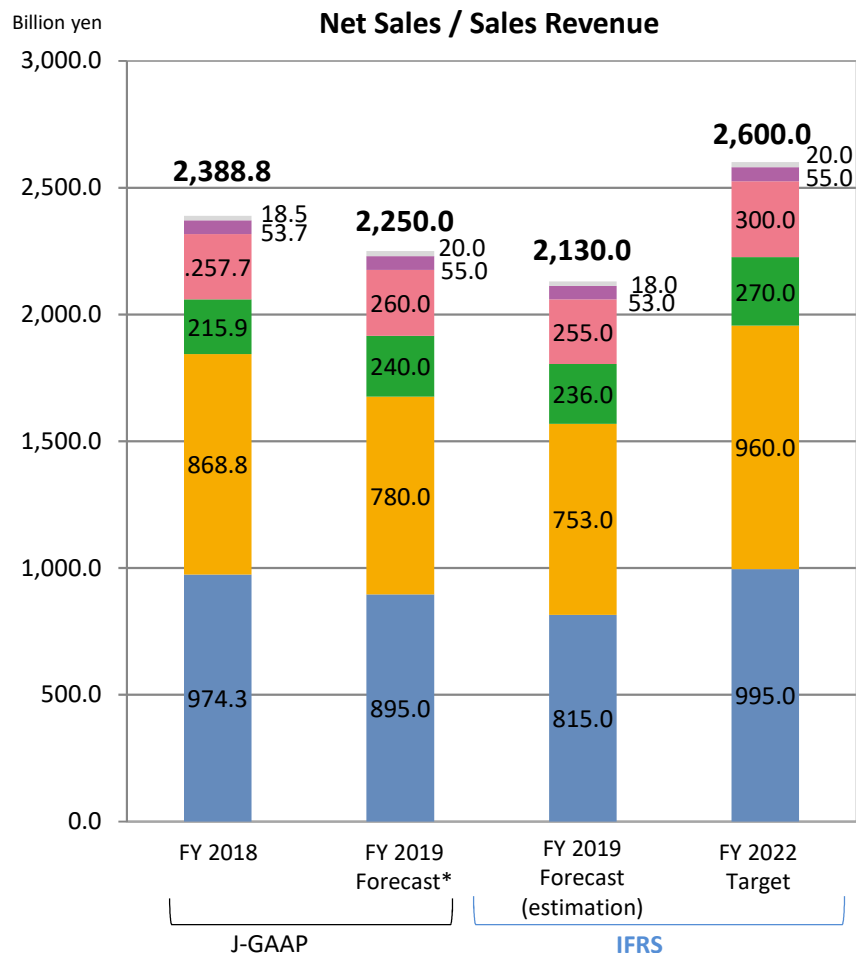
## Corporate Governance Structures



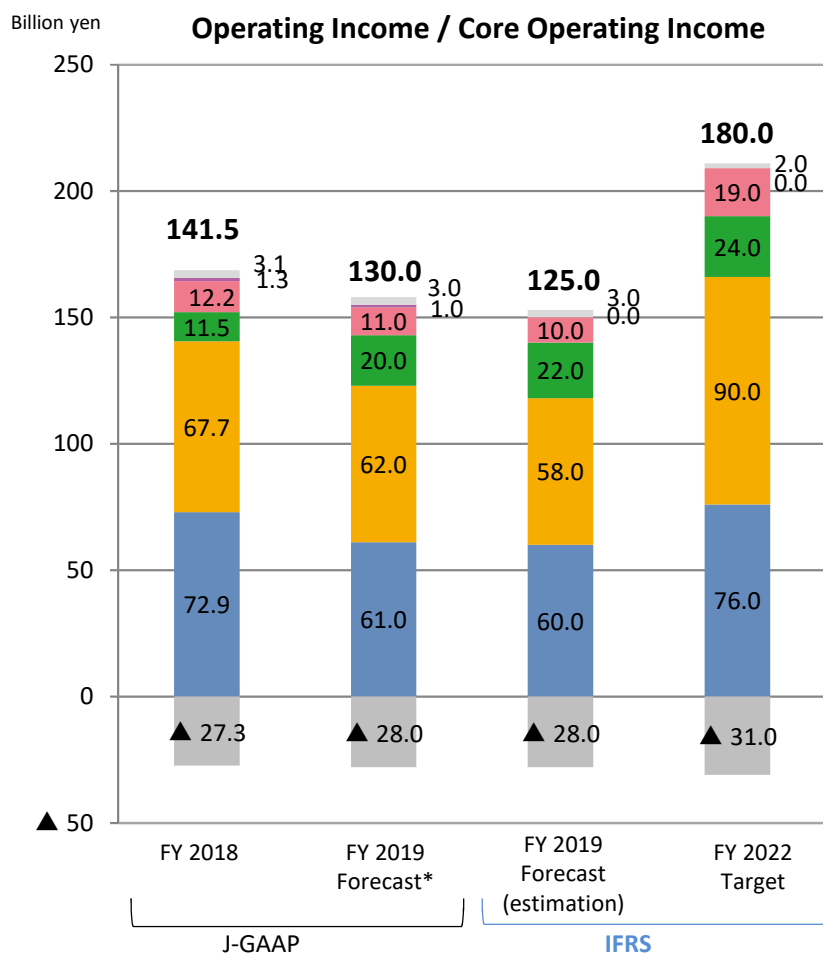
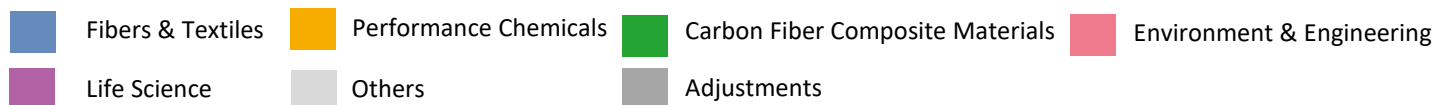
**(Reference)**

**Medium-term Strategies by Segment**

# Net Sales / Sales Revenue, Operating Income / Core Operating Income Targets by Segment



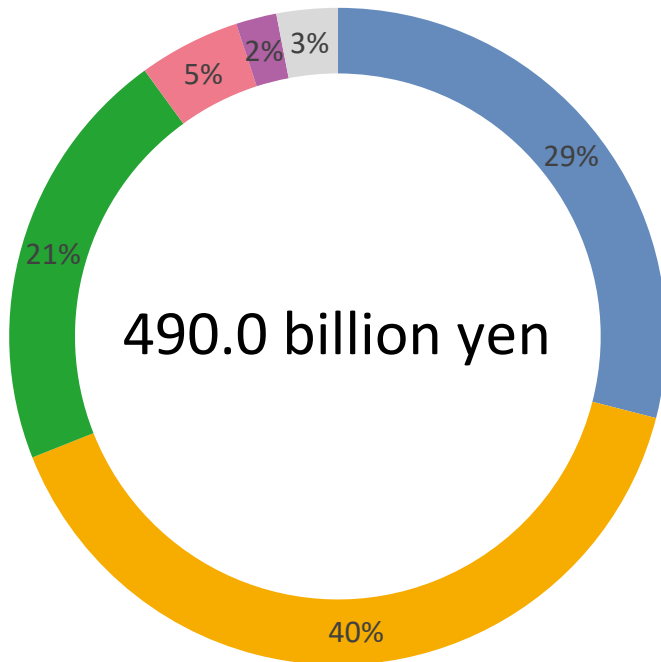
\* Forecast announced on February 10, 2020



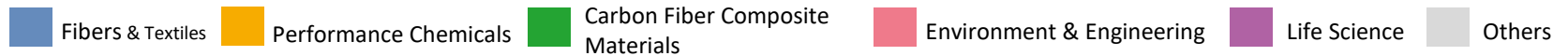
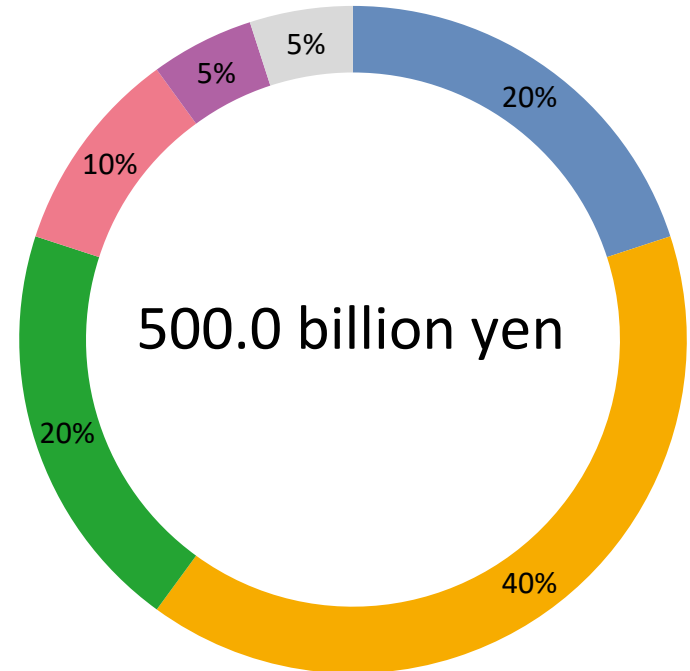
\* Forecast announced on February 10, 2020

# Capital Investment by Segment

Total in “AP-G 2019”  
(FY 2017 - FY 2018 actual, FY 2019 forecast)



Total in “AP-G 2022”





## Basic Policies

**Continuously strengthen business structure and expand in growth regions and growth business fields**

**Enhance profitability by promoting a differentiation strategy and addressing sustainability**

**Global business expansion (expand in growth regions and growth business fields and promote advancement in business models)**

- Expand profitability driven by five businesses of textiles, non-woven fabrics, airbags, non-woven material created using ultra-fine fibers in an “islands in the sea” configuration, and integrated business from fiber to textiles and further to garments

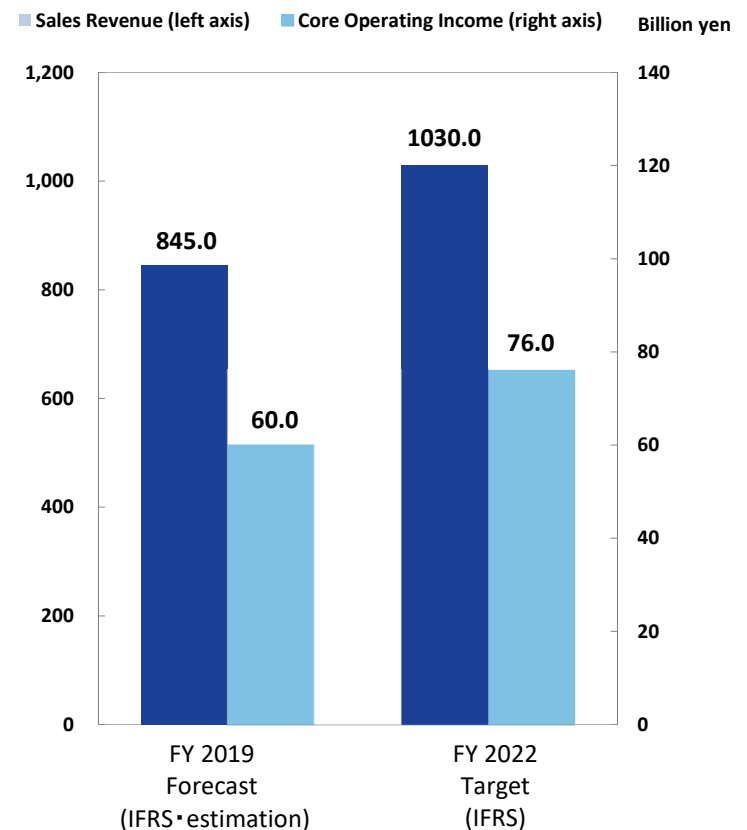
**Business expansion by addressing sustainability**

- Expand materials that address global environmental issues
- Expand materials and products used for medical and healthcare applications

**Promotion of global brand strategies**

**Strengthening business competitiveness, promotion of structural reform and business advancement**

- Promote global re-engineering
- Expand value-added products and enhance the supply chains







## Basic Policies

**Expand sales of high value-added products in growth business fields, boost profitability by creating new products, and address sustainability**

### Resins & Chemicals Business

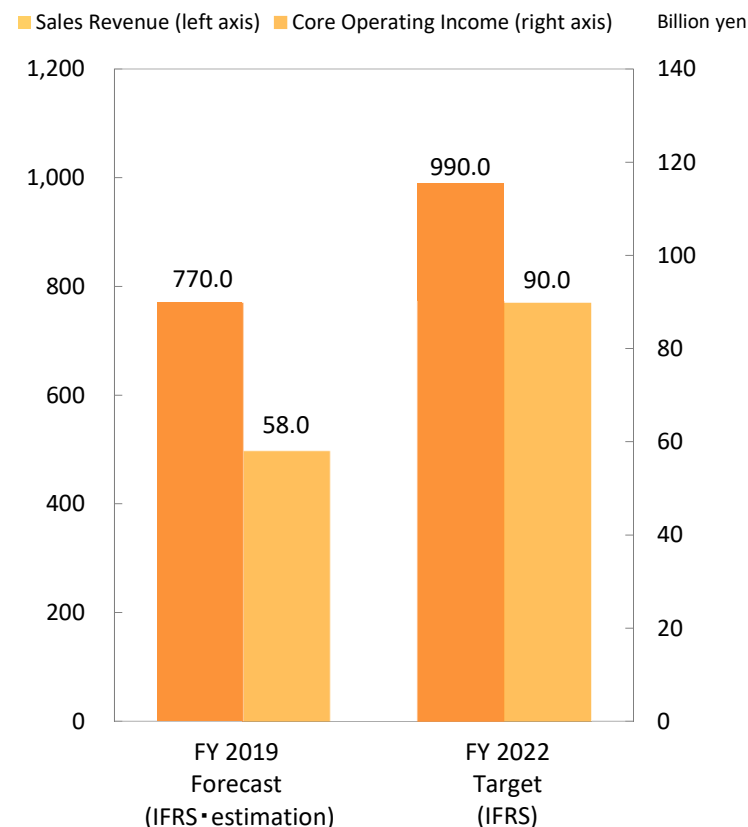
- Expand high value-added businesses in growth areas such as next generation mobility and 5G, etc., and in growth regions including India
- Strengthen upfront development capabilities, and total solution proposal capabilities

### Films Business

- Expand sales of high value-added products in growth business fields including battery separator films, PET films for MLCC release films, and nano-layered films
- Create and expand new products and applications that meet the market changes

### Electronic & Information Materials Business

- Create high value-added electronics materials designed to match 5G and IoT by combining core technologies with the latest information in a prompt and timely manner
- Realize continuous business expansion by providing our customers with solutions through advanced materials





## Sales Revenue Targets by Sub-segment

Billion yen

	FY 2019 Forecast (IFRS ▪ estimation)	FY 2022 Target (IFRS)
Resins, Chemicals	320.0	430.0
Films	320.0	380.0
Electronic & Information Materials	70.0	100.0
Trading	420.0	560.0
Adjustments	▲360.0	▲480.0
<b>Total</b>	<b>770.0</b>	<b>990.0</b>



## Basic Policies

Maintain the position as world's number one by pursuing high-performance and quality reliability of the products

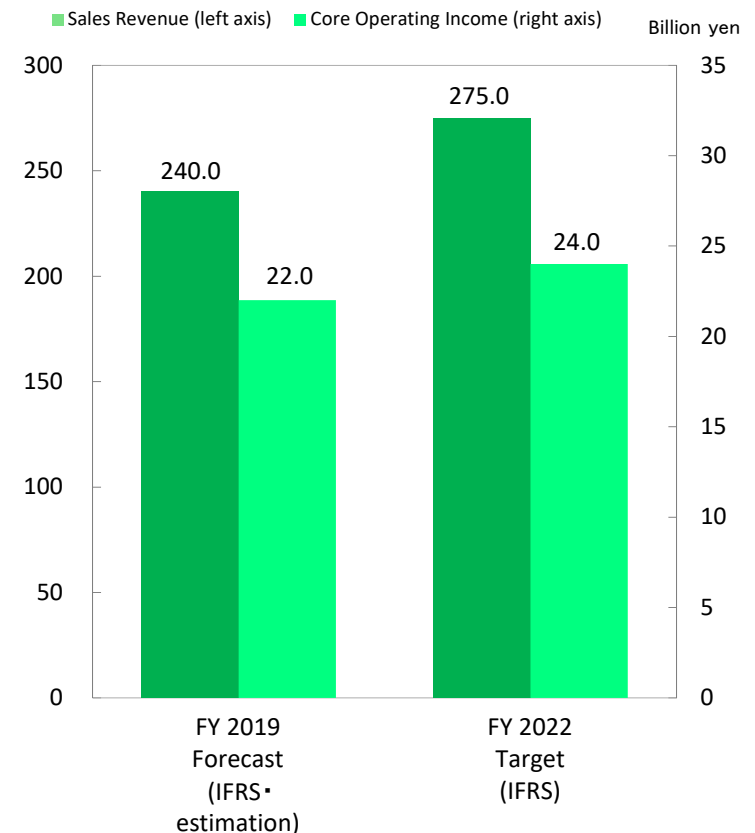
Improve capital efficiency and return on investment by capturing market growth

Thorough recovery of prior investments for growth

Capture growth in new applications in the mobility fields such as UAM (Urban Air Mobility)

Continue investment to capture growth in the expanding energy related fields such as wind turbine blades and fuel cell vehicles (tanks, electrode substrates) applications

Strengthen solution proposal capabilities aimed to become a “best-in-class solution provider”, and implement appropriate price policies





# Environment & Engineering



## Basic Policies

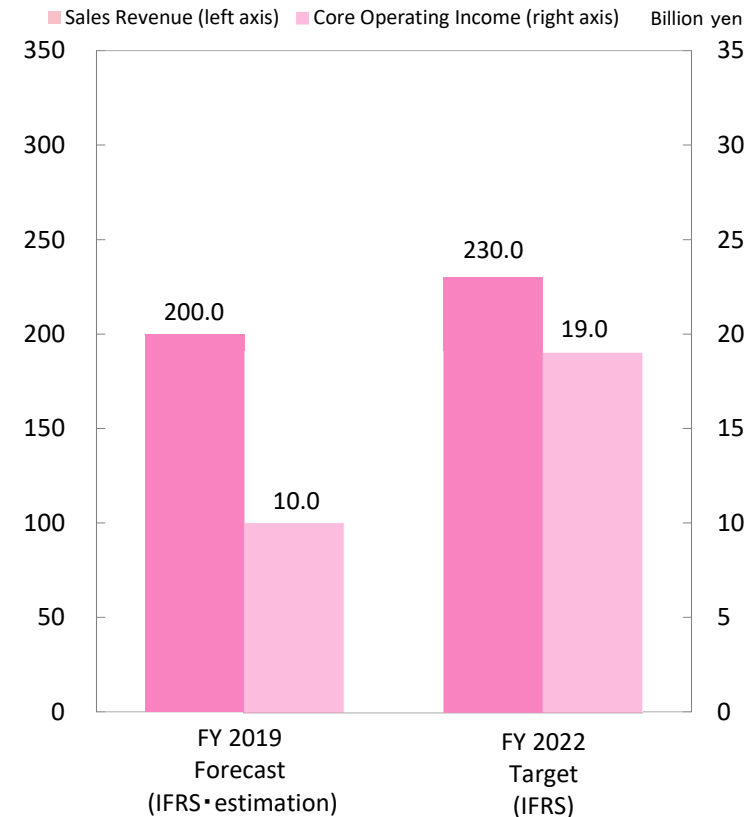
Expand business in the growth business fields centering on water treatment membranes and engineering

### Water Treatment Business

- Enhance global production and sales system in response to markets that are expanding over the medium and long term
- Accelerate new product development and expand sales of products that meet the needs of each region and customers
- Thoroughly strengthen business structure

### Engineering Business

- Expand plant construction business and electronics-related machineries (in the fields of life science and semiconductors)
- Enhance technical capabilities and cost competitiveness by strengthening the Group's unified operations





## Basic Policies

Reinforce the business foundation and structure through overseas business development, expansion of indications and introduction of improved products of existing product lineup, in addition to cost reduction

### Pharmaceutical Business

Maintain the business and profit foundation through overseas business development of oral drug REMITCH®\* as pruritus improver

### Medical Devices Business

- Expand sales by continuously developing and introducing to market improved products of the existing product lineup such as SATAKE HotBalloon™ for ablation treatment
- Expand global sales of highly value-added dialyzers, and launch and promote newly renovated dialysis machines in Japan

### New Business

Establish and launch the business of the test kit to detect protein markers of pancreatic cancer



\*REMITCH® is a registered trademark of Torii Pharmaceutical Co., Ltd.

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**Descriptions of predicted business results, projections and business plans contained in this material are based on assumptions and forecasts regarding the future business environment, made at the present time.**

**The material in this presentation is not a guarantee of the Company's future business performance.**

**'TORAY'**

**Innovation by Chemistry**