

**Progress of
the AGC Group
Mid-term Management Plan
*“AGC plus-2020”***



AGC Inc.

February 5, 2020

Your Dreams, Our Challenge

- 1. Progress of *AGC plus-2020***
- 2. Measures for core business**
- 3. Progress of strategic business**

1. Progress of *AGC plus-2020*

"Vision 2025"

The AGC Group's Core Businesses will serve as solid sources of earnings, and Strategic Businesses will become growth drivers and lead further earnings growth. The AGC Group will continue being a highly profitable, leading global material and solution provider.

Core businesses

Establishing long-term, stable sources of earnings through the portfolio management

- Architectural glass
- Automotive glass (existing)
- Essential chemicals
- Performance chemicals
- Display glass
- Ceramics

Strategic businesses

Establishing highly profitable businesses through expansion of high value-added businesses

- Mobility
- Electronics
- Life science

AGC plus-2020 serves as the cornerstone toward 2025

- Develop high-value added businesses that do not get affected by market fluctuations
- Promote growth strategies for strategic businesses
- Concentrate management resources in growth regions/where we can win
- Achieve sustainable growth through strategic M&As

Achievement towards management target

- OP of strategic business expanding successfully
- Active investments with maintaining healthy D/E ratio

Long-term plan

Mid-term management plan *AGC plus-2020*

	FY2017	FY2018	FY2020 forecast	FY2020 target	FY2025 target
OP	119.6 billion yen	120.6 billion yen	120.0 billion yen	160.0 billion yen or more	229.2 billion yen or more (record high)
ROE	6.1%	7.7%	6.0%	8.0% or more	10.0% or more
Strategic business contribution ratio	10%	17%	29%	25% or more	40% or more
D/E	0.38	0.43	0.5 or less	0.5 or less	0.5 or less

- Decrease in profit in 2019 was due to deterioration of market condition and production-related troubles
- From 2020, we will again bring to a profit growth trend



Major investment plans and timing of profit generation

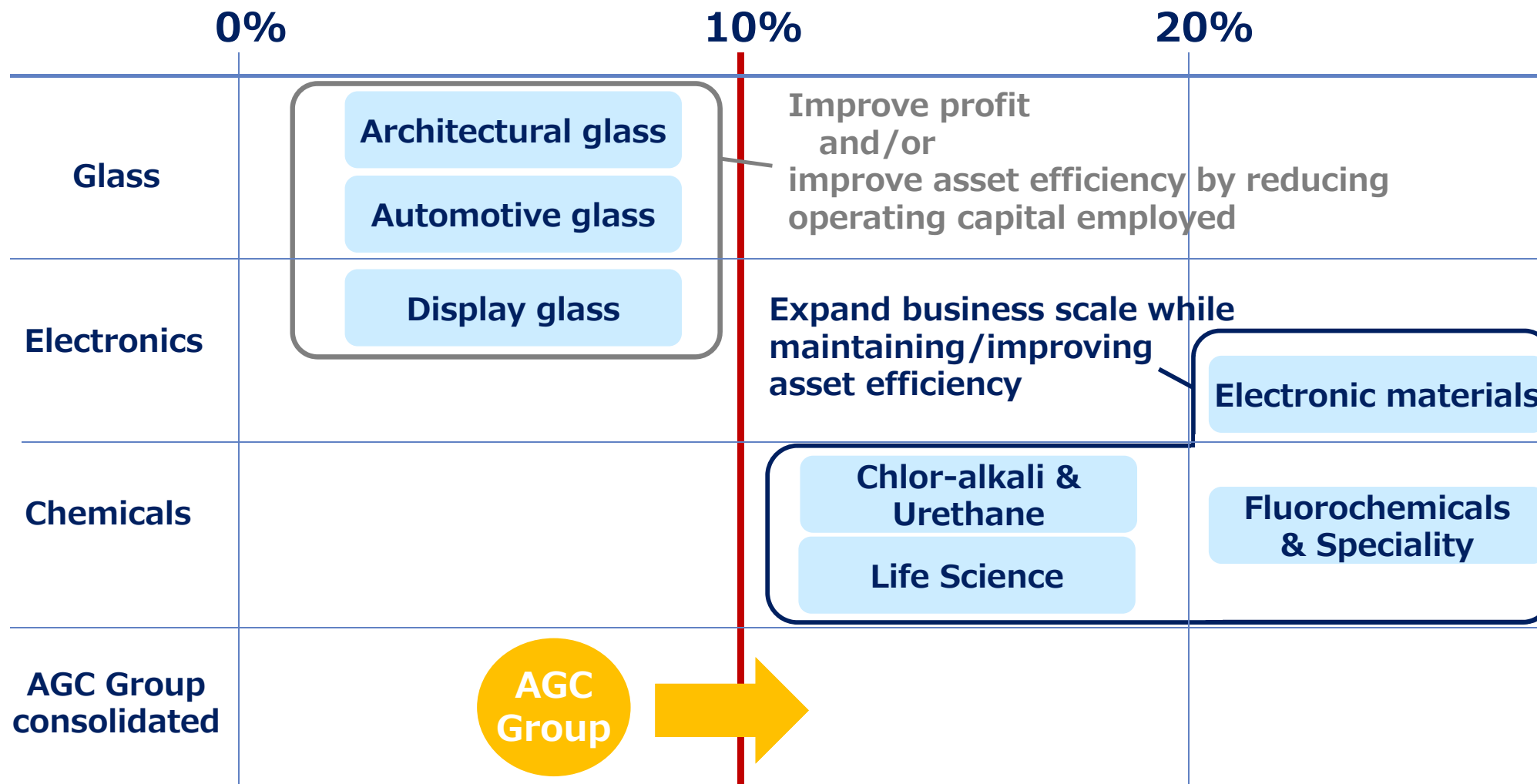
- Investment effect generating from 2020, and gaining momentum from 2021

	2019	2020	2021	2022~
Glass	Europe : Improve productivity and fuel efficiency through cold repairing			
	Brazil : Launch second furnace			
	Indonesia : Launch new coating facility for architectural glass			
	Morocco: Launch new plant for automotive glass			
				China: Launch new plant for cover glass for car-mounted displays
Electronics	China : Relocation of furnace for G11 TFT glass substrates			
	China : Enhance production capacity for G11			
	Japan : Drastically enhance supply system for EUV mask blanks			
Chemicals	Indonesia : Enhance PVC production capacity			
	Thailand : Enhance electrolysis capacity			
	Japan : Enhance fluorochemical production capacity			
	Japan : Enhance GMP compliant synthetic pharmaceutical capacity			
	Demark : Enhance production capacity for biopharmaceutical			
USA : Enhance production capacity of biopharmaceutical				

Business portfolio management

■ ROCE target: 10% or more

ROCE (FY2020 forecast)

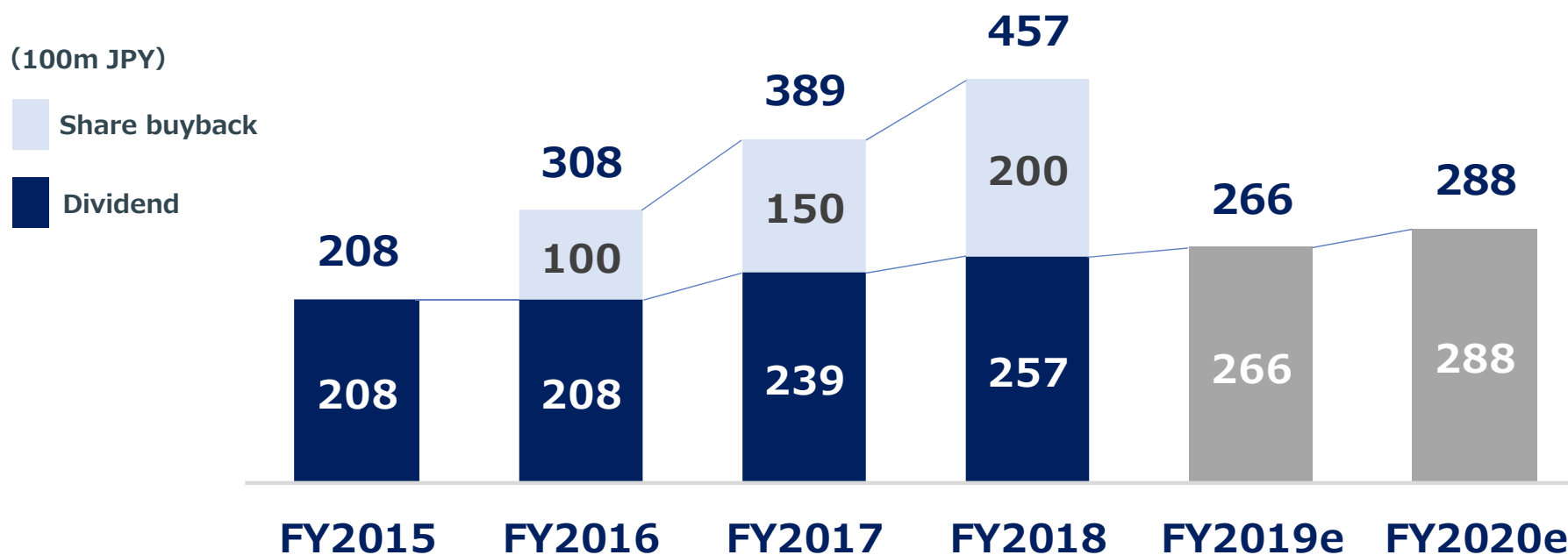


ROCE : (OP forecast for FY2020)/(FY2020 year end operating capital employed(Trade receivables+Inventory –Trade payables + Fixed assets)).
Corporate expense is not allocated to OP forecast of each sub-segment.

- The current policy to be continued.

Specifically, we will maintain the consolidated total return of 50% or more, including share buyback. While dividend payment is to be not less than the current annual payment per share.

- Planning to increase dividend for fourth year in a row since FY2017.

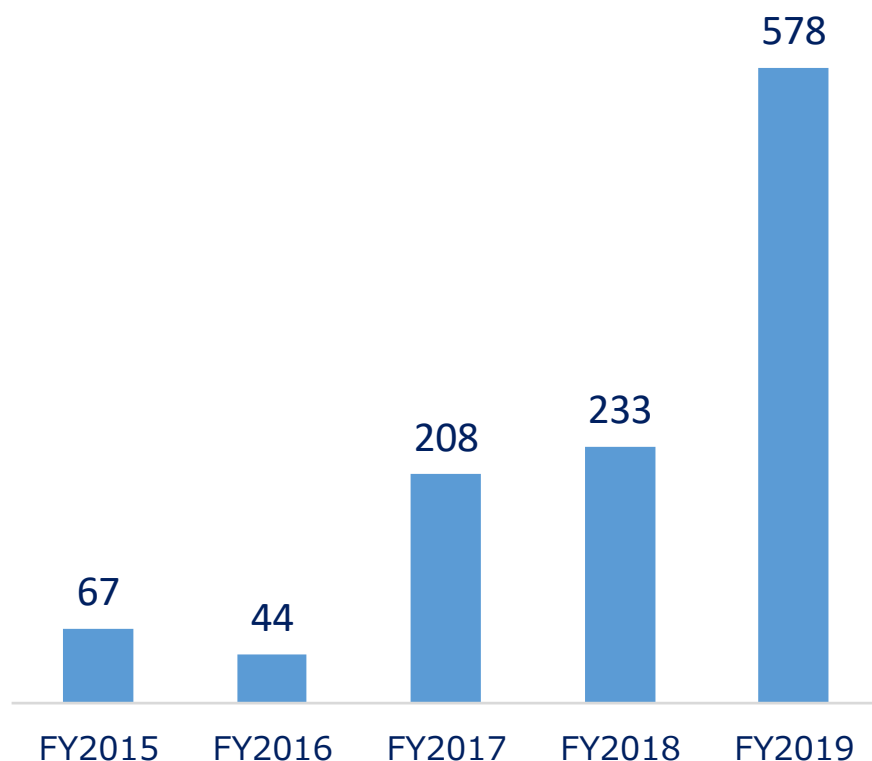


	FY2015	FY2016	FY2017	FY2018	FY2019e	FY2020e
Dividend per share/year	90 JPY	90 JPY	105 JPY	115 JPY	120 JPY	130 JPY
Consolidated total return ratio	49%	65%	56%	51%	60%	50% or more
Dividend ratio	49%	44%	35%	29%	60%	42%

- Cash generated from divestment of strategic shareholdings will be actively allocated to investments, such as for strategic businesses.

Divestment of strategic shareholdings

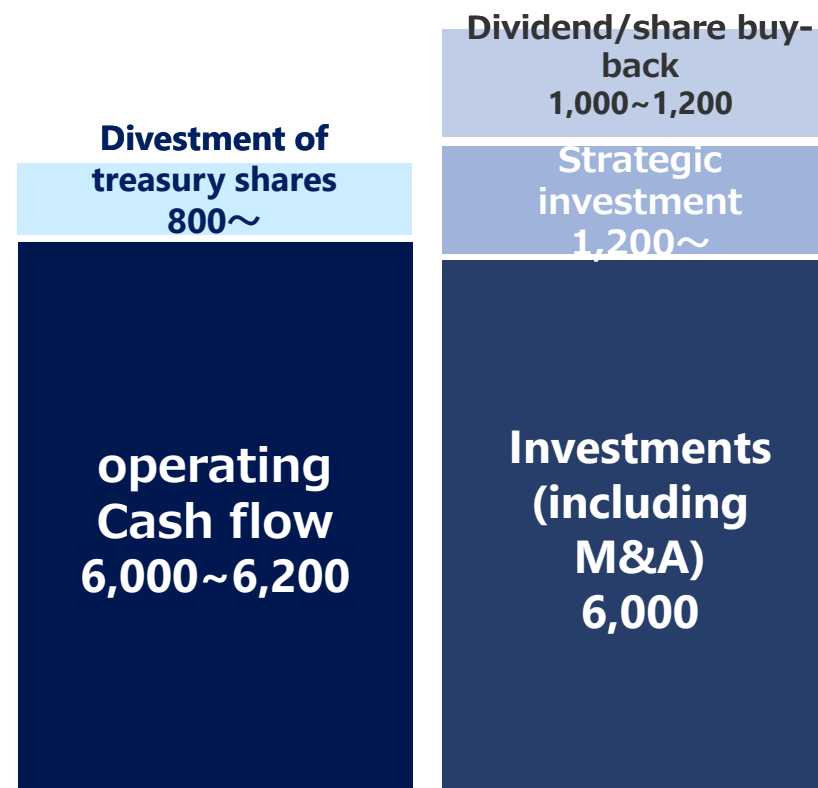
(100m JPY)



Cash allocation(FY2018~20e)

Incoming

Outgoing

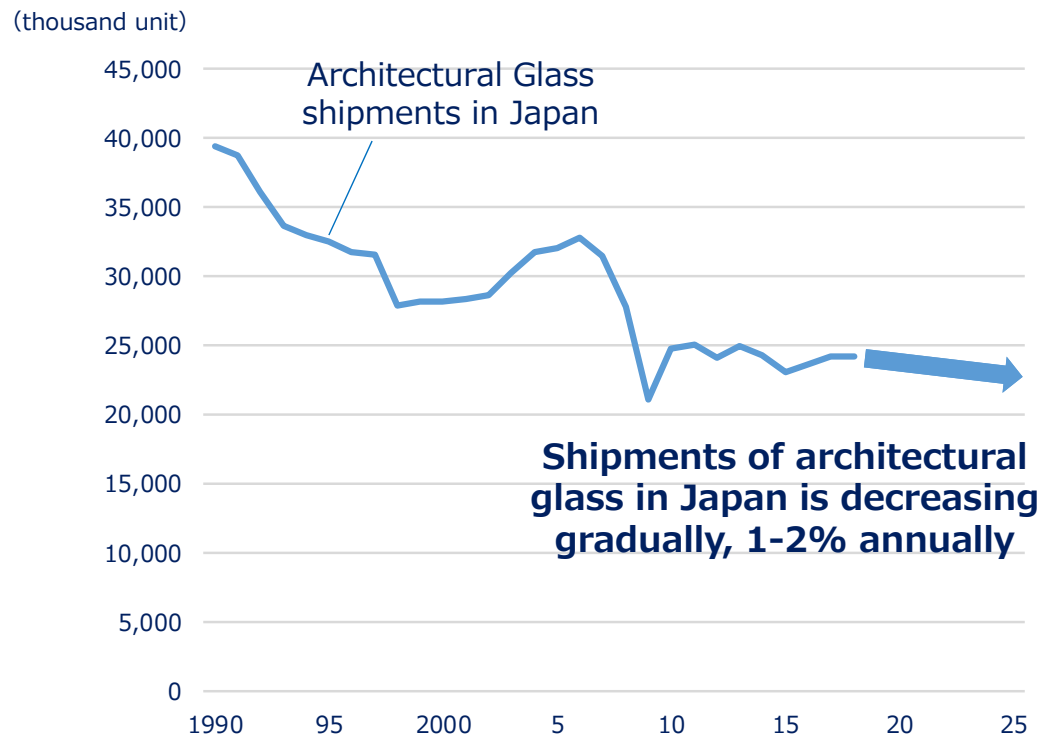


2. Measures for core business

Architectural glass : Integration of architectural glass business in Japan

- In order to adapt to shrinking demand in Japan, AGC and Central Glass Co., Ltd. have concluded a MOU to consider and discuss the integration of architectural glass businesses in Japan
- Aiming for business integration by end of 2020

Architectural Glass shipment in Japan



Number of facility and plants for architectural glass in Japan

	AGC	Central Glass
Furnace for architectural glass	1	1
Coating facilities	2	2
Furnace for figured/polished glass	1	2
Basis for processed glass such as multi-layered glass	16	5
Basis for distribution	32	27

Source : chart made by AGC, based on the data of Japan's Ministry of Economy, Trade and Industry

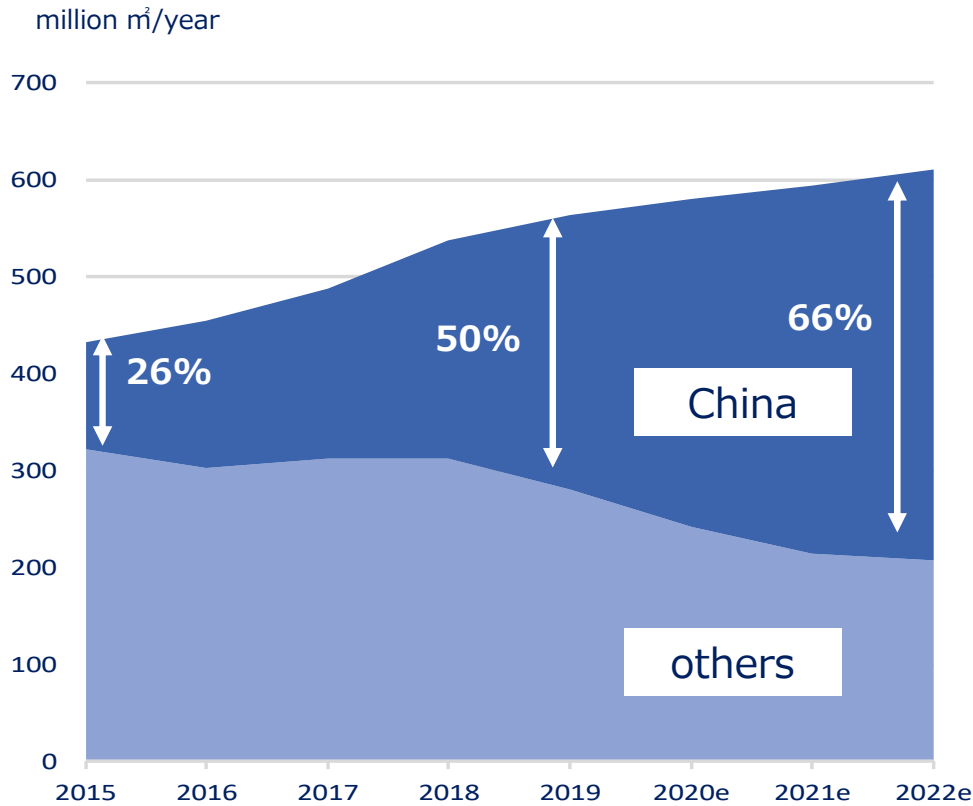
- Shift to high-value added products, and improve productivity in each region.

Region	Measures
Japan/Asia	【Japan】 Improve product efficiency and reduce production cost. Expand sales of high-value added products. 【Asia】 Maintain the flexible operation system in response to demand fluctuations.
Europe	Install new facility by watching and responding to demand trend for high value added products, and for improving productivity.
North America	Focusing on structural improvements, such as rationalization of production facilities and cost reduction, rather than expanding market share.

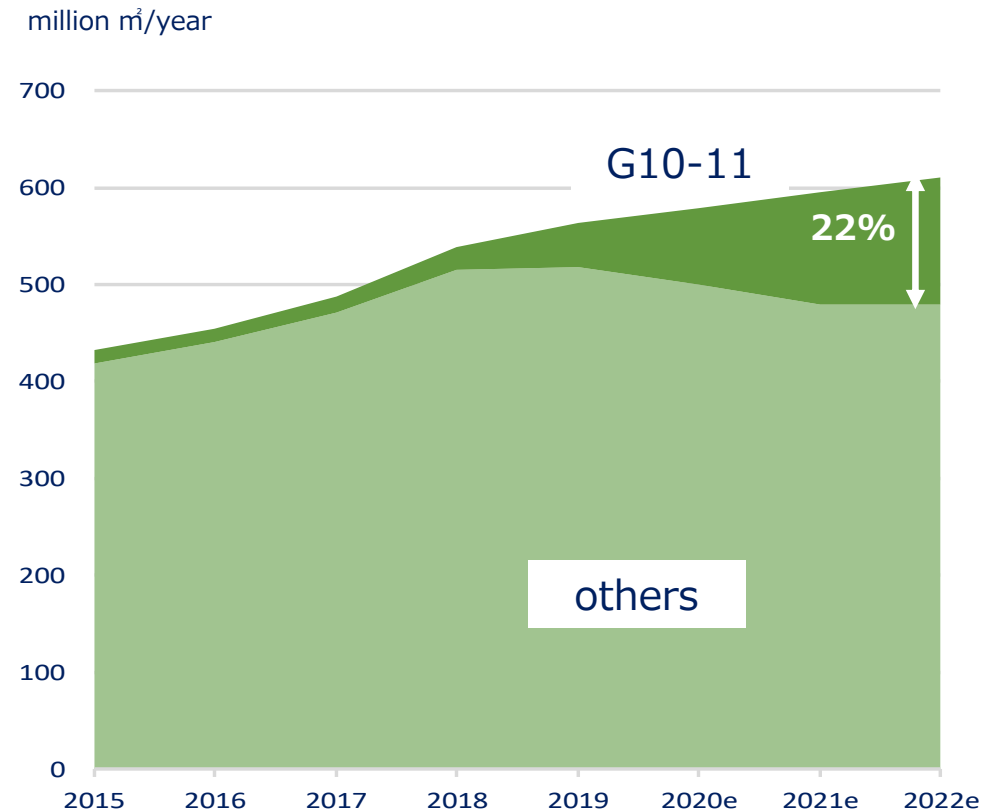
Display : Enhancing capacity for G11 production

- Correspond to demand increase in China for G11. Enhance total capacity by expanding the G11 polishing facility. Total number of furnace is managed to be the same.

TFT glass substrates demand (by region)



TFT glass substrates (by generation)

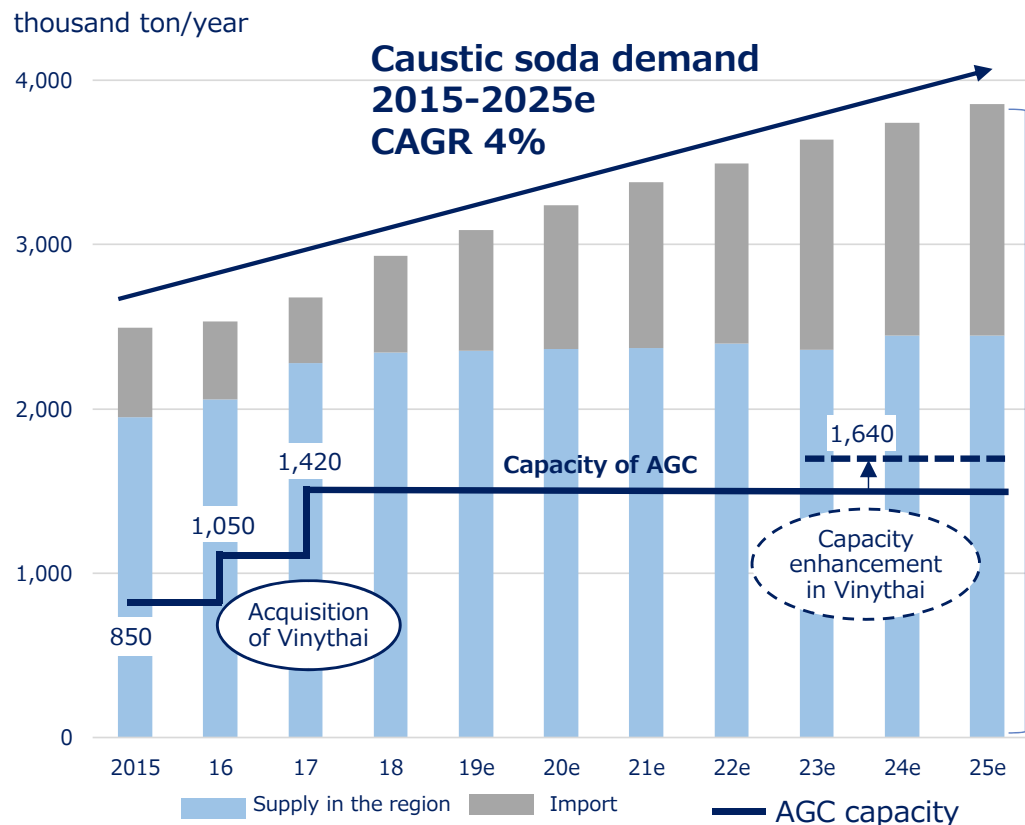


Source : AGC's estimation

Chemicals : Chlor-alkali business in Southeast Asia(1)

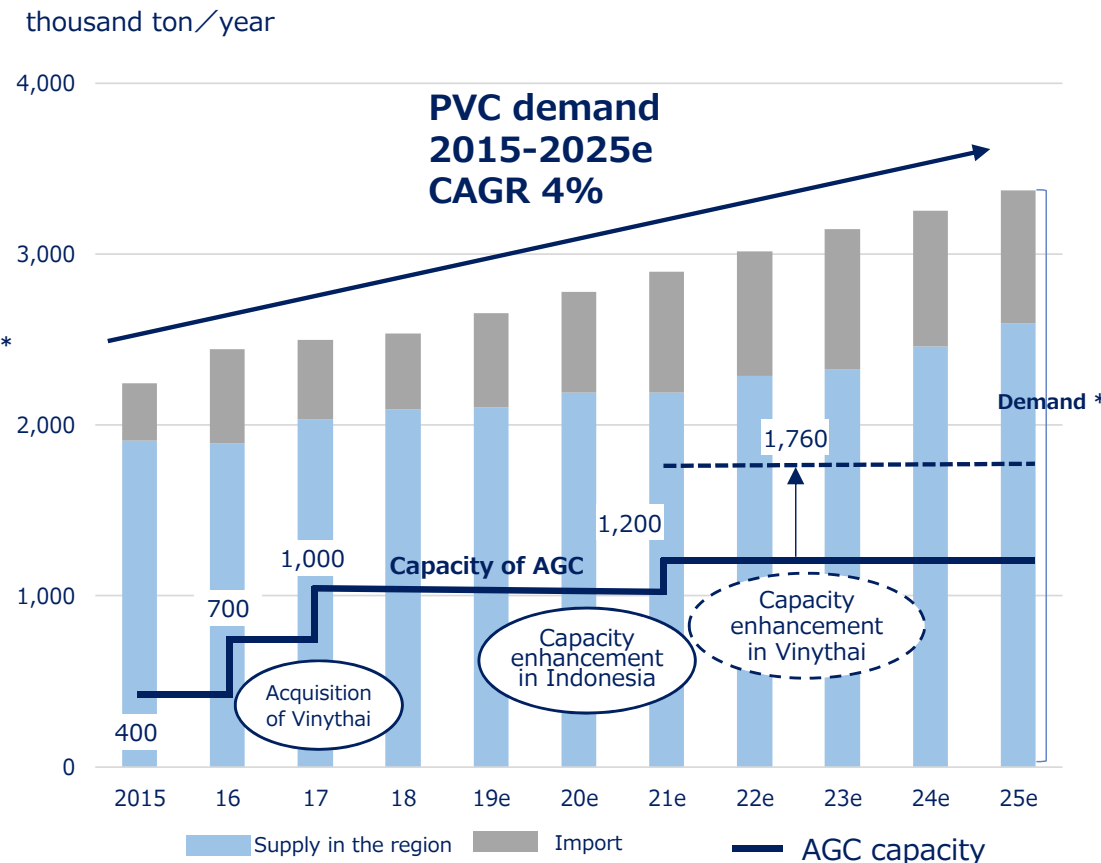
- CAGR 4% growth for Chlor-alkali products in Southeast Asia
- Enhancing capacity in Southeast Asia where robust demand growth is expected and regional capacity is lacking.

Caustic soda market in Southeast Asia



* Excludes Australia and New Zealand.

PVC market in Southeast Asia

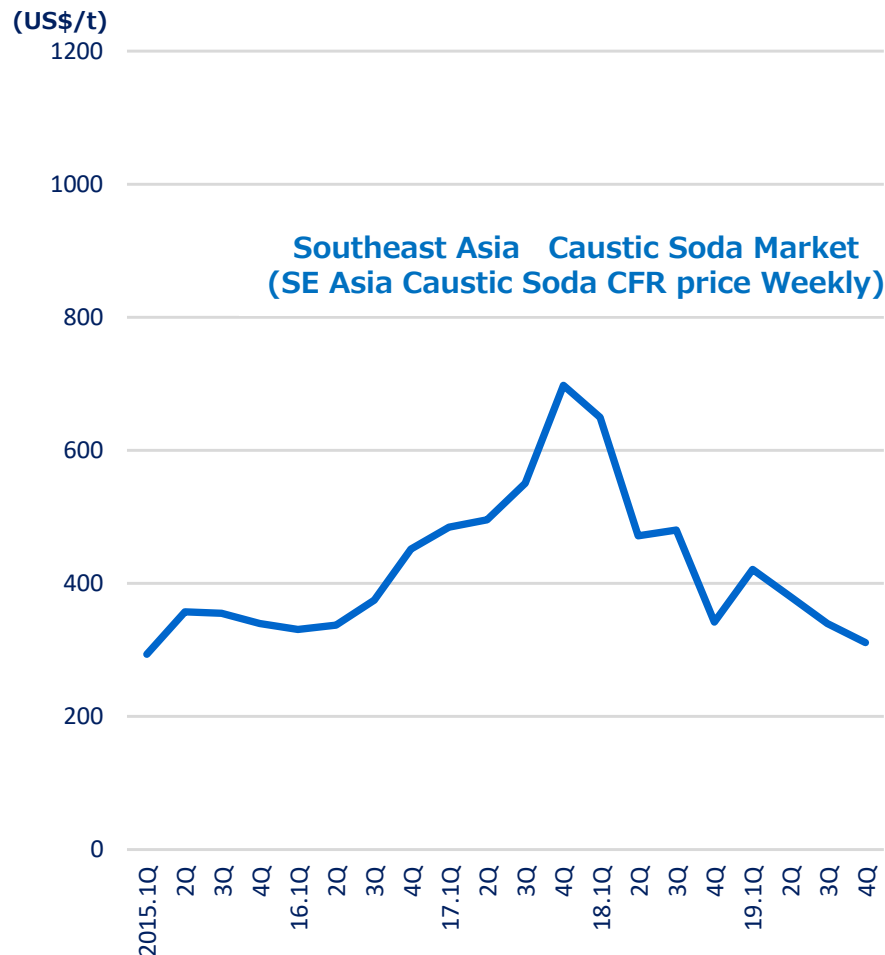


* Includes Australia and New Zealand.

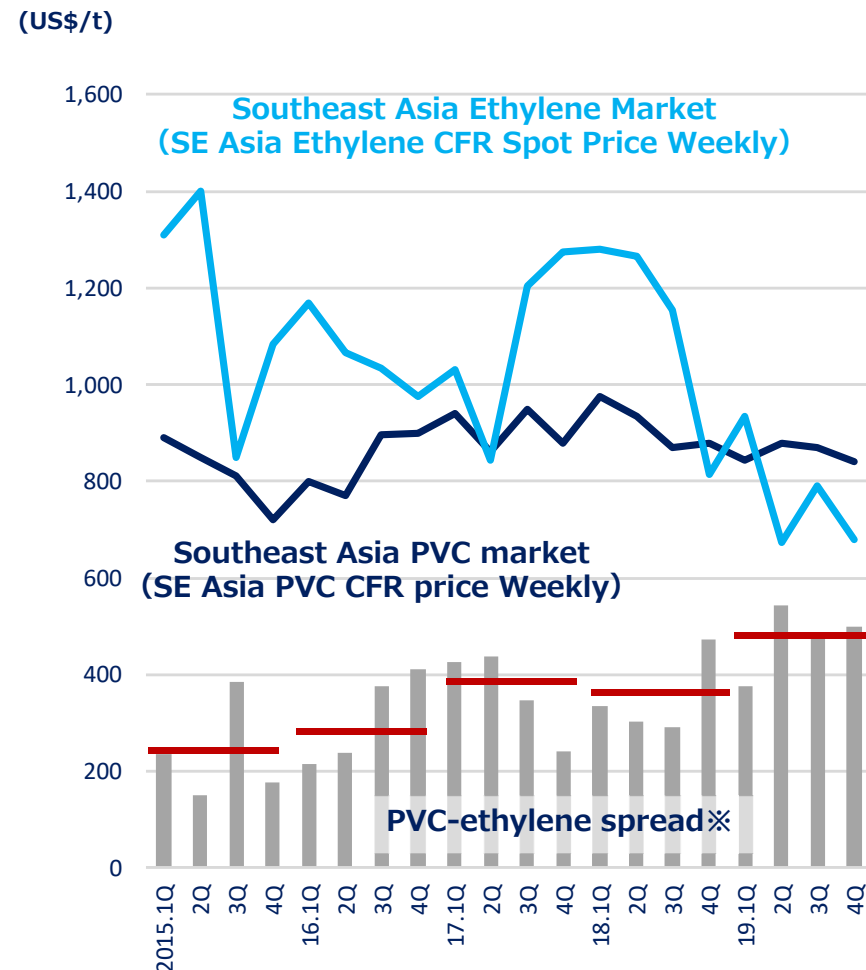
Chemicals : Chlor-alkali business in Southeast Asia(2)

- Stable profitability of chlor-alkali business in Southeast Asia. Decline of caustic soda market price is balanced by price decline of ethylene, which is PVC's raw material.

Caustic Soda Market



PVC·Ethylene Market



Annual average PVC-ethylene spread is in the trend of expansion.

Chemicals : Capacity Enhancement of fluorochemical

- Enhancing capacity in response to demand growth for semiconductor, next-generation high-speed communications, and transportation related applications.
- Phase-based capacity enhancement from raw materials to various product groups, such as fluoro resins and low-GWP refrigerant/foaming agent.

Total investment approximately 70 billion JPY.

Profit contribution starting from FY2021 onward.

Examples of AGC's high performance fluorochemical products

<Fluon® ETFE>



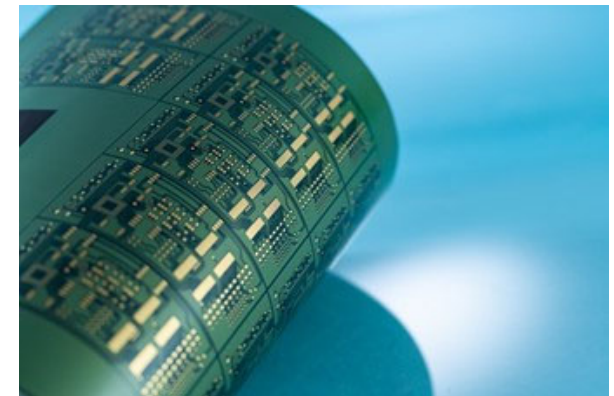
- superior moldability
- heat resistant, chemical resistant
- high light transmittance

<AMOLEA® 1224yd>



- GWP value 1 or less
- meeting environmental regulations
- same performance as HFCs

<Fluon+™ EA-2000>



- having adhesive and dispersible properties while maintaining characteristics of fluoro resin, such as electrical properties and durability
- very low transmission losses

3. Progress of strategic business

【Changes in the macroscopic environment】

Arrival of IoT era

Longer life expectancy

Evolution of transportation infrastructure

Increase of global population

Building new eco-system

Greater safety, security, comfort



Mobility

Connected cars/
Automated driving,
Evolution of information
display, Lighter-weight
transportation means

Electronics

Arrival of IoT/AI era,
Next-generation high-
speed communications/
Automated driving, Use of
novel devices

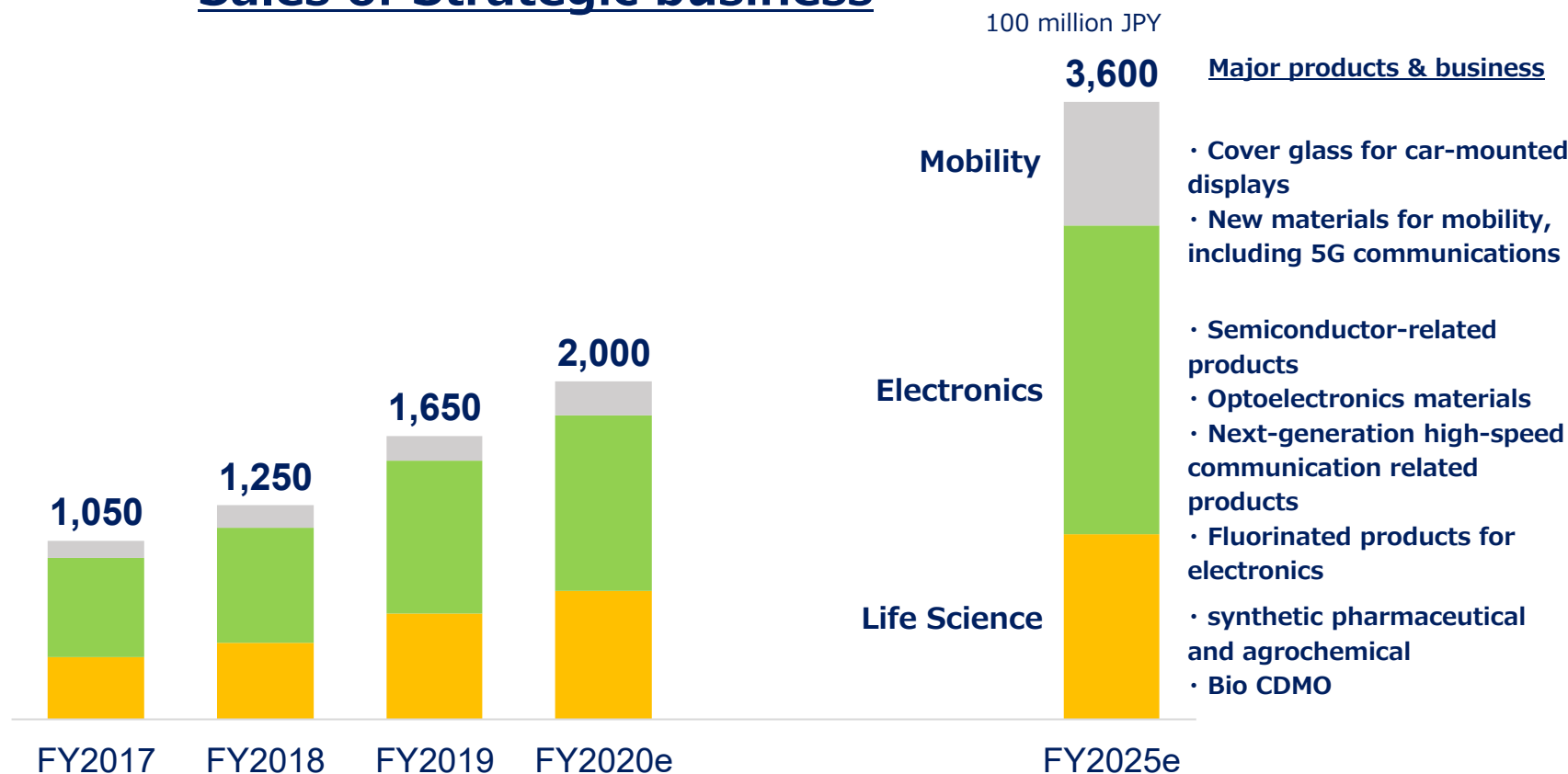
Life Science

Safe & secure medical
care, Longer life
expectancy, Increase of
global population

Strategic Businesses

■ OP growing steadily by effect of active investments

Sales of Strategic business

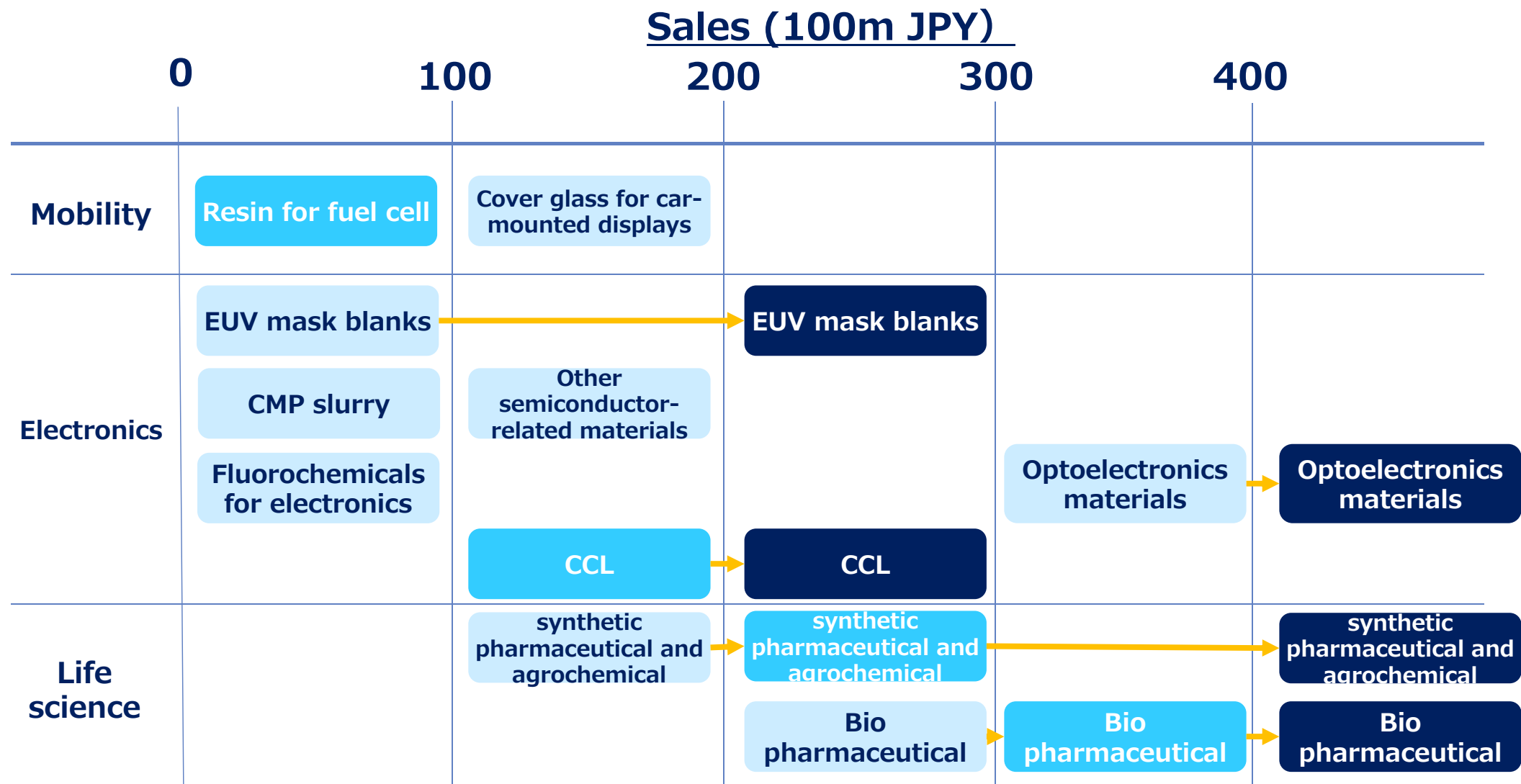


	FY2017	FY2018	FY2019	FY2020e	FY2025e
OP(strategic business)	120	210	265	350	900
Contribution ratio	10%	17%	26%	29%	40%

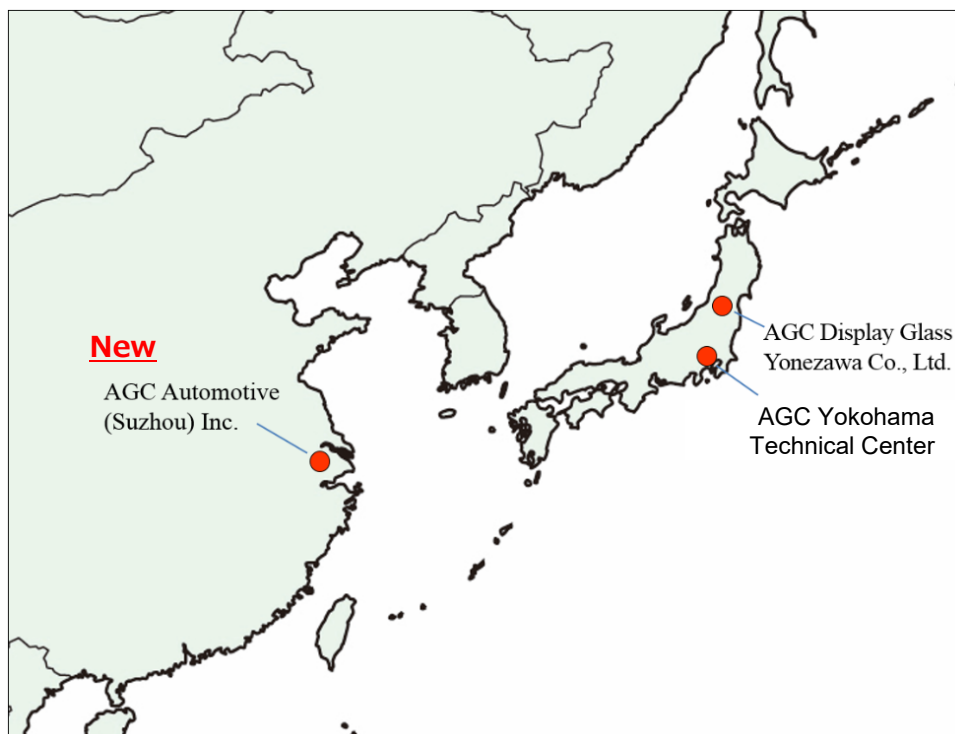
(100m JPY)

Expansion of Strategic Business

■ All business areas expanding sales



- Establish new production site in China for large size/complex-shaped cover glass for car-mounted display
 - mass production starting from FY2022
- Expanding business as being the market leader for luxury car market.



New production site in China



Used in New Lexus RX series released in 2019

Semiconductor processing materials and EUV mask blanks

- Sales expanding in the semiconductor market, mainly in high-end consumables, in line with advances in IoT and semiconductor technologies.
- EUV mask blanks
 - market size expanding significantly from FY2021, as further development for memory, as well as logic going forward.
 - target sales for EUV mask blanks is 40 billion JPY or more in FY2025, and 50% market share.

Technology trend

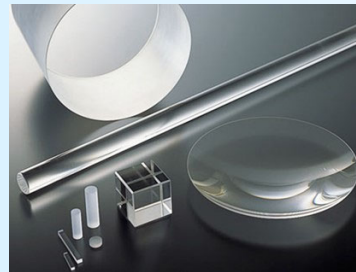
Low-power

minisize

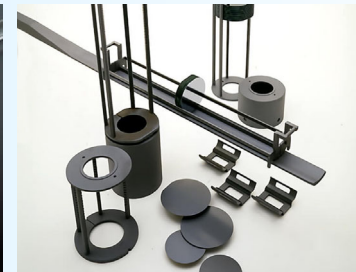
High efficiency

High durability

AGC's solution



Synthetic quartz lens materials



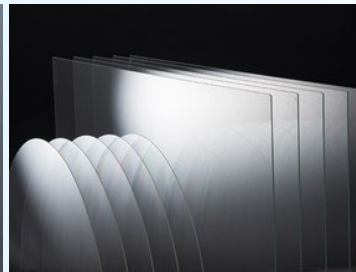
Jig for semiconductor manufacturing equipment



Through Glass Vias



CMP slurry



Glass substrate for semiconductor package



EUV mask blanks

Business related to Next-generation high-speed communications

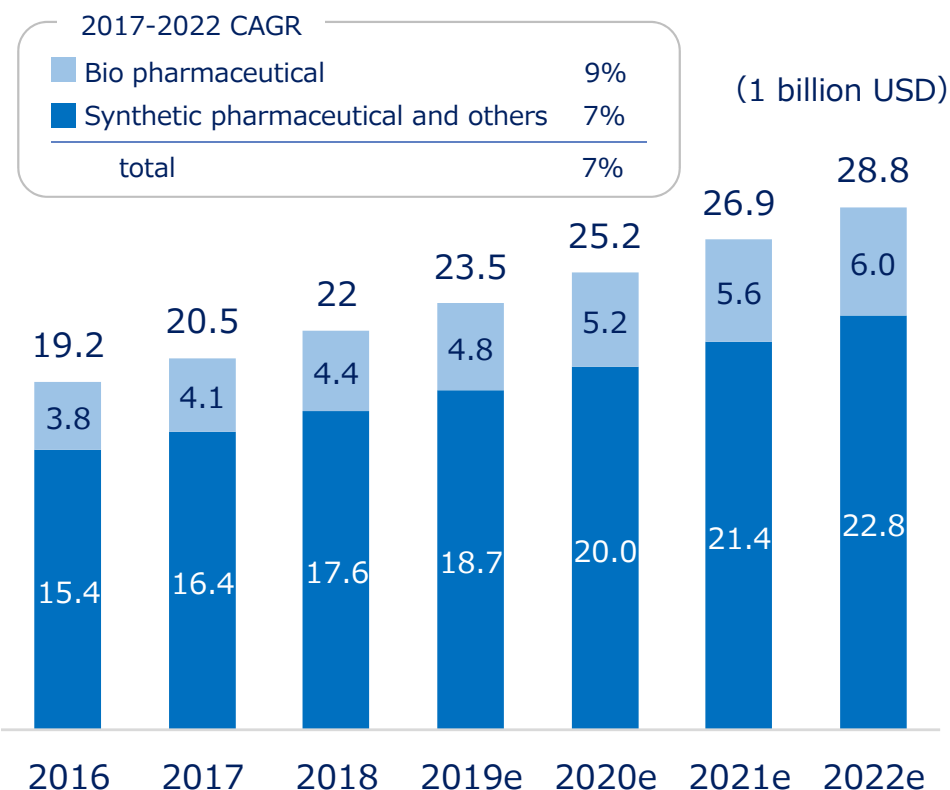
■ Expand business base by 5G related materials and solutions

AGC's solution examples (released)

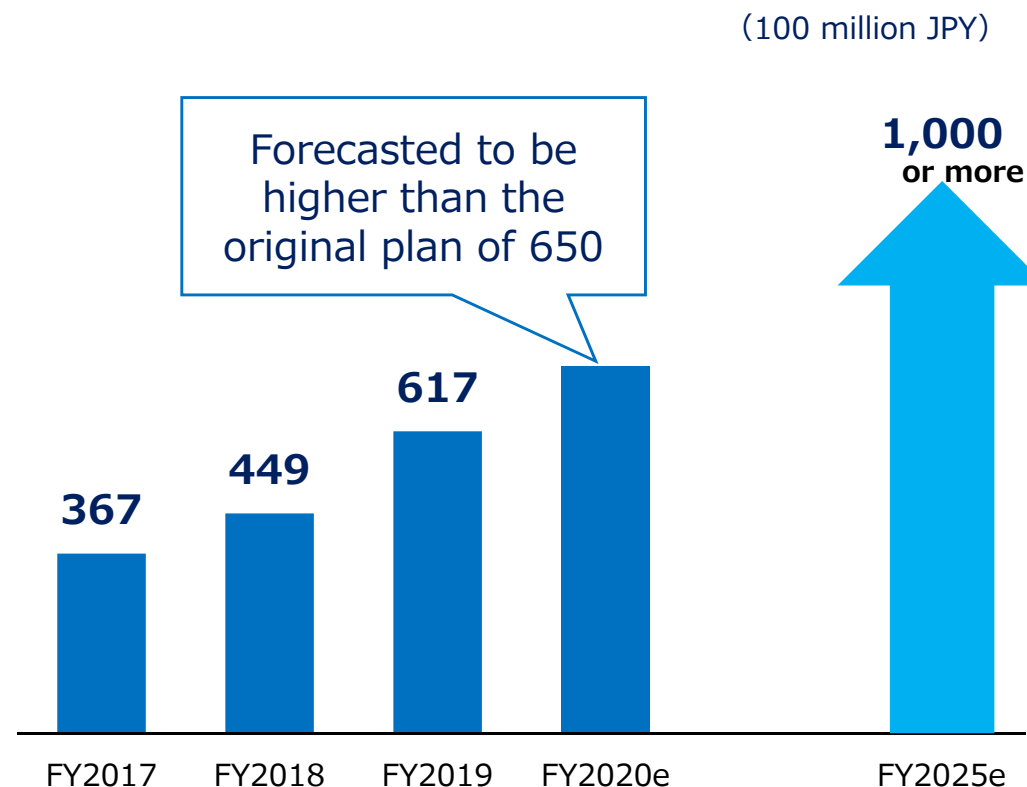
	2018	2019	2020
For buildings/ Glass antenna for base stations WAVEATTOCH™	World's first product to add cellular base station functions to windows 3.5GHz(LTE) band	Completion of development for 5G (Sub6) glass antenna	Starting of service for 5G (Sub6) glass antenna (plan)
For automotive/ 5G glass antenna	Achieved communications with 28GHz band compatible antenna with a fast-moving vehicle	Achieved communications with 28GHz band compatible antenna with a moving vehicle in the city	
Fluon+™EA-2000/ Fluoro resin for printed-circuit board	Capacity expansion announced		
C C L ※	Acquired CCL business of Park Electrochemical	Acquired CCL business of Taconic	
Development stage	Develops a synthetic fused silica glass antenna for 5G	Develops flexible antenna design technology for millimeter wave with ultra- low transmission loss	

- Aim for high growth that outstrips market growth through M&As and active capacity increase.
- Target sales of 100 billion JPY is expected to be achieved earlier than FY2025

Worldwide pharmaceutical CDMO market



Sales of AGC's Life Science Business



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- Life science



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END

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