FY19-1 Creating New Customer Value through Innovations CEO Explanation



淡輪 敏 Tsutomu Tannowa Mitsui Chemicals Inc. President & CEO



Contents

- Business Performance
- Topics on Targeted Business Domains
- ► Topics on Sustainability
- Financial Overview
- Management Target for Sustainable Growth

FY18 Results and **FY19** Outlook



FY18 - Operating incomes driven down by Osaka Works fire etc. (△5 bn yen) and inventory valuation losses FY19 - Record high profit expected

(JPY bn)					△Denotes a minus
Items	FY2016	FY2017	FY2018	FY2019	Increase (Decrease)
	Results	Results	Results	Outlook	FY18→FY19
Sales	1,212	1,329	1,483	1,540 Rec	57.1 ord high
Operating income	102.1	103.5	93.4	105.0	11.6
Non-operating income	△ 4.9	6.7	9.6	5.0	△ 4.6
Ordinary income	97.2	110.2	103.0	110.0	7.0
Extraordinary gains/losses	△ 11.4	△ 16.0	2.3 Record high	△ 5.0	△ 7.3
Net income*	64.8	71.6	76.1	76.0	△ 0.1
Exchange rate (JPY/USD) Domestic standard naphtha price (JPY/KL)	108 34,700	111 41,900	111 49,400	110 46,000	△ 1 △ 3,400

^{*}Net income refers to Profit attributable to owners of parent

Operating Income Outlook by Segment



(JPY bn) △Denotes a minus

Segment	FY2016	FY2017	FY2018	FY2019	Increase (Decrease)
	Results	Results	Results	Outlook	FY18→FY19
Mobility	40.7	42.3	42.7	44.5	1.8
Health Care	10.1	10.8	13.6	15.5	1.9
Food&Packaging	20.6	19.9	17.8	20.5	2.7
3 Targeted Domains Subtotal	71.4	73.0	74.1	80.5	6.4
Basic Materials	38.5	38.9	27.8	33.0	5.2
Others	△7.8	△8.4	△8.5	△8.5	0.0
Total	102.1	103.5	93.4	105.0	11.6
Exchange rate (JPY/USD)	108	111	111	110	
Domestic standard naphtha price (JPY/KL)	34,700	41,900	49,400	46,000	△ 3400

- **✓ Continue to grow in 3 Targeted Business Domains**
- ✓ Secure stable profit from Basic Materials domain despite Osaka Works fire etc. (\triangle 5 bn yen) and inventory valuation losses

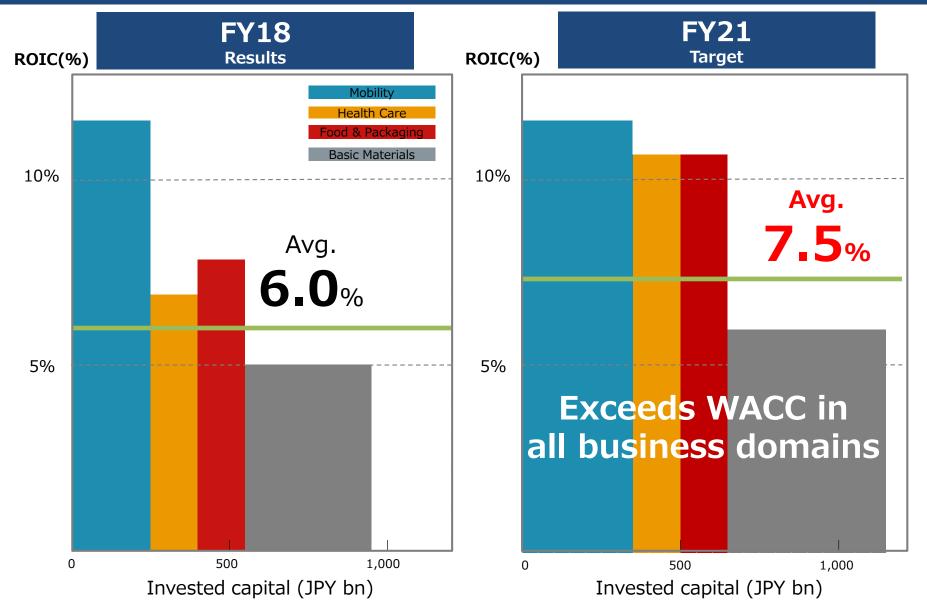


(JPY bn)	FY15 Results	FY18 Results	FY19 Outlook	FY21 Target	vision 2025
Sales	1,344	1,483	1,540	1,670	2,000
Operating income (ROS)	70.9 (5.3%)	93.4 (6.3%)	105 (6.8%)	140 (8.4%)	200 (10%)
Net income	23.0	76.1	76.0	100.0	
ROE	5.8%	14.3%	13.1%	\rightarrow	10% or more
ROIC*	4.9%	6.0%	6.4%	7.5%	8% or more
Net D/E	1.03	0.68	0.65	\rightarrow	0.8 or less
Total return ratio	34.9%	39.0%	30% or more	\rightarrow	30% or more

^{*}ROIC : Return on Invested Capital = NOPAT/Invested capital



Focusing investments in high-ROIC targeted domains



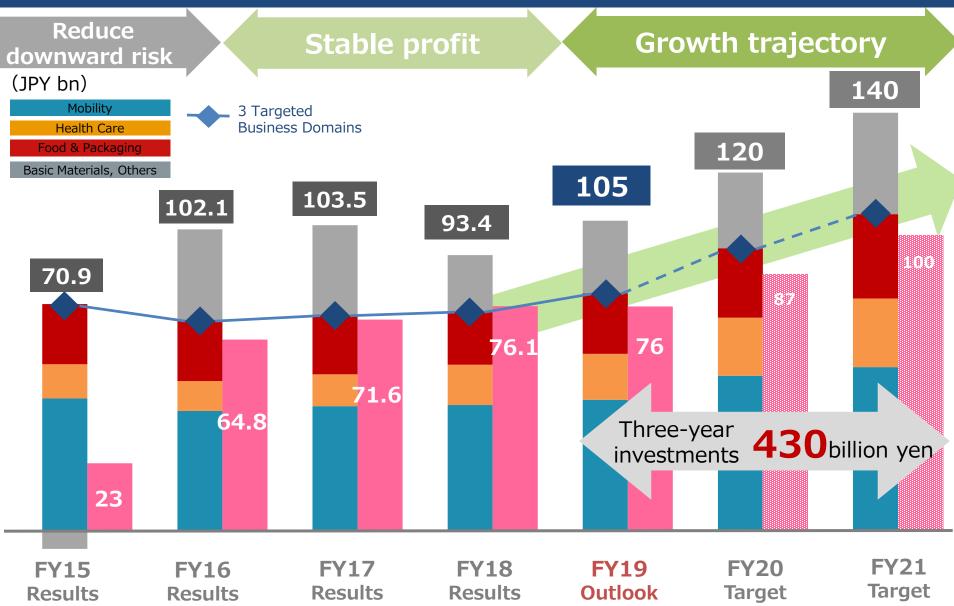
Mid-Term Management Target













Business Strategy

1 Expansion in 3 targeted business domains

- Increase in investment themes
- Including peripheral business area
- Secure production capacity corresponding to demands
- ②Accelerate development of new next generation businesses and create new products
- **3 Further strengthen competitiveness of Basic Materials**

Manufacturing

- **4** Enhance manufacturing bases by utilizing advanced IoT/AI technologies
- **⑤**Ensure safety and enhance safety culture globally

Management

- **6**Secure investment returns and improve inventory control
- **7** Enhance group-global management
- **®Promote ESG management**



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Mobility

Elastomers, Performance polymers, Performance compounds, Engineering plastics

01 3 Targeted Business Domains









Health Care

Ophthalmic lens material, Nonwovens, Dental materials, Personal care materials 02 3 Targeted Business Domains







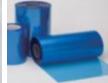


Food & Packaging

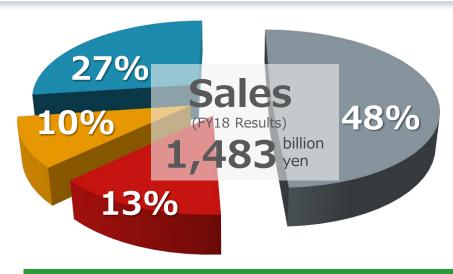
Packaging material, Coatings Agrochemicals, Seeds 3 Targeted Business Domains











Next Generation

Energy, Medical, Agri-system, and IoT Solution

Creation & Development









Basic Materials

Phenol, PTA/PET
Polyolefin, Polyurethane, and others









Mobility

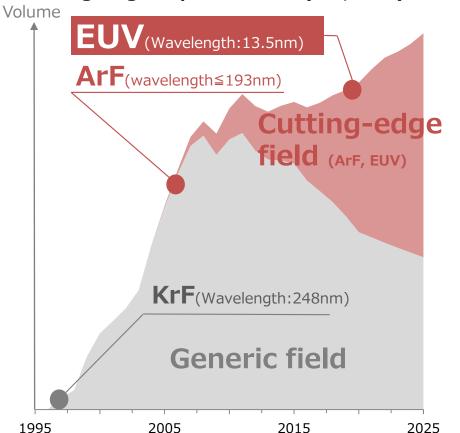
comprehensive strengths Provide solutions making full use of

Mitsui Pellicle™ Dust Cover for Semiconductor Photomask



- -Strengthen next-gen pellicle business that meets semiconductor refinement needs -Exclusive license for EUV pellicle acquired from ASML*
 - *ASML: Dutch-based, global leading manufacturer of semiconductor exposure machine

Demand growth in cutting-edge exposure field (ArF, EUV)

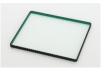


Fifth-gen mobile communication system

Ultrahigh speed Ultra low latency

Multiple Simultaneous connections

Needs for refinement of semiconductor circuits



Next-gen pellicles that withstand ultra high-energy EUV exposure

*EUV: Extreme Ultraviolet

Establish EUV pellicle facilities at Iwakuni-Ohtake Works

(Completion: Jun. 2020)

No.1 pellicle supplier in cutting-edge fields (ArF, EUV)

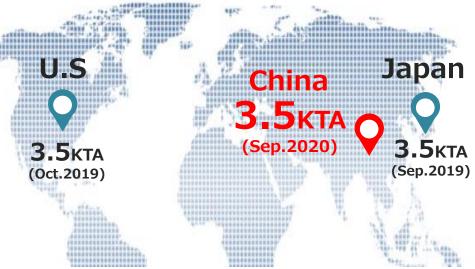


Strengthen Production Capacity

Local Production for Local Consumption -



Long glass fiber reinforced PP Establish global structure



PP Compounds in Thailand Increase capacity



Background

-Growing needs for light-weight solution

Application

-Metal substitution

- -Total production capacity: 10.5 KTA
- -Meet global lightweight needs

Background

- -Growing needs for light-weight solution
- -Capture growing demand in Asia

Application

-Automotive inner/outer parts

Continue production increases at 8 global bases



Global Deployment of PP Compounds



Shift to resin parts leading to continued growth despite automotive production growth slowing down

America 440KTA

Europe

Asia 630_{KTA}



Netherlands

(Including outsourced production capacity)

India +12кта Oct.2020) **India**





New base in Netherlands **30**KTA

Jun.2020

Thailand

Production Capacity (FY20)

1,120KTA







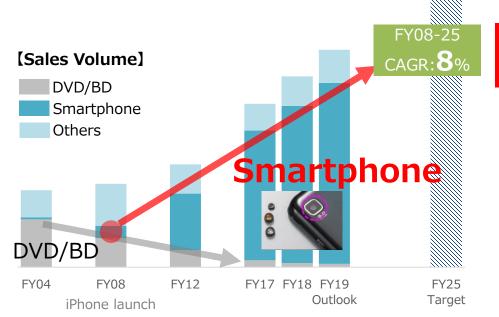


Expanding Applications



APEL™ Reforming application portfolio

- ✓ Expand business in smartphone camera lens use
- ✓ Continue high growth amid trend toward double-camera, triple-camera smartphones



New products under development



Automotive camera lenses



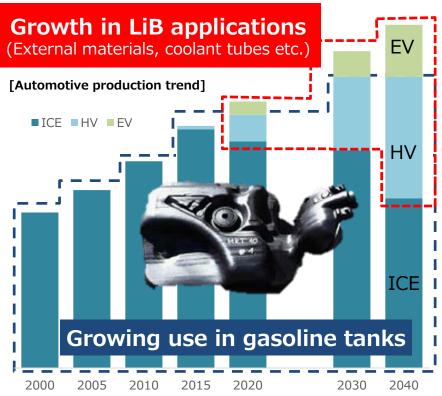
New devices



Medical applications

ADMER™ Expanding applications

- ✓ Growth due to gasoline tanks trending toward resins (adhesiveness, durability)
- ✓ Accelerating growth in LiB applications



Launching new products adherable to more materials

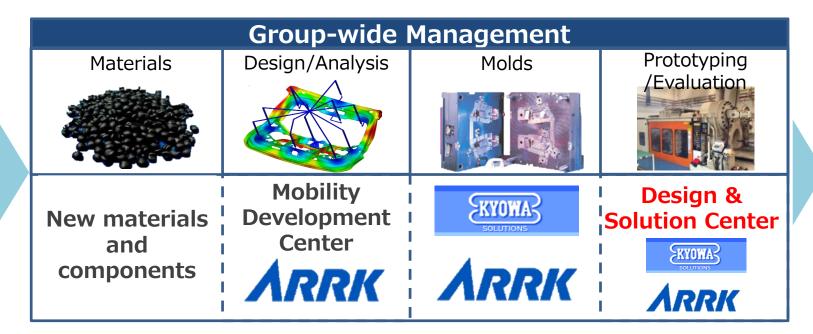
(Modified fluoropolymers, PPS, POK, PC, fiber-fillers etc.)





parts

- Strengthen capabilities for creation and development
- Opened "Design & Solution Center" (Mar. 2019, Niigata)





- ✓ Group synergies for creation and development
- ✓ Speed up development in Mobility, Health Care and Food & Packaging domains
 - **→**Enhance capability to propose total solutions





Winding tube

Carbon fiber composite material - commercializing UD tapes

TAFNEXTM Carbon fiber reinforced UD tape





UD tape

Proposing applications in rear doors (Insert molding)

New facility

-Installed UD tape production facilities (Nagoya, Oct. 2017)

Marketing

- -Expand matrix resins line-up
- -In combination with CAE and production tech

Offer lightweighting solutions

Installation of laser equipment for UD tape production



New facility

-Installed AFPT's laser equipment (Design & Solution Center, March 2019)

by laser

High-speed layer fusion

Partial heat sealing

Marketing

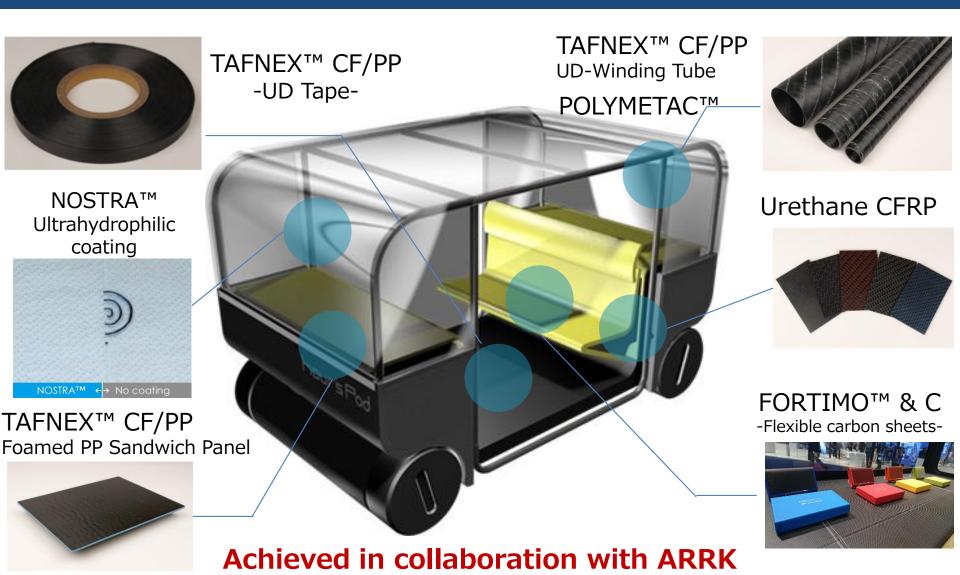
- -Pursuing market development by combining processing technologies with UD tape
- -Evaluations moving forward (oil field excavation pipes, auto parts etc.)

UD tape business to launch in FY2019 utilizing materials, CAE and processing technologies





Showcasing TAFNEX™ - "hour's Pod™" concept car exhibit at JEC World convention in France (Mar. 2019)





Mobility Project Schedule



Expand scope of investments in high-ROIC Mobility domain → accelerate growth

Mobility investment projects (partial list)		Capacity	Schedule for profit contribution					tion		
		(KTA)	Stable growth		Accelerate growth		rowth	Note		
		(14174)	FY17	FY18	FY19	FY20	FY21	FY22		
PP Compounds	Increased capacity@India	10								
	Increased capacity@N.A	20							√Global top strategy in 8 global bases	
	Increased capacity@Mexico	10							✓Increase in automobile production ✓PP usage continues to increase along with	
	Increase capacity@India	12							lightweight needs	
	Increase capacity@Thailand	13								
	New base@Netherland	30								
Long glass fiber	Increase capacity@Japan	3.5							✓Establish 3-base global network ✓Expand resin parts	
Long glass fiber reinforced PP	New base@N.A	3.5								
Telillorced FT	New base@China	3.5							V ZAPANA 165M PARES	
Milastomer™	Increased capacity@Japan	5							✓Global expansion via 7-base global network ✓Enhance solution capability for inner parts	
	Acquired TPS business	-								
	Increase capacity@N.A	6							, , , , , , , , , , , , , , , , , , , ,	
	Electolyte: Increased capacity@Japan	5							✓Adopted major LiB manufacturer in Japan and China utilizing original additive technology ✓Secure global standard position in LiB separator	
LiB related materials	Electolyte: Increased capacity@China	5								
	HZ million: Increased capacity@Japan	1							material	
Elastomers	Tafmer™: Increase capacity@Singapore	25							✓Secure global top share	
Semiconductor materials	EUV pellicle: New facility@Japan	-							√Be a No.1 in cutting-edge area	
Lubricant oil materials	Lucant™: New base@Japan	20							✓Expansion with Lubrizol	
	Acquired ARRK	-							(Official calculation and the	
Solution	Mobility Development Center	-	-			✓Offer total solution globally ✓Promote trend toward resin				
	Design & Solution Center	-								



Health Care

Provide products & services contributing to Quality of Life through chemical innovations



Bolster global No. 1 position with full range of refractive index and functional lens materials

Ophthalmic lens materials 45%

Global market share

45%

Market growth rate



3 priority regions





U.S

Growing need for high-refractive index lenses Launched special website in each language https://www.mitsuichem.com/en/special/mr/



Need for good balance of optical properties along with strength



Need for thinner and lighter lenses



Ongoing shift from glass to plastic lenses

Functional lens materials



UV+420cut™

√Cuts out harmful UV rays and high-energy visible (HEV) light

✓Adopted by major European retailers for main products



NeoContrast™

- ✓ Reduces glare; helps distinguish between different colors
- ✓Adopted by major Chinese retailers as anti-glare lenses



- Expanding sales by delivering high consumer value
- Capacity increase under feasibility study



Health Care Topics



E-focus glasses TouchFocus™ achieves high sales



Broad lineup

4 series, **61** varieties

•

Launched Customizable temples, colored lenses

Preparing Slim-frame option for women (FY2019)

Preparing Photochromic lenses (FY2019)

Preparing +1.0 type with electricity (FY2019)

More stores

As of May 31,2019 Stores in Japan

Japan Steady progress toward 100-store target (FY2019)

Overseas Plans to begin sales in China by end of FY2019

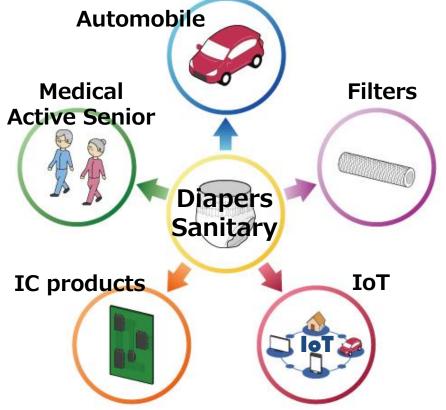
Sales targets

FY2022 50 thousand units/year

Establish sales methods in Japan; pursue rollouts across Asia and the West

Bolster development of nonwovens for industry use

- ✓ Launched new organization for industrial applications development (Apr. 2019)
- ✓ Rolling out industrial applications using sanitary material technologies



Stronger nonwovens business portfolio

[Mitsui Fine Chemicals] Accelerate Development of New Products



Polyolefin surface modifier Exfola[™]



Adds new functions to polyolefins

Releasa -bility

Water repellency
Oil repellency

Slida -bility

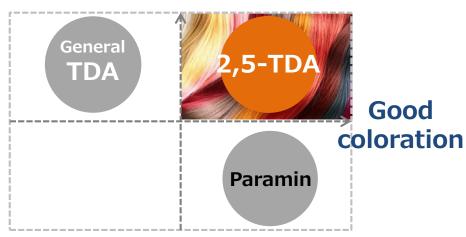
Antifouling

Expand applications

- ✓Package for reduced food losses
- ✓ Protective films for LCD, building materials
- ✓Antifouling films

Low skin irritation Hair coloring material

Low skin irritation



- ✓Developed hair coloring material with both low skin irritation and good coloration by using original technology
- ✓Applicable to variety of colors
- ✓Successfully developed technology for stabilization in storage

Start global deployment building on success in Japanese market



Food &

Packaging

Provide solutions for world food problems, seizing new business opportunities







New

active

ingredients

Active ingredient

Target market

Progress

② 日本農薬学会第44回大会 総会·授賞式

Tolprocarb

Fungicide

for wetland rice

Domestic market

40 billion yen

- ✓ Domestic sales launched in FY2015
- ✓ Positive feedback for new efficacy, receiving award from the Pesticide Science Society of Japan
- √ Expanded to 15 formulations

CY Gene Cyclop

CYRA™
Generic name:
Cyclopyrimorate

Herbicide

for wetland rice

Domestic market

70 billion yen

- ✓ Has new efficacy for weeds resistant to ALS inhibitors
- ✓ Completed registration
- √ Co-developed with ZEN-NOH

TENEBENAL[™]

Generic name: **Broflanilide**

Insecticide

Global market

1,600 billion yen

- ✓ Long-term commercialization contract with BASF
- ✓ Registered new category with IRAC*
- ✓ Completed registration in eight Countries (inc. Japan, U.S., India, South Korea, ASEAN)

*Insecticide Resistance Action Committee

Steady progress with new product development





Eco-friendly Packaging Materials



Mono-material X Barrier Water-based PU coating with gas barrier TAKELAC™ WPB

Paper recyclability, laminate replacement Water-based heat-seal coating CHEMIPEARL™

Issue

Difficult to recycle high-performance packaging made of multi-material layers

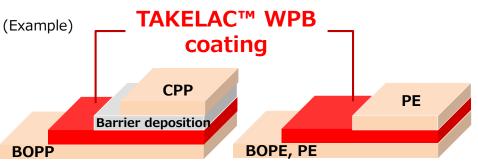
*Coating and deposition are recyclable materials)

PE/PP

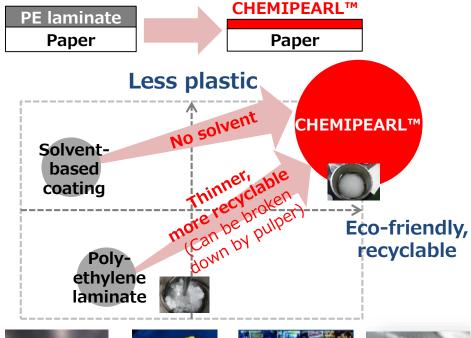
Ny/PET

Mono-material trends in Europe/India giving rise to new needs

Realize mono-material packaging with gas barrier properties using TAKELAC™ WPB



Enables water-based layer with thinness and heat sealing properties











Offer valuable solutions to customers and brand owners Sales growing in India and Europe as environmental regulations tighten



Business **Next Generation**

Create solution & system businesses at the boundary or peripheral areas





EnergySolution



Power generation and diagnosis business of photovoltaic plant

✓ Diagnosis accounts over 3.1GW

✓ Enter certification business in India (Oct. 2019)

Medical

Solution



Rapid diagnosis system for bacterial identification

✓ Provide re-agent for research

- ∨ Overseas deployment (Singapore, EU)
- √ Selected for AMED's ACT-M scheme

Agri Solution



Advanced cultivation system (iCAST™)

✓ Good field test results and good evaluation at large-scale farmers in US and Australia

IOTSolution



Piezo-electric material for next generation display sensor

- ∨ Collaborate with MURATA for Piezo-electric film
- ✓ Application development for Piezola™
- ∨ Customer evaluation on transparent-PI for OLED

Corporate Venturing



Open innovation & CVC

✓ Joint development of new models for surgical practice

*Japanese Cabinet Office's ImPACT program JST Nagoya University University of Tokyo



Joint development* of new models for surgical practice

Eyeball model for practicing glaucoma surgery
Layered structure with human collagen fibers



Social issue

- ✓ Glaucoma: #1 cause for loss of eyesight in Japan 200,000 glaucoma surgeries per year in Japan
- ✓ No detailed models for surgical practice previously
- √ Bionic-EyE™ will improve surgeon skills

Technology

✓ Material combination technologies



"Feels like a human eye"
"Can use it for multiple surgery practices"

Nasal cavity/skull base model with Piezola™ Visualize surgical training



Social issue

√ High skill necessary for endoscopic endonasal skull base surgery - touching the optical nerve risks loss of eyesight

Technology

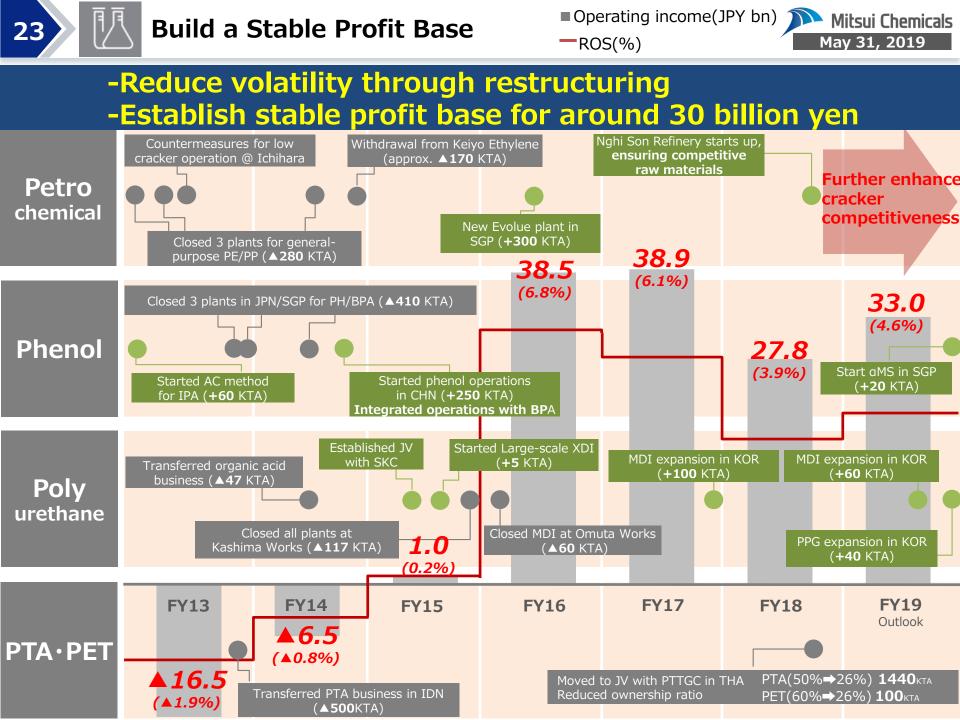
✓ Piezoelectric line PIEZOLA™
used in equipment to monitor contact and
provide feedback, helping improve surgical skills



asic Materials

the basis of society and industry Provide materials for





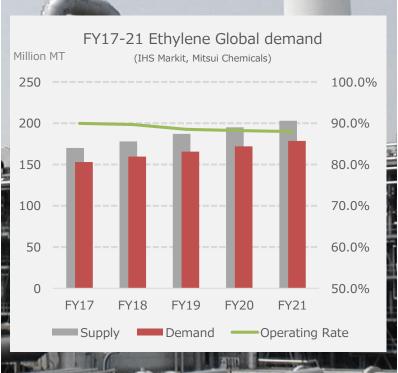
Reduce Volatility

Bolster presence in Asia market and build stable profit base









Resistance to market fluctuation

Phenol, Polyurethane, PTA

Local production for local consumption

80%

√Restructure and establish sales strategies tailored to each region

Polyolefin, Phenol, Polyurethane, PTA

Formula-based pricing

70%

✓Establish sales strategies that are more resilient to market fluctuations

Preparing for impact of shale products

In-house ethylene consumption

80%

✓Export ratio is 10% or less

High value-added ethylene-based polymers

90%

✓Closed general-use PE plants

✓Expand high value-added polymers such as Evolue[™] and Elastomers

Reduce volatility and establish stronger profit base



Further Strengthen Cracker Competitiveness



Energy efficiency New gas turbine facilities (30 MW, Osaka)

- ✓ Cut costs by improving proportion of private power generation and recycling waste heat
- ✓ Reduce CO₂ emissions by 70,000 tons/year

Removing bottlenecks

Expand cracking furnace (Ichihara)

- ✓ Cut costs by improving olefin yield
- ✓ Improve stability and facilitate maintenance of cracker facilities

FY18 FY19

FY20

FY21

FY2

FY23

Expand sales of olefin-based polymers; New plants; Improve on C3 shortage positon

For derivatives

Increase capacity for high-purity propylene (Ichihara)

- ✓ Boost propylene purification capacity for polymers
- ✓ Prepare for bolstering propylene-based polymers
- √ Address propylene shortage position

Diversifying raw materials

Increase propane cracking capacity (Osaka)

- √ Shale-derived propane cracking
- ✓ Diversify raw materials at Osaka (23% → 40% of total raw materials)

Maintain world-leading naphtha cracker by further boosting cost competitiveness

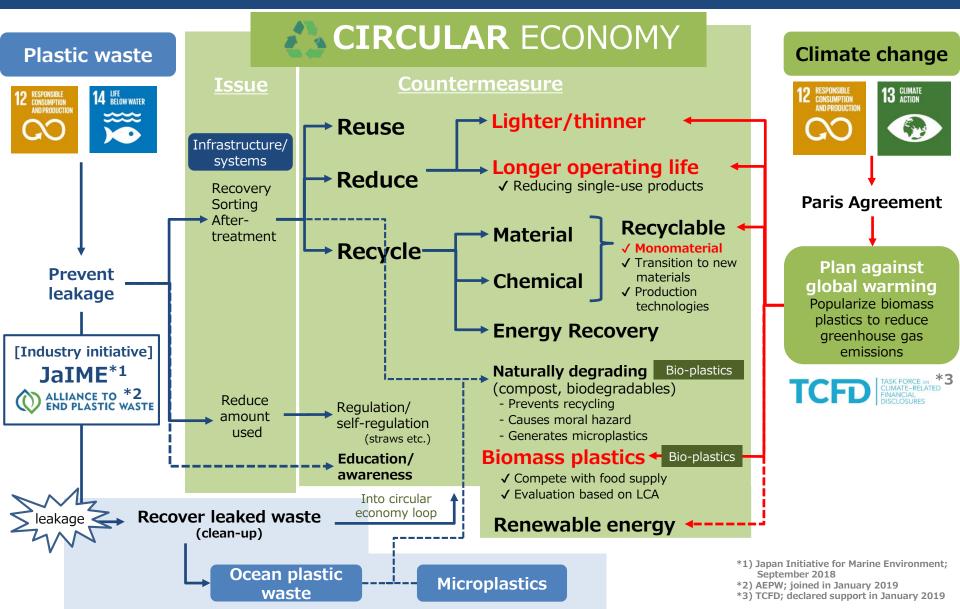


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Tackling climate change and plastic waste to achieve circular economy





Pursuing circular economy model throughout value chain

Biomass strategy

Expand biomass plastics

Climate-friendly Resource circulation

✓Bio-Polyol (Econykol™)
✓Plant cell culture

Biomass plastics help cut CO₂ emissions

- √Bio-polypropylene
- **√Bio-Polyurethane (STABiO™)**
- √Bio-based lens monomer (DoGreen™)

Raw materials

Biomass

Fossil resources

Chemical materials



Plastics Reduce



Plastic Products
Lighter, thinner



Recycling strategy

Chemical Recycle

Developing recycling tech

✓liquefaction process for automotive waste plastics

Material Recycle

Pursuing Recyclability

√Mono-material

√Compatibility (Polyolefin tech)

Energy Recovery Recycle

Linear to Circular economy More recyclable products

Collaboration & Open innovation

Reuse

Recovery

nsumption



- -Dealing with climate change is our top priority
- -Pursue cooperation and co-creation throughout global value chain

Mitigation

Realizing low-carbon society by reducing GHG emissions

Adaptation

Realizing healthy and happy society resilient to climate change risks

Opportunities / Risks

Lower carbon emissions in manufacturing

- -Energy conservation, renewable energy
- -Transitioning to new raw materials/fuels

Reducing GHG via products

-Blue Value™ products

Improving recycling technologies

-Innovation with raw materials and design

Opportunities / Risks

Managing water security

- -Dealing with production base risks
- -More efficient use of water resources

Expanding products enabling adaptation

- -Rose Value™ products
- -Products for preventing and mitigating disasters



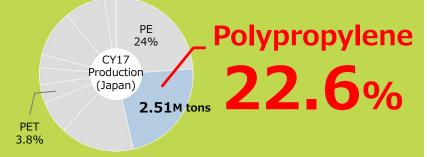
Supporter of TCFD Recommendations (announced Jan. 2019)

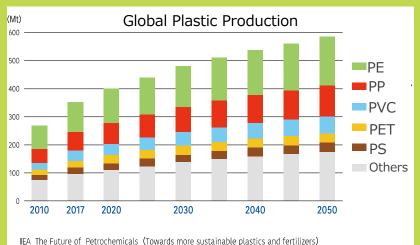
Development of Bio-Based Polypropylene (Bio-PP)



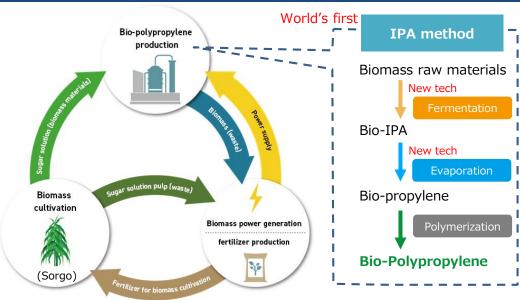
Targeting commercialization of Bio-PP as Japan's leading supplier

- ✓ PP: 23% of all plastic production in Japan
- ✓ Wide-ranging applications: auto parts, consumer electronics, medical, housing and food packaging
- ✓ Growing global demand





Bio-PP yet to be commercialized



CO₂ emissions

Per ton of propylene 4.2 tons

Process

World's **IPA** method

Commercialization

2024

Target output

100KTA

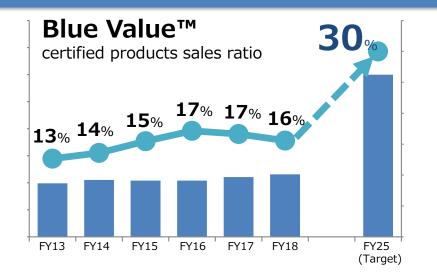
Submitted open-call proposal for MOE* consignment project *Ministry of Environment

Target

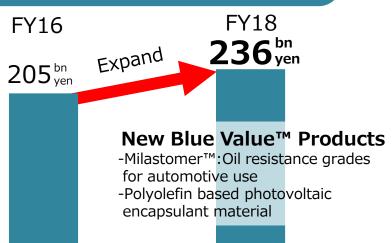
In 2030



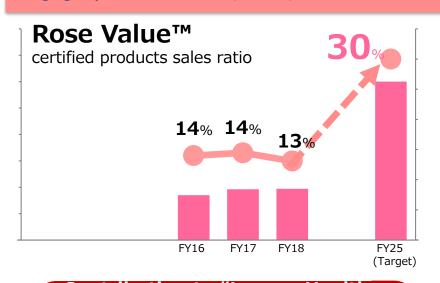




Contributing to "Reduce CO₂"



Rose Value™ Declining Birth Rate Longer Healthy Food Problem

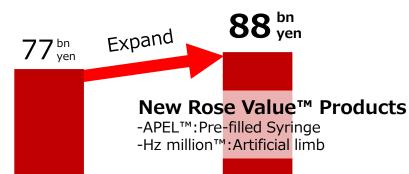


Life Expectancy

& Aging Population

Contributing to "Longer Healthy Life Expectancy"

FY16 FY18





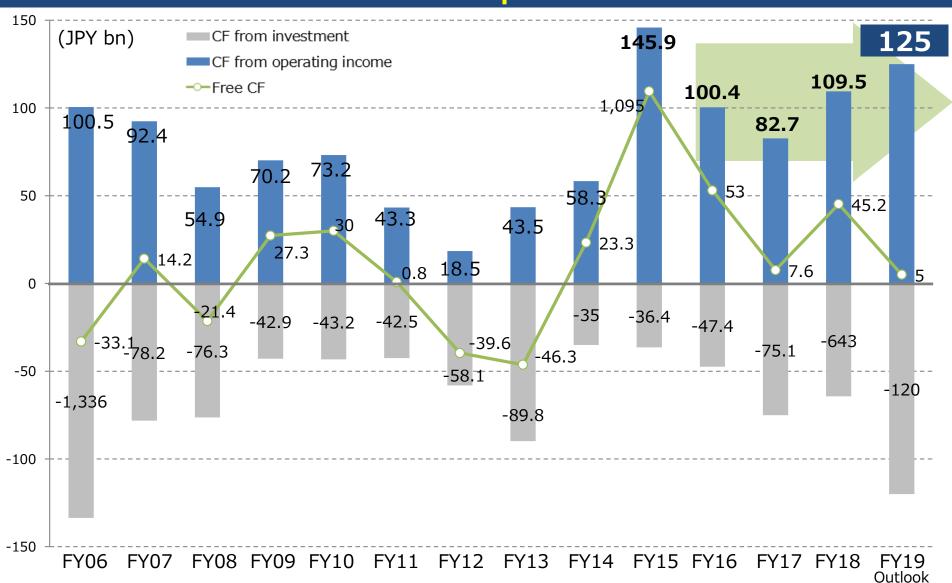
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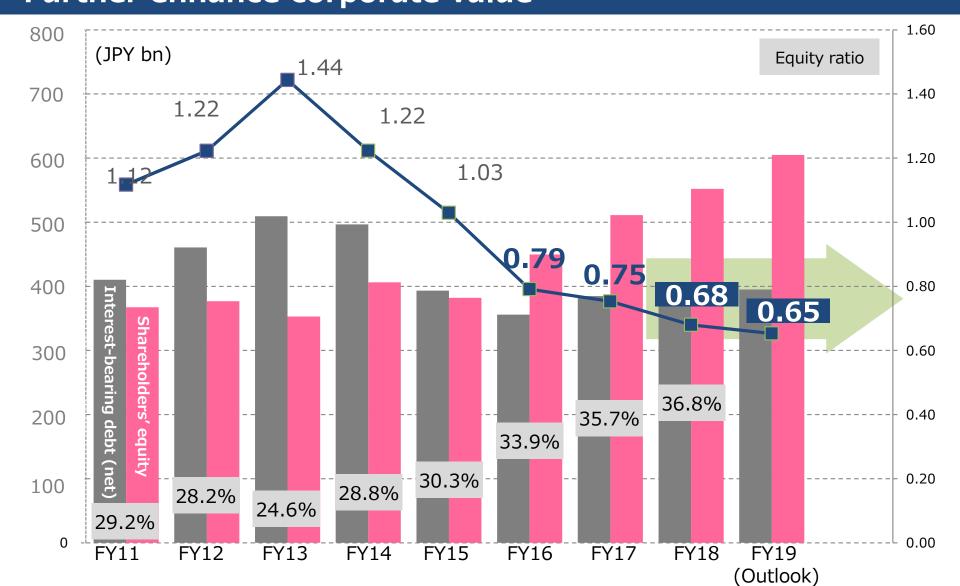
-Cash flow from operating income remains high

-Maintain active investment phase





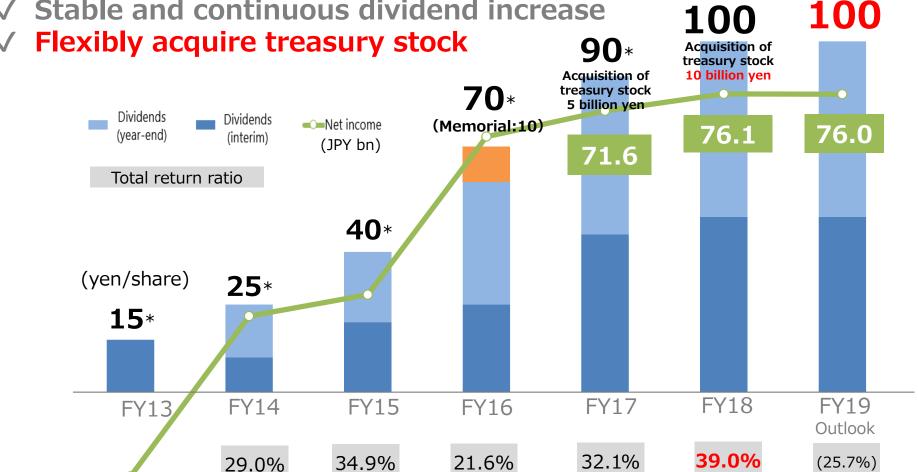
-Improve Net D/E of 0.65 and continue active investments -Further enhance corporate value



Shareholder Returns



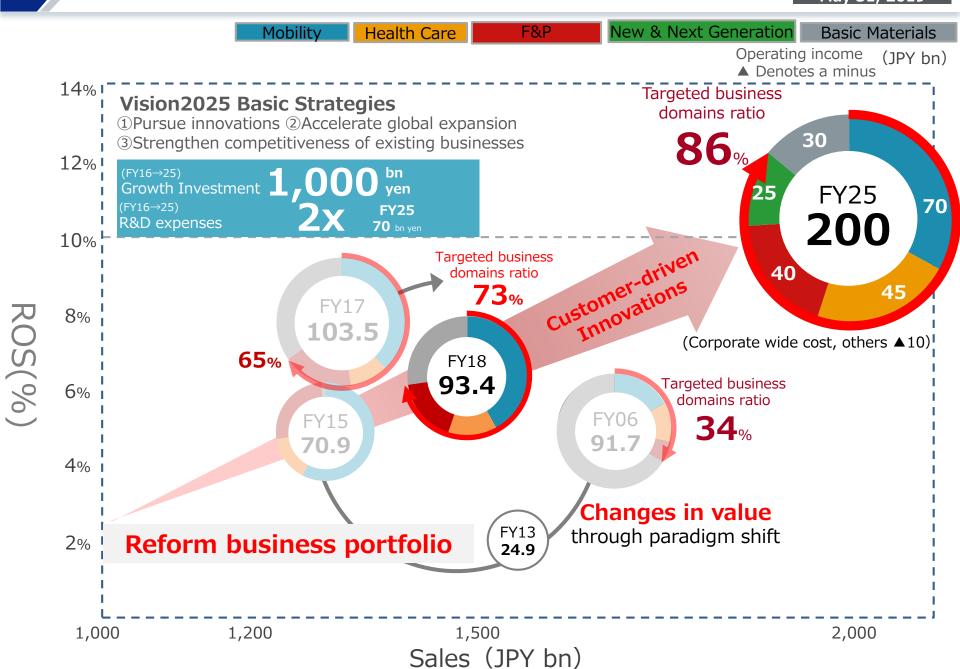
- -Increasing returns to shareholders
- -Acquired treasury stock of 10 billion yen in FY18
- Target total return ratio: 30% or more
- Stable and continuous dividend increase



*In October 2017, Mitsui Chemicals conducted a 5-to-1 share consolidation. All dividends are re-calculated based on the share consolidation.

Targeted Position

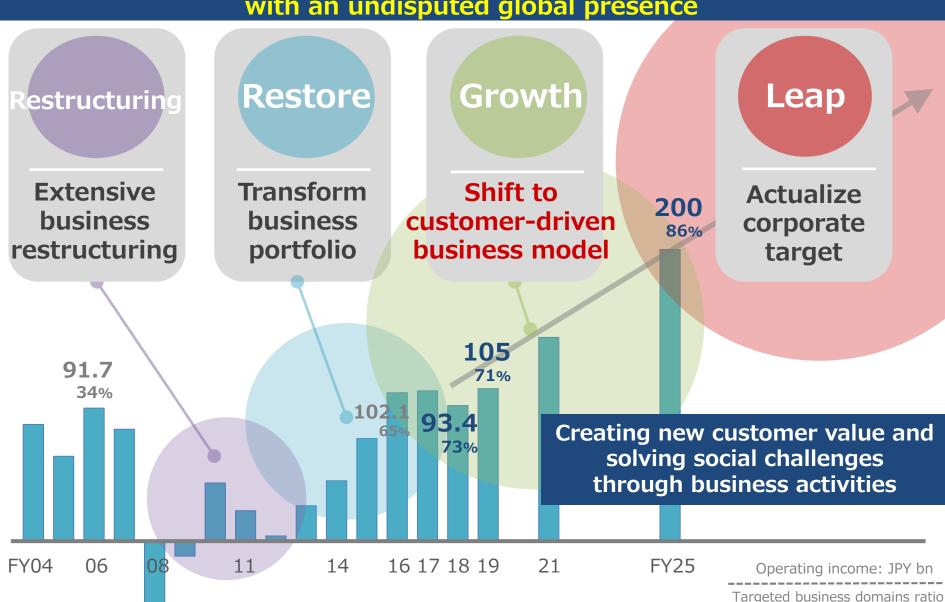




Sustainable Growth



Constantly pursuing innovation and growth to become a chemical group with an undisputed global presence



Creating new customer value and solving social challenges through business activities

0→1 MAKE IT HAPPEN



Challenge Diversity One Team

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