
NSG
GROUP

NSG Group

FY2019 Annual Results

(from 1 April 2018 to 31 March 2019)

Nippon Sheet Glass Company, Limited

10 May 2019

Shigeki Mori

Chief Executive Officer

Kenichi Morooka

Chief Financial Officer

Clemens Miller

Chief Operating Officer

Agenda

1. FY2019 Financial Results
2. FY2019 Business Update
3. FY2020 Forecast
4. Ordinary Dividends and Redemption of Class A Shares
5. Medium-term Plan (MTP) Phase 2 Update & FY2020 Policy
6. Summary

FY2019 Results Highlights

	(JPY bn)	
Revenue	**612.8** (+2%)	Reflects stable or improving conditions in some areas, offset by sluggish market conditions in Automotive Europe and North America in H2
Trading profit	**38.8** (+3%)	Sixth consecutive year of profit growth
Profit before taxation	**22.7** (+3%)	Finance cost reduction and better JV results more than offset increase in exceptional costs
Taxation	**(8.4)**	No repeat of prior-year one-off charge (JPY 9.6 bn) in the U.S.
Profit attributable to owners of the parent	**13.3** (+116%)	Significant improvement in attributable profit
Free cash flow	**0.9**	Due to below-target operating cash flows and working capital increases

Improved and stabilized attributable profit

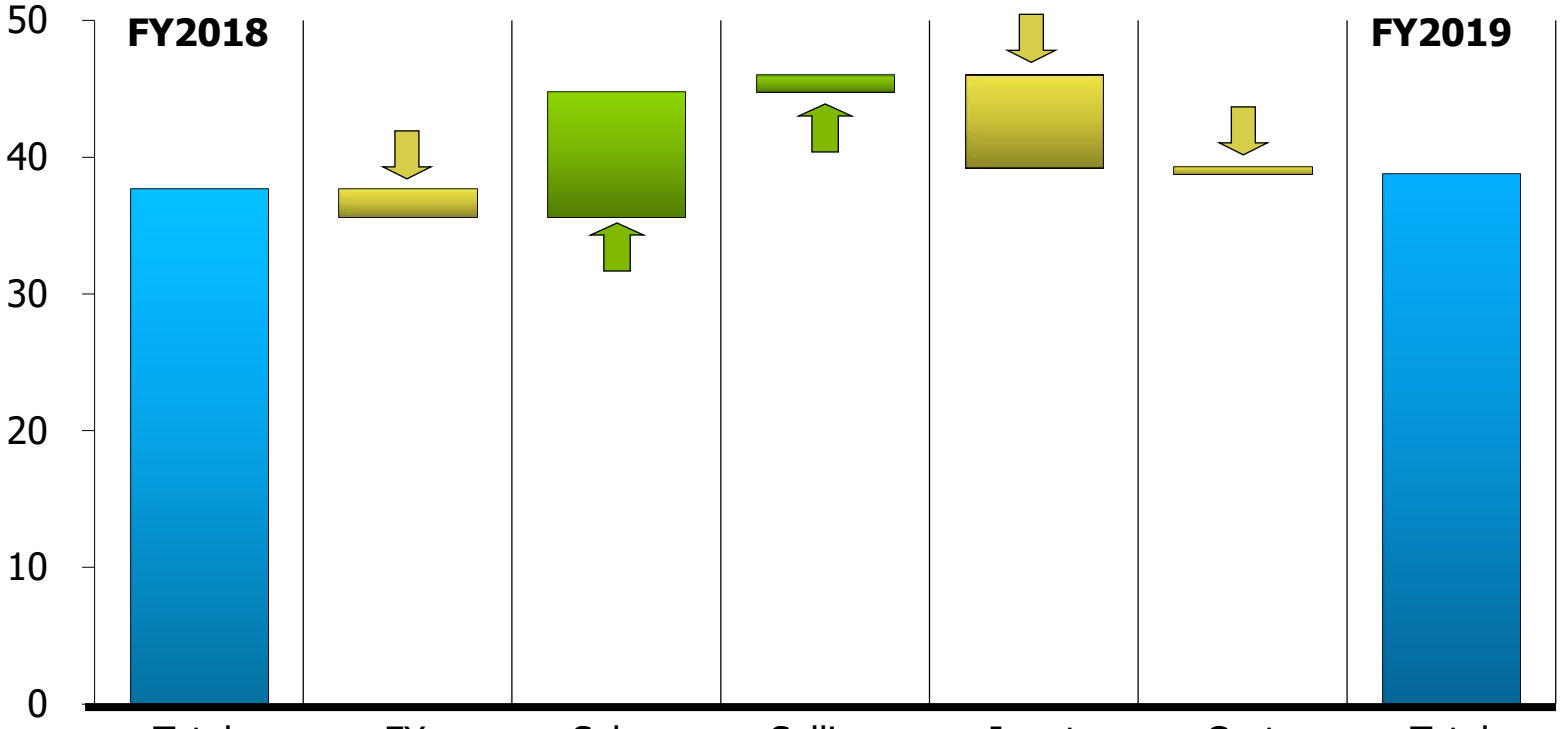
Consolidated Income Statement

(JPY bn)	FY2018 *1	FY2019	Change
Revenue	**598.9**	**612.8**	**13.9**
Trading profit	**37.7**	**38.8**	**1.1**
Amortization *2	(2.0)	(1.9)	0.1
Operating profit	**35.7**	**36.9**	**1.2**
Exceptional items	(1.3)	(7.1)	(5.8)
Finance expenses (net)	(14.6)	(13.3)	1.3
Share of JVs and Associates	2.4	6.2	3.8
Profit before taxation	**22.2**	**22.7**	**0.5**
Profit for the period	**7.9**	**14.4**	**6.5**
Profit attributable to owners of the parent	**6.2**	**13.3**	**7.1**
EBITDA	**63.6**	**64.7**	

*1: Restated due to adoption of IFRS 15 "Revenue from Contracts with Customers"
*2: Amortization arising from the acquisition of Pilkington plc only

Sixth consecutive year of profit growth, in line with forecast

Change Analysis
Trading profit



(JPY bn)	37.7	(2.0)	9.1	1.2	(6.7)	(0.5)	38.8

Improvement in Sales Vol/Mix, partially offset by Input Cost increases

Key Performance Indicators

	31 March 2018 *1	31 March 2019
Net Debt (JPY bn)	306.5	**317.7**
Net Debt / EBITDA	4.8x	**4.9x**
Net Debt / Equity Ratio	2.1x	**2.4x**
Shareholders' Equity Ratio	17.1%	**16.2%**
Return on Equity (ROE)	4.7%	**10.3%**

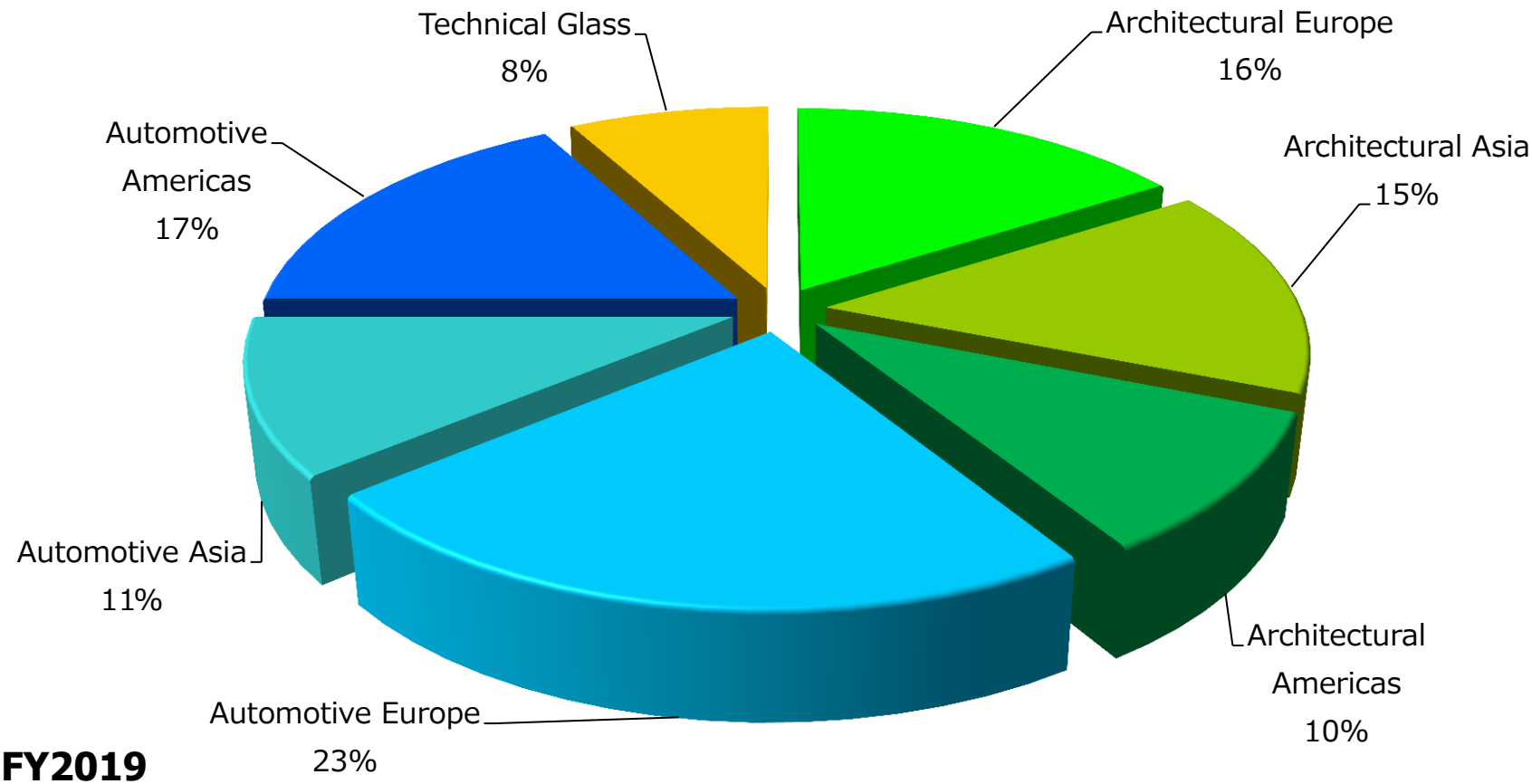
	FY2018 *1	FY2019
Operating Return *2 on Sales	6.3%	**6.3%**

*1: Restated due to adoption of IFRS 15 "Revenue from Contracts with Customers"
*2: Trading profit

Net Debt/EBITDA ratio affected by increase in Net Debt

External Revenue – Group Businesses

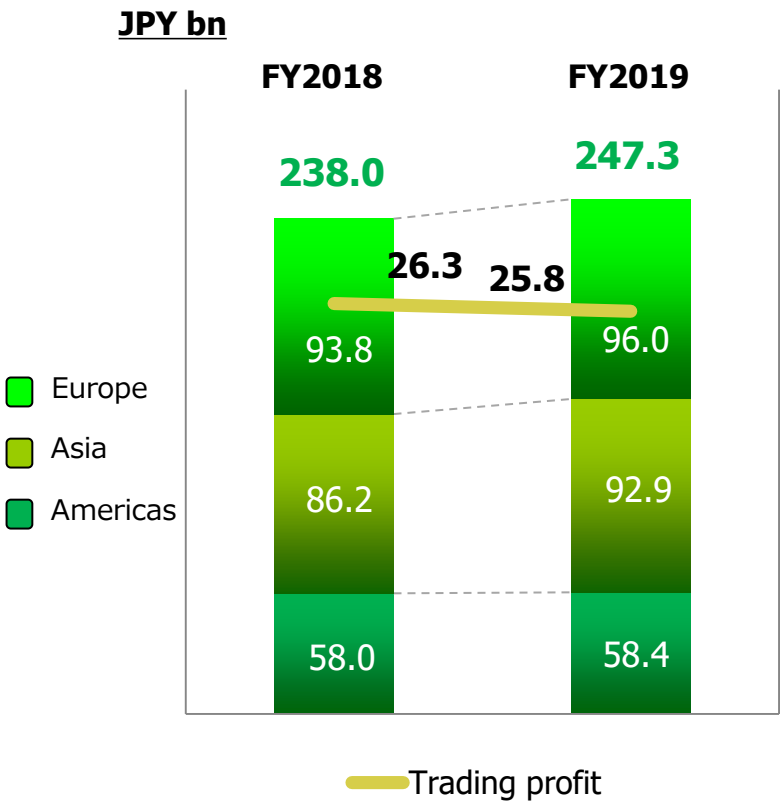
¥ 612.8 billion



FY2019

Diversified geographical coverage

Architectural
FY2018 v FY2019



Europe（Revenue ⇧, Profit ⇨）

- Profits improved slightly, after being affected by a furnace repair in H1 and input cost increases

Asia（Revenue ⇧, Profit ⇨）

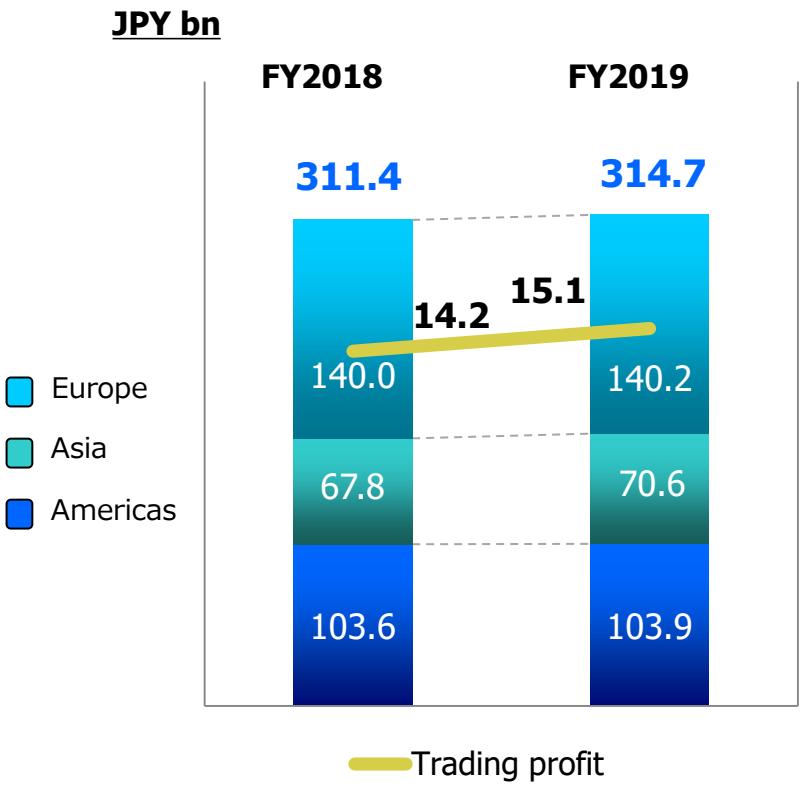
- Results improved in Japan due to increased volumes
- Southeast Asia benefitted from improved solar volume offset by increase in input costs

Americas（Revenue ⇧ , Profit ⇩）

- North America revenue improved with robust demand and restart of Ottawa facility, but profits affected by cost push
- South America results in JPY affected by foreign exchange movements and hyperinflation accounting adjustments

Affected by input cost push and deterioration of Argentinian Peso

Automotive
FY2018 v FY2019



Europe（Revenue⇨, Profit⇧）

- Profits improved year-on-year despite market conditions deteriorating from Q3
- Improving volume and mix in AGR

Asia（Revenue⇧, Profit⇨）

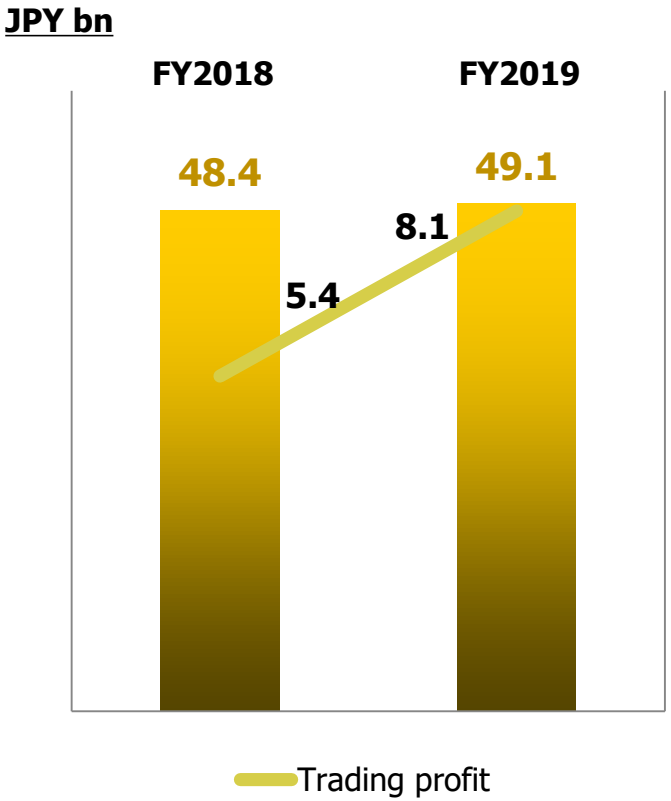
- Japan revenues improved despite supply chain interruptions caused by natural disasters in H1
- Increased AGR volumes

Americas（Revenue⇨, Profit⇨）

- North America OE volumes reflect a progressive weakening of light vehicle sales during the year
- Profitability improved in South America with recovery of volumes in Brazil

Steady improvement in performance, market weakness from Q3

Technical Glass
FY2018 v FY2019



Technical Glass
(Revenue ↑, Profit ↑)

- Fine Glass(*) profit improved due to higher revenue and lower cost base
- Slight decline in the demand of printer lenses
- Demand for glass cord softened
- Metashine™ sales expansion for automotive paints and cosmetics
- Strong demand for battery separators in Japan

*: The Group announced on 29 March 2019 that Display Division of Technical Glass Strategic Business Unit will change its name to Fine Glass Division, effective April 1, 2019.

Profits continue to improve, especially in Fine Glass(*)

FY2020 Forecast
Consolidated income statement

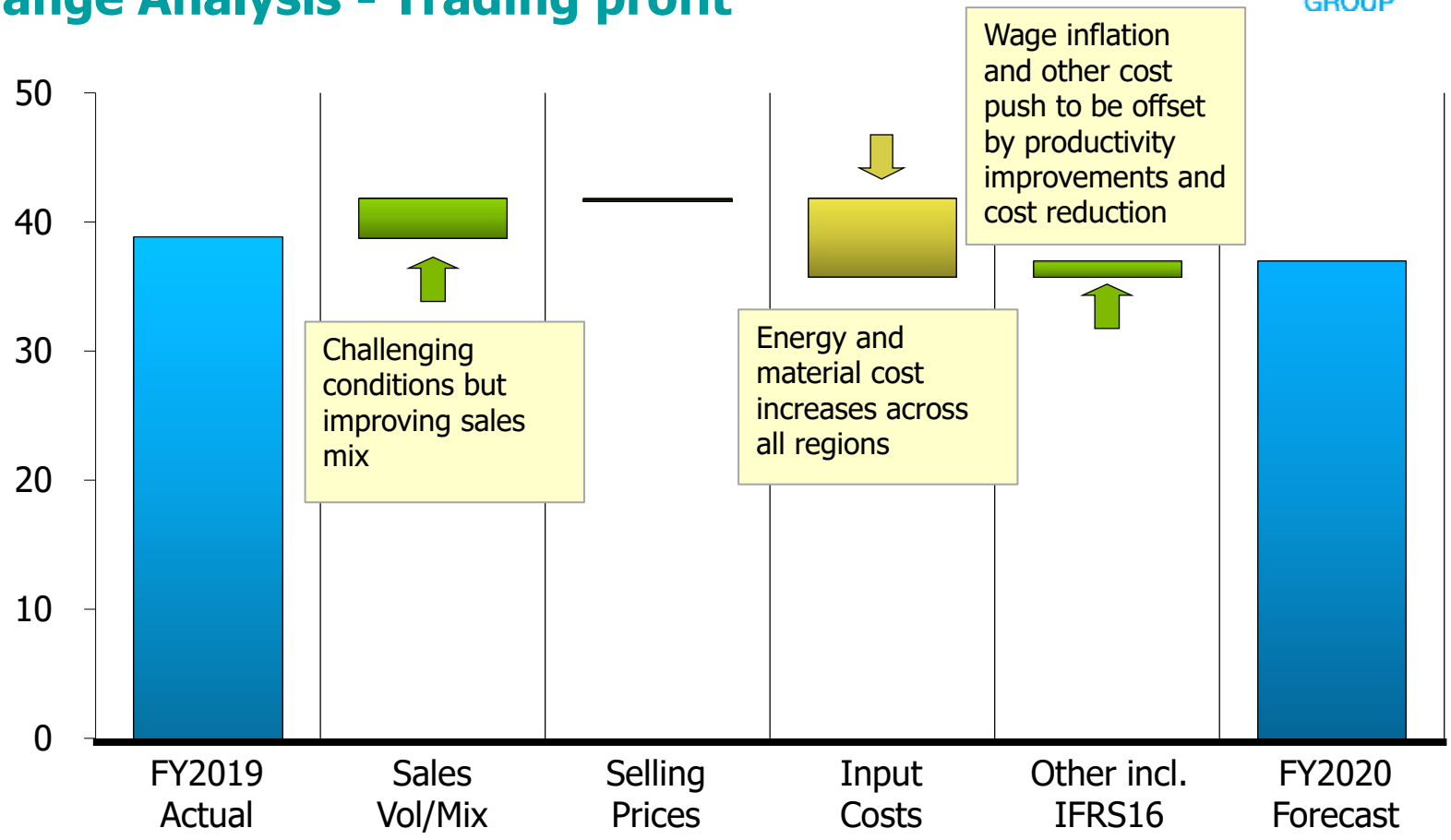
(JPY bn)	Actuals FY2019	Forecast FY2020	Change
Revenue	**612.8**	**620.0**	**7.2**
Trading profit	**38.8**	**37.0**[*2]	**(1.8)**
Amortization [*1]	(1.9)	(2.0)	(0.1)
Operating profit	**36.9**	**35.0**	**(1.9)**
Exceptional items	(7.1)	(6.0)	1.1
Finance expenses (net)	(13.3)	(14.0)[*2]	(0.7)
Share of JVs and Associates	6.2	4.0	(2.2)
Profit before taxation	**22.7**	**19.0**	**(3.7)**
Profit for the period	**14.4**	**12.0**	**(2.4)**
Profit attributable to owners of the parent	**13.3**	**11.0**	**(2.3)**

*1: Amortization arising from the acquisition of Pilkington plc only
*2: As result of the adoption of IFRS16 'Leases', finance expenses expected to increase by JPY 1bn and operating expenses expected to decrease by JPY 1bn. No significant impact expected on profit before taxation or profit for the period.

FY2020 Forecast Assumptions:
Page 44: Depreciation, CAPEX, R&D expenditures
Page 45: Foreign exchange rates and oil prices

Decrease in profit reflects increases in input costs

FY2020 Forecast
Change Analysis - Trading profit



(JPY bn)	FY2019 Actual	Sales Vol/Mix	Selling Prices	Input Costs	Other incl. IFRS16	FY2020 Forecast
	38.8	**3.0**	**0.0**	**(6.0)**	**1.2**	**37.0**

Increase in input costs more than offset Vol/Mix improvements

Outlook

- **Overall**
  - Revenues slightly above FY2019 with further improved VA sales
  - Trading profit impacted by input cost increases, limited pass-through due to market conditions
- **Architectural: most affected by input cost increases**
  - European markets to remain robust
  - Asian markets to remain stable, while solar glass volumes to increase
  - Increasingly competitive markets in North America
- **Automotive: challenging market conditions expected**
  - Subdued demand in Europe
  - Cost increase expected in Asia, especially in Japan
  - North American markets to remain challenging, improving volumes in Brazil
- **Technical glass: markets generally positive**
- **Net debt: increase expected**
  - Recurring cash flows to be positive
  - Strategic investment projects impact
  - IFRS 16 impact expected - approximately JPY 40bn of new assets & liabilities (impact to Net Debt/EBITDA expected to be immaterial)

Dividends

Ordinary dividends for FY2019 year-end: JPY20 per share

Forecast for FY2020 year-end: JPY20 per share

	FY2019			FY2020 Forecast		
	Interim	Year end	Total	Interim	Year end	Total
Ordinary (JPY/share)	-	20	20	-	20	20
Commemoration (JPY/share)	10	-	10	-	-	-
Total Ordinary Dividend	10	20	30	-	20	20
Dividend Amount (JPY bn) (Ordinary Dividends) (Preferred Dividends)	20 (9) (11)	28 (18) (10)	48 (27) (21)	- (-) (-)	35 (18) (17)	35 (18) (17)
Consolidated Payout Ratio (Ordinary)			26%			21%

* Resumption of ordinary dividend payment at the end of FY2018 (JPY20 per share)

Dividend Policy:

- To secure dividend payments based on sustainable business results
- Once Class A Shares are fully redeemed, to aim to maintain a consolidated dividend pay-out ratio of 30 percent

Redemption of Class A Shares
(Acquisition & Cancellation)

Considering continued stability in net profitability, the second redemption of a portion of Class A shares decided

Number of shares to be acquired and cancelled	5,000
Amount	JPY5,800m including JPY750m premium and JPY50m dividends
Planned date of acquisition	6 June 2019
Number of outstanding shares after redemption	30,000 (Issued value: JPY30,000m)

(Note) Issuance on 31 Mar '17: 40,000 share (JPY40 bn)
First acquisition on 7 Dec '18: 5,000 shares (JPY 5bn)

Redemption Policy:

- To redeem Class A Shares at the earliest possible timing, considering attributable profit and preferred and ordinary dividends, while maintaining financial stability.
- By reducing the outstanding shares, the amount of preferred dividends and redemption premium will be reduced.

Medium-term Plan (MTP) Phase 2 Update & FY2020 Policy

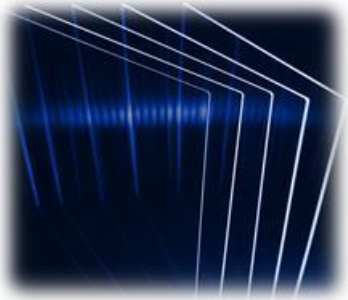
Shift to VA + Growth















Courtesy of First Solar Inc.

* VA: Value-added

Key Message

- Since MTP started in FY2015:
  - Trading profits have expanded continuously, resulting in significantly improved and stable attributable profits; and
  - Preparations for the next growth phase have begun
- However, the financial targets of MTP are unlikely to be achieved – contributing factors identified
- The MTP direction remains unchanged

  With a view to returning to profitability growth from FY2021, the Group will stay focused on what needs to be done to reform its businesses
  - Profitability enhancement: VA shift acceleration and continuous efficiency and cost improvement
  - Development of future growth opportunities: execution of strategic investment projects and new product sales
  - New business development: enhancement of BIC* and R&D



* BIC: Business Innovation Center

MTP Phase 2 – Update on Key Measures

1. Four Key Measures

Drive VA No.1 Strategy	• Enhanced competitiveness of online-coated architectural glass • Increased order awards of value-added automotive glass
Establish Growth Drivers	• Expedited new business development process by managing promising R&D projects as 'Star Projects'
Business Culture Innovation	• Productivity improvement of automotive glass with 'Manufacturing Excellence' • Establishing common mindset of 'Customer First' not only in sales teams but across the Group with marketing focused approach
Enhance Global Management	• Setting up shared service centers at four locations in the world to streamline administrative work • Improving diversity and inclusion with the 'Inclusion & Diversity" declaration

2. Financial Measure

Issuance of Class A Shares to improve equity ratio, resulting in reduced financial expenses one year ahead of plan

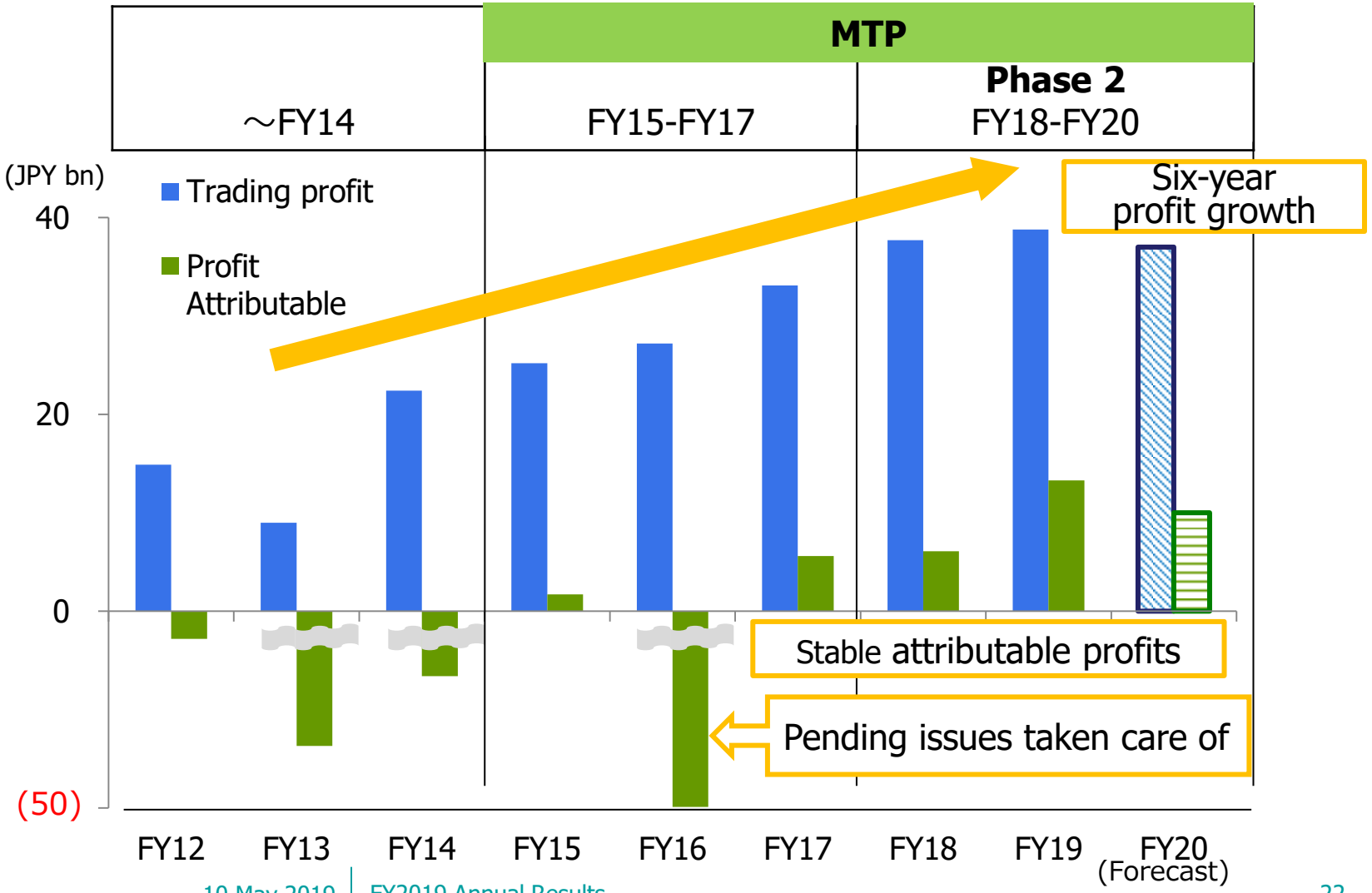
Improvements since MTP Started

Actions taken in line with Long-term Strategic Vision, 'Transformation into VA Glass Company'

～FY14	MTP FY15-FY17	MTP **Phase 2** FY18-FY20
Global financial crisis & European sovereign debt crisis ↓ Restructuring phase to cope with drastic market decline	● VA sales increase ● Efficiency & cost improvement **Trading profits increase** **Additionally** FY16: Pending issues dealt with: ・Exited crystalline solar glass in China ・Suspended thin glass furnace in Vietnam FY17: Issuance of Class A Shares → Financial stability → Financial expense reduction	**Stable attributable profit** '18/3 YE: Ordinary dividend payment resumed '18/12: Partial redemption of Class A shares started FY19: Start preparations for next growth phase - Strategic investment decisions: thin-film solar glass & South America - Launch of BIC

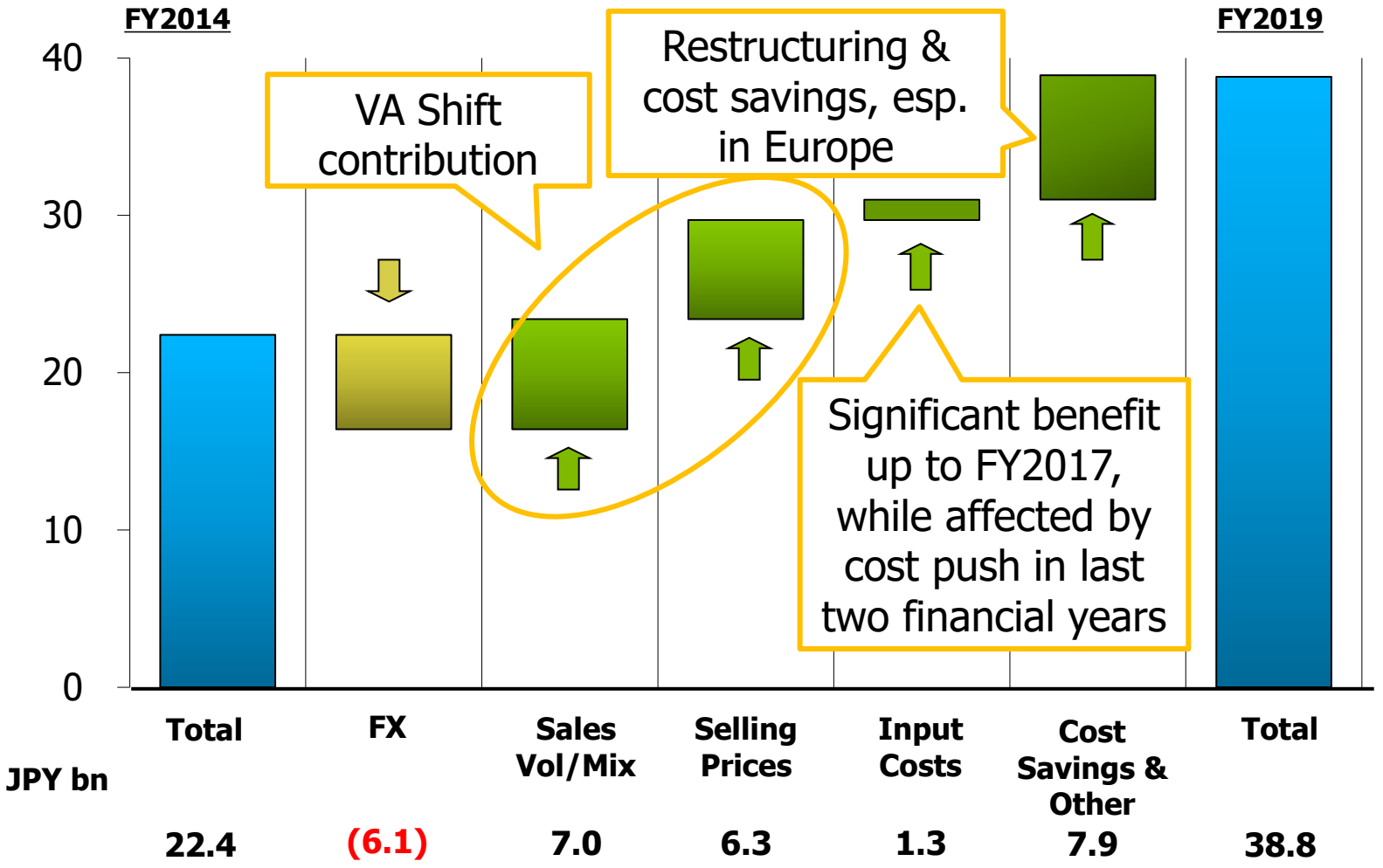
Improved Trading Profits and Stable Attributable Profits

Six-year continuous trading profit improvement resulting in stable attributable profits, though temporary slowdown forecasted in FY2020



Improvement with VA Shift & Cost Savings

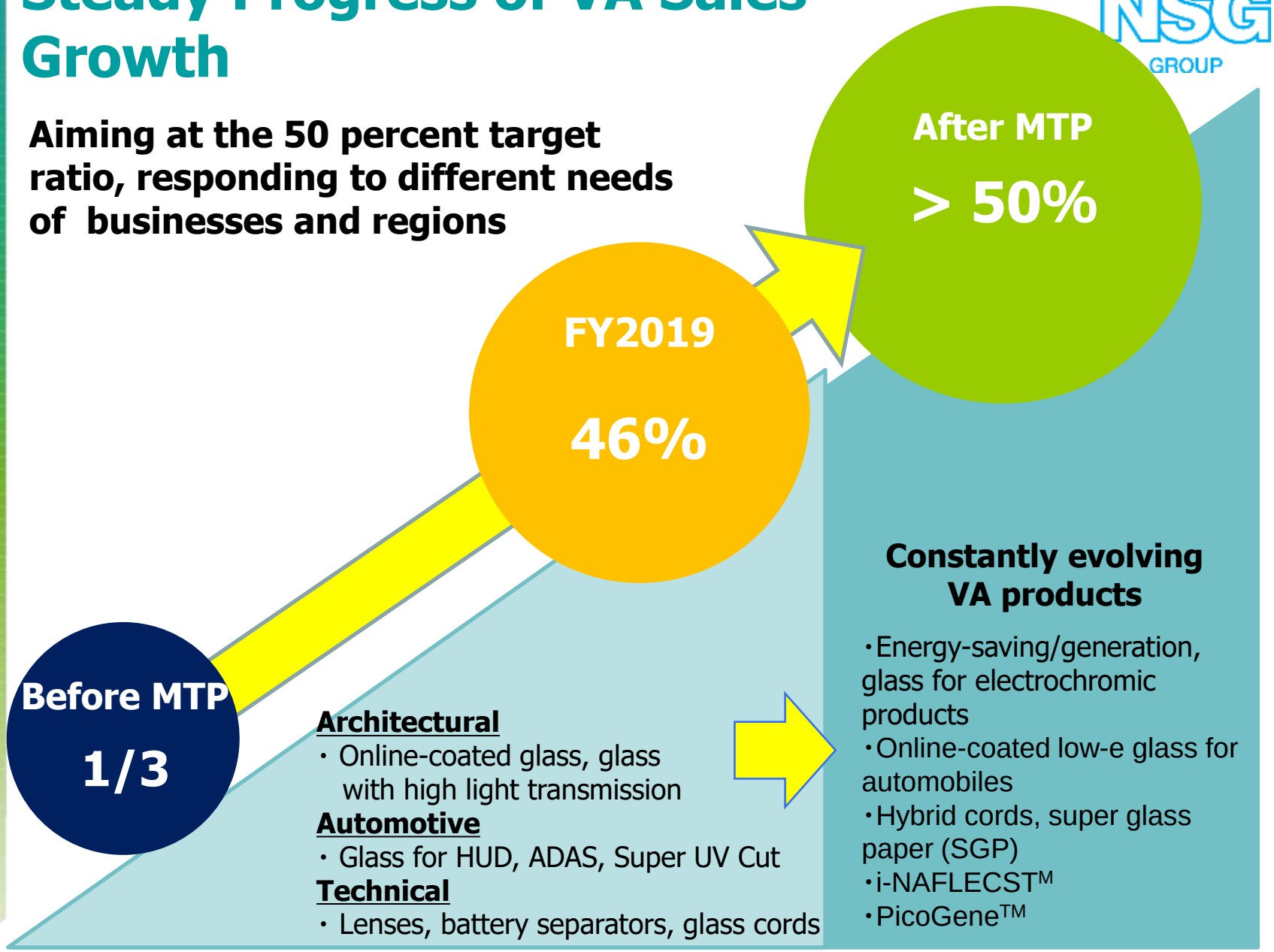
MTP actions improved trading profits, more than offsetting translational effect of strengthening yen



JPY bn	Total	FX	Sales Vol/Mix	Selling Prices	Input Costs	Cost Savings & Other	Total
	22.4	(6.1)	7.0	6.3	1.3	7.9	38.8

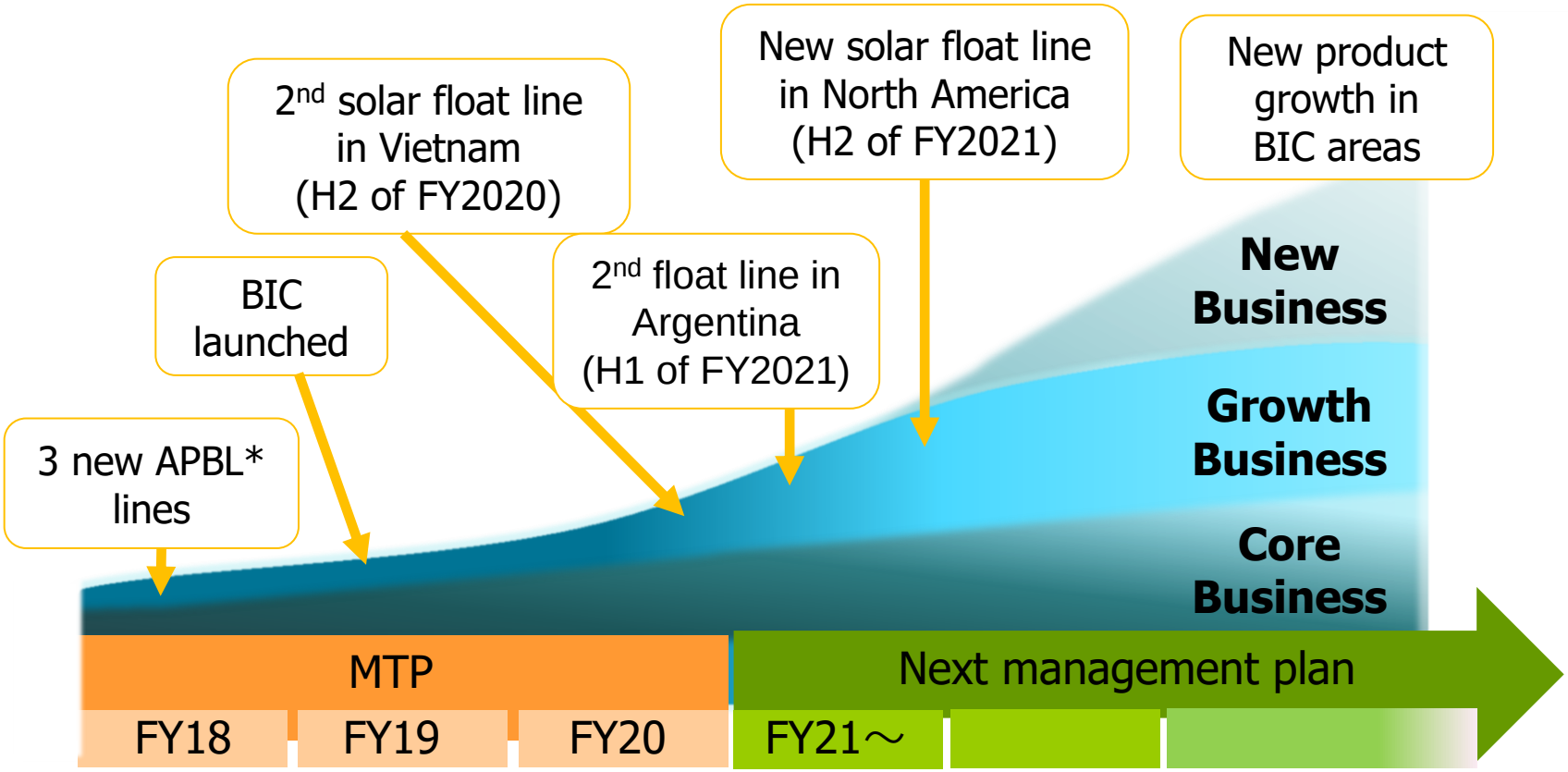
Steady Progress of VA Sales Growth

Aiming at the 50 percent target ratio, responding to different needs of businesses and regions



Strategic Investments Decided for Growth, BIC Launched for Expedited New Business Development

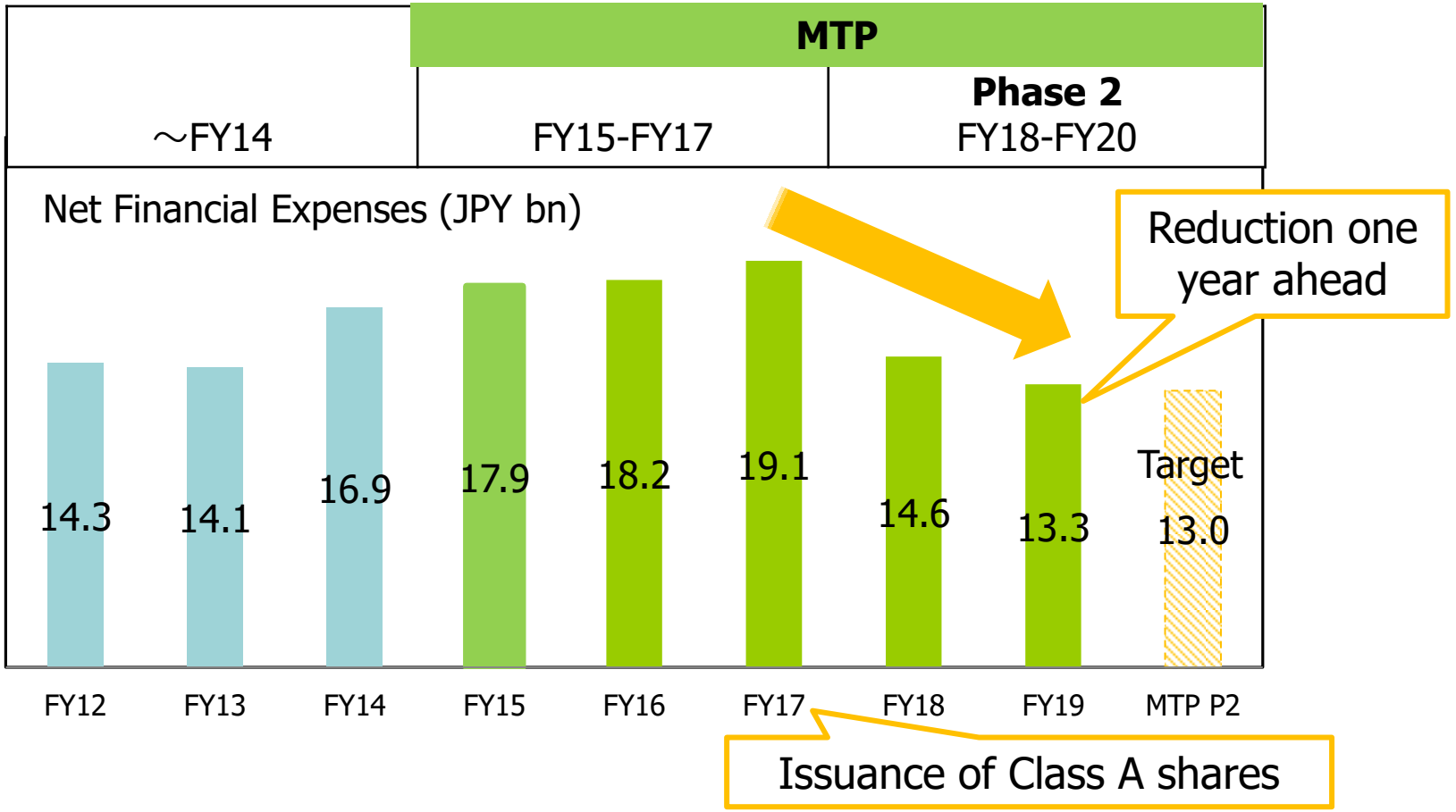
Focused actions in the areas of strengths or growth potential



* APBL : Advanced Press Bending for Laminated

Attributable Profit Boosted by Financial Expense Reduction

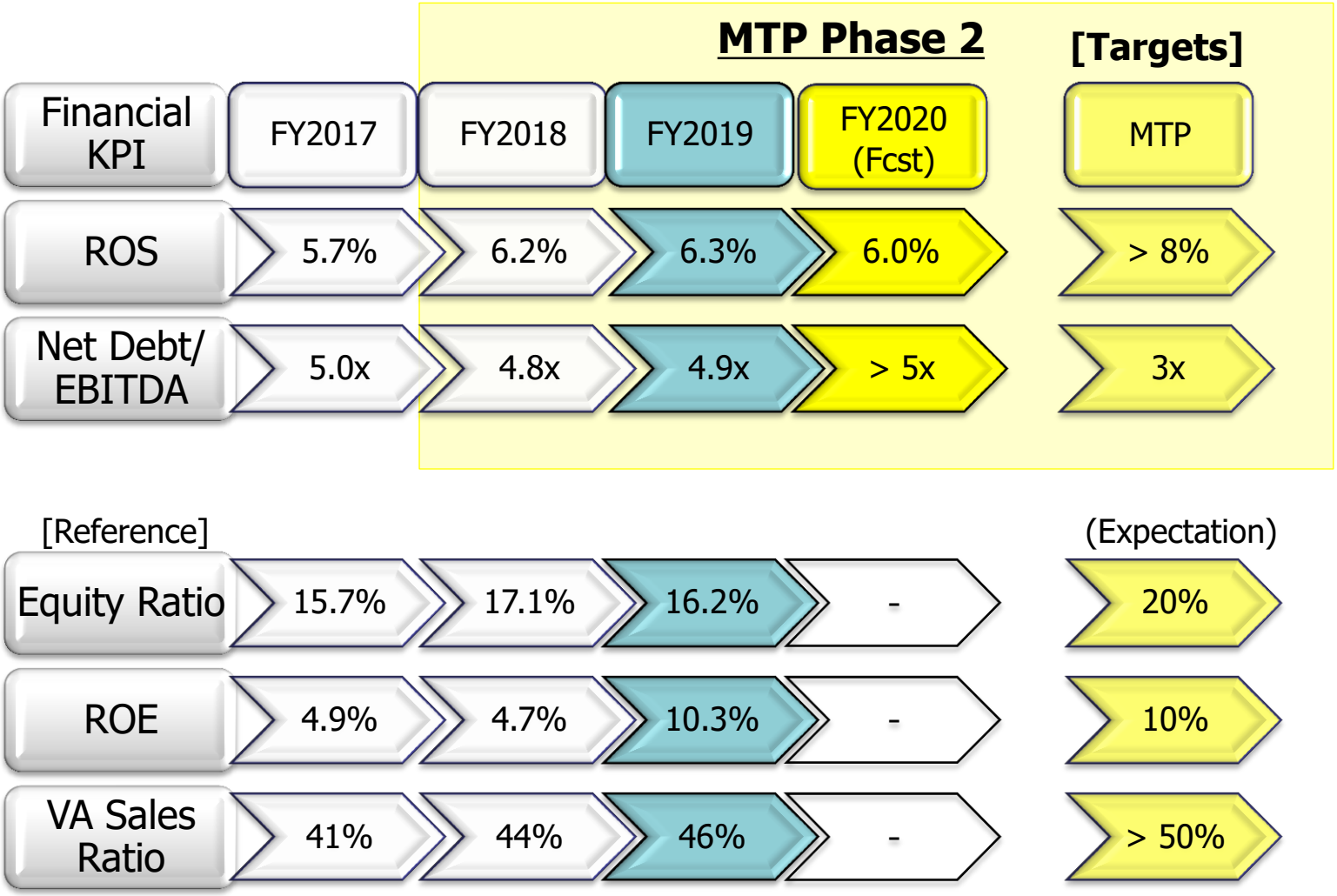
Target reduction achieved in FY2019, helping attributable profit improvement



- FY2019 financial expenses would have been JPY11.8 bn without JPY1.5 bn hyperinflation opportunity costs in Argentina

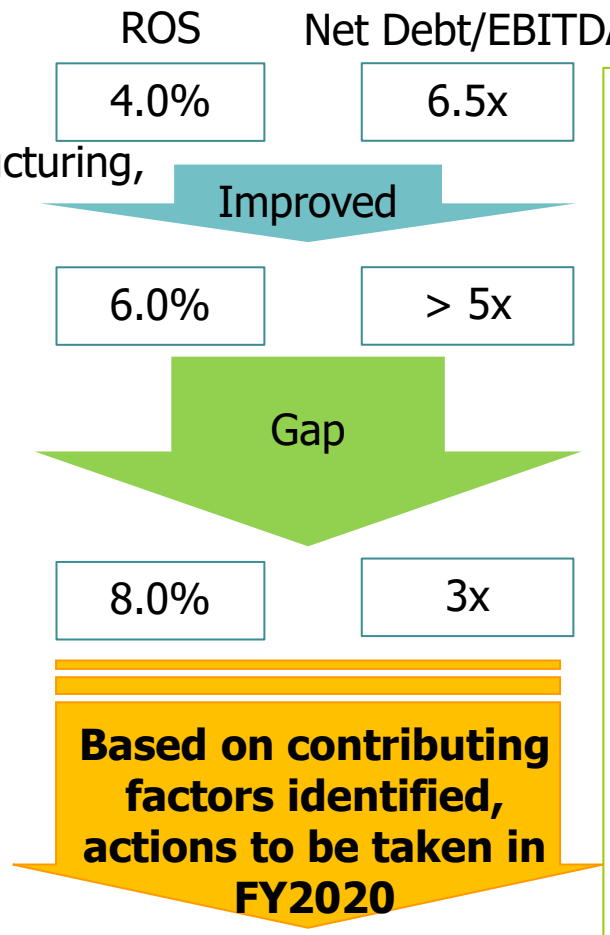
Financial Targets of MTP Unlikely to be Achieved

Improving up to FY2019 but FY2020 to slow down



Gap to Targets – Contributing Factors

Gap mainly due to new product sales delay and cost push, Net debt to be affected by strategic investment decisions



Gap to MTP = Contributing Factors

ROS% & EBITDA

New product revenue growth behind expectation
Slower VA shift in some businesses

Higher input cost inflation than plan

Efficiency gains not driving cost reductions quickly enough

Net Debt

Net debt higher than MTP due to lower profitability and strategic investment decisions

FY20 Policy: Shift to VA + Growth

With a view to returning to profitability growth from FY2021, the Group will stay focused on what needs to be done to reform its businesses

Actions based on different growth phases

Core Business

Profitability Enhancement

- Further accelerate VA shift to achieve 50% target
- Cost structure review in addition to productivity improvement
- Continuous efficiency improvement of underperforming businesses;

Growth Business

Development of Future Growth Opportunities

- Sound execution of strategic investment projects
- Enhancing marketing capability for growth
- Increase and re-focus R&D
- Acceleration of new product launches

New Business

New Business Development

- Additional resources to Business Innovation Center (BIC), moving to execution phase

Core Business

Profitability Enhancement

To improve business profitability further

- Further accelerate VA shift to achieve 50% target
  - Technical Glass above target, Architectural Glass on course
  - Automotive business on track to achieve profit improvements at model change timings
- Cost structure review in addition to productivity improvement
  - Stepping up operational capabilities in response to stricter quality requirement for VA products; manufacturing excellence enhancement
  - Supply chain cost reduction (logistics) and production process improvement
- Acceleration of underperforming businesses improvement (business structure review and selection & focus)
  - Restructuring, selection & focus, efficiency improvement in low Ros businesses such as Architectural Glass Japan

Growth Business

Development of Future Growth Opportunities

All strategic investment projects on schedule

- New float lines for thin film solar glass
  - Equipment is being installed for the 2nd solar float line in Vietnam to start up in FY2020 H2
  - The ground breaking ceremony was held in April for the new solar float line in the US to start up in FY2021 H2
- New float line in Argentina, South America
  - The building construction is underway for the 2nd float line in Argentina to start up in FY2021 H1.



↑ Equipment installation in Vietnam



↑ Ground breaking in the US



↑ Building construction in Argentina

Growth Business

Development of Future Growth Opportunities

Acceleration of new product launches

- Enhancing marketing capability for growth
  - More customer-focused activities
- Reinforcing R&D
  - Increase and re-focus R&D
  - Resource allocation to BIC
- Acceleration of new product launches
  - Architectural Glass: environmental regulations to provide opportunities for ZEH and ZEB*, pursuing new opportunities for online-coated glass such as electrochromic applications
  - Automotive Glass: ADAS, HUD, EV opportunities
  - Technical Glass: battery separators for ISS*, hybrid cord, Metashine™
  - BIC: launch of PicoGene™



↑ Electrochromic glass
(Photo: View Dynamic Glass)

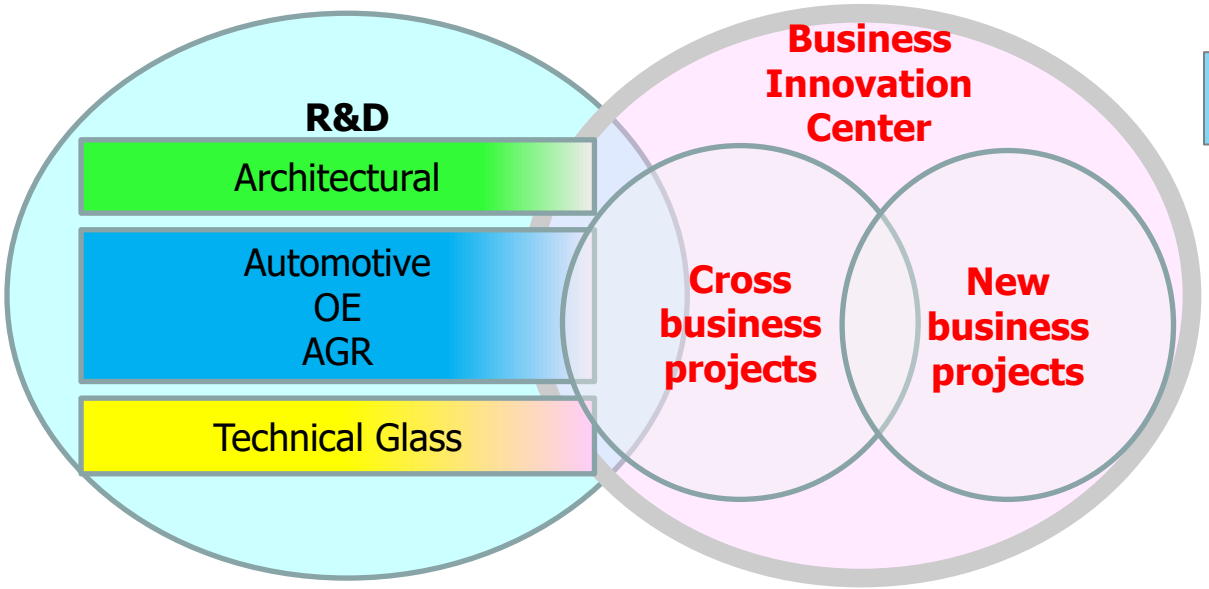
- ZEH/ZEB: Net Zero Energy House/ Building
- ISS: Idling Stop & Start

New Business

BIC Approach

BIC Mission

- Apply/commercialize NSG technology for new glass business
- Develop leading new business in growth markets
- Target global markets
- Change corporate culture of NSG



- Life Science
- IoT, Cloud
- Energy Management
- Industry 4.0

New Business

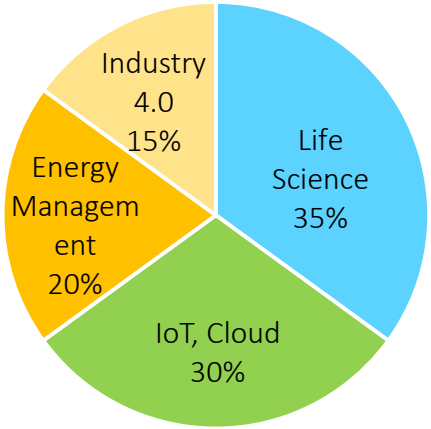
BIC Approach

New Business Development and Creation of Customer Value

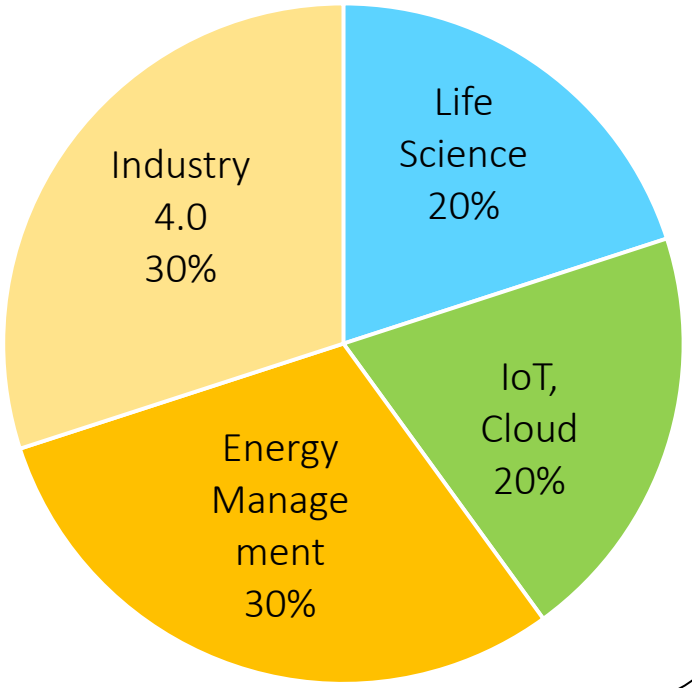
- BIC moving to Enhancement and execution phase

BIC Target

5 years later (around 2023)
Revenue: JPY20billion



10 years later (around 2027)
Revenue: JPY100billion



New Business

Life Science Applications – PicoGene™ for global markets

Sales launch announced on 10 April

- **Environmental Study**
- **Food Sanitation** Bacteria, virus
- **Water Analysis**
- **Research and Education**



Global health and environmental issues
- Secure safe drinking water
- Rising risks of infectious disease
- Changing ecosystem

Conventional PCR Issues
Though highly precise and useful…
- Only usable in specialized labs
- Long time required for testing

Mobile and rapid DNA testing system is needed

Enabling quick, high-precision DNA testing with handheld equipment

website : https://pcr-nsg.jp/

- **Compact**
- **Light-weight**
- **Quick**
- **Energy saving**
- **High-precision**

Summary

FY2019 Results

- Results in line with forecast, despite input cost rise and slowdown in automotive markets in Europe and North America later in the year
- Six years of profit growth achieved, with significantly improved profit attributable

FY2020 Assumptions

- Revenues: slightly above FY2019 with further improved VA sales
- Trading profit: impacted by input cost increases, limited pass-through due to market conditions
- Architectural: most affected by input cost increases
- Automotive: challenging market conditions expected
- Technical Glass: markets generally positive
- Net debt increase expected due to strategic investment projects

FY2020 Policy: Shift to VA + Growth

- MTP directions remain unchanged; for returning to profitability growth, the Group will continue to focus on what needs to be done to reform its businesses
- Profitability enhancement: VA shift acceleration and continuous efficiency and cost improvement
- Development of future growth opportunities: execution of strategic investment projects and new product sales expansion
- New business development: enhancement of BIC and R&D

Notice

The projections contained in this document are based on information currently available to us and certain assumptions that we consider to be reasonable. Hence the actual results may differ. The major factors that may affect the results are the economic and competitive environment in major markets, product supply and demand shifts, currency exchange and interest rate fluctuations, changes in supply of raw materials and fuel and changes and laws and regulations, but not limited.

Nippon Sheet Glass Company, Limited

Appendices

- FY2019 Annual Results
  - Revenue & Trading Profit - Business and Regions
  - Revenue & Trading Profit - Quarterly trend
  - Exceptional items
  - Consolidated Balance Sheet
  - Consolidated Cash Flow Summary
  - Depreciation & Amortization, CAPEX and R&D expenditures
  - Exchange rates & Oil prices
  - Argentina hyperinflation accounting

- Medium-term Plan (MTP) Phase 2
  - BIC Approach Area
  - News Releases (November 2018 to Apr 2019)

Revenue & Trading Profit
by Business & Regions

Revenue

JPY bn	Full-year (12 months) FY2018 *	FY2019	Change	4th Quarter (Jan - Mar: 3 months) FY2018 *	FY2019	Change
Architectural	**238.0**	**247.3**	**9.3**	**58.4**	**60.6**	**2.2**
Europe	93.8	96.0	2.2	23.5	23.3	(0.2)
Asia	86.2	92.9	6.7	21.3	23.1	1.8
Americas	58.0	58.4	0.4	13.6	14.2	0.6
Automotive	**311.4**	**314.7**	**3.3**	**83.1**	**79.7**	**(3.4)**
Europe	140.0	140.2	0.2	39.5	35.5	(4.0)
Asia	67.8	70.6	2.8	18.1	18.3	0.2
Americas	103.6	103.9	0.3	25.5	25.9	0.4
Technical Glass	**48.4**	**49.1**	**0.7**	**11.7**	**12.4**	**0.7**
Europe	7.9	8.1	0.2	2.2	2.3	0.1
Asia	39.2	39.5	0.3	9.1	9.7	0.6
Americas	1.3	1.5	0.2	0.4	0.4	0.0
Other	**1.1**	**1.7**	**0.6**	**0.4**	**0.7**	**0.3**
Total	**598.9**	**612.8**	**13.9**	**153.6**	**153.4**	**(0.2)**

Trading profit

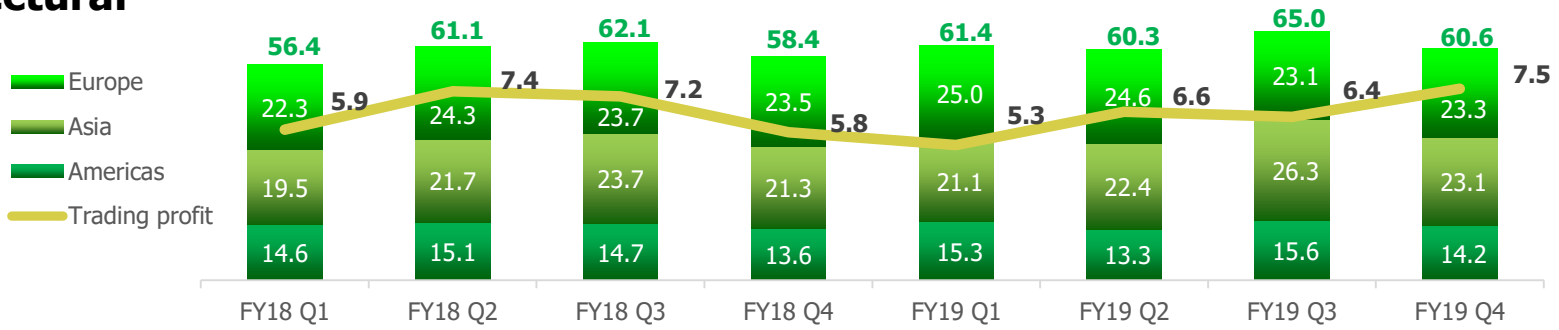
JPY bn	Full-year (12 months) FY2018 *	FY2019	Change	4th Quarter (Jan - Mar: 3 months) FY2018 *	FY2019	Change
Architectural	26.3	25.8	(0.5)	5.8	7.5	1.7
Automotive	14.2	15.1	0.9	6.6	6.0	(0.6)
Technical Glass	5.4	8.1	2.7	0.4	1.6	1.2
Other	(8.2)	(10.2)	(2.0)	(2.6)	(3.5)	(0.9)
Total	**37.7**	**38.8**	**1.1**	**10.2**	**11.6**	**1.4**
Europe	17.9	18.6	0.7	5.5	6.1	0.6
Asia	16.9	19.8	2.9	4.0	5.4	1.4
Americas	11.1	10.6	(0.5)	3.3	3.6	0.3
Other	(8.2)	(10.2)	(2.0)	(2.6)	(3.5)	(0.9)
Total	**37.7**	**38.8**	**1.1**	**10.2**	**11.6**	**1.4**

*: Restated due to adoption of IFRS 15 "Revenue from Contracts with Customers"

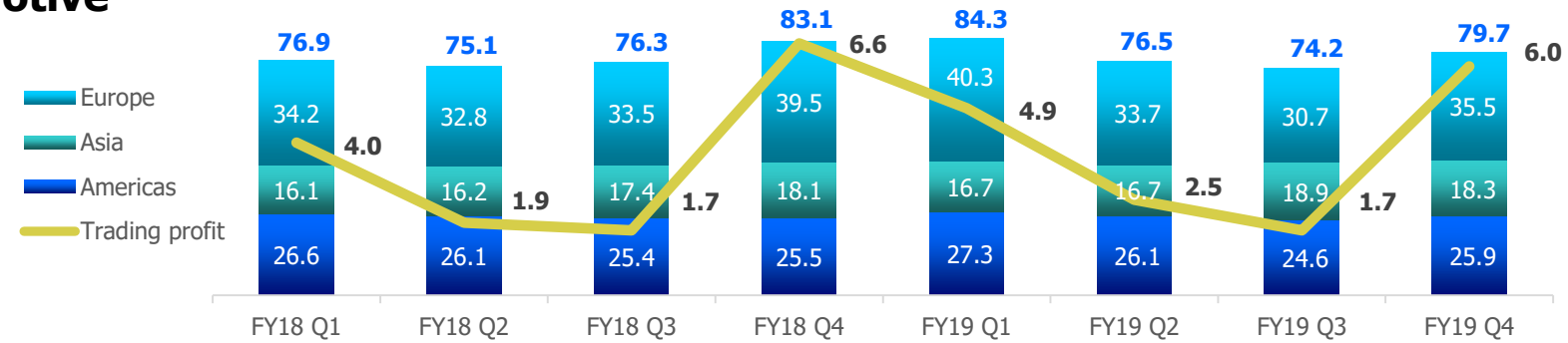
Revenue & Trading Profit

Quarterly trend

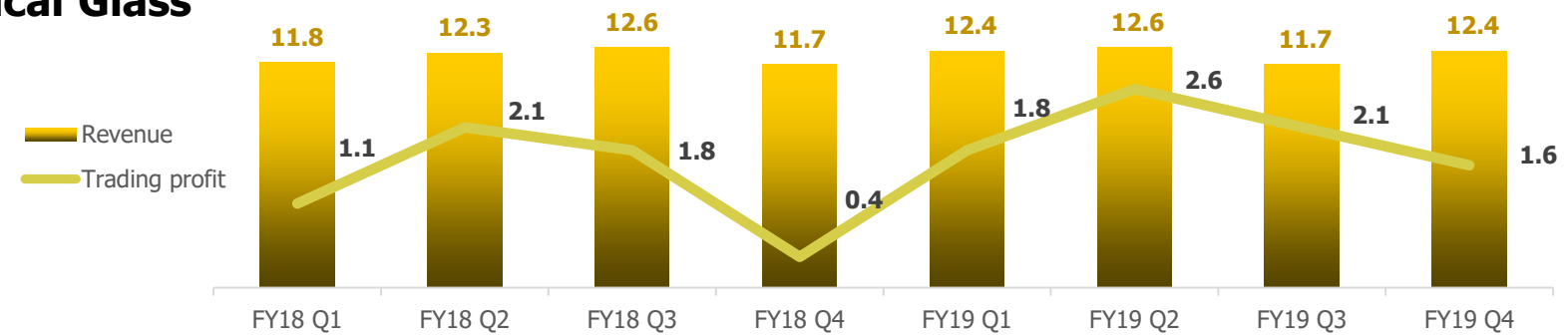
Architectural



Automotive



Technical Glass



Exceptional items

(JPY bn)	FY2018	FY2019
Reversal of impairment of non-current assets	0.1	**2.7**
Exchange gain on business closure	-	**0.7**
Reversal of impairment of investments in JVs	4.1	-
Gain on disposal of non-current assets	2.1	-
Gain on disposal of investments in JVs	1.5	-
Gain on settlement of insurance proceeds	1.0	-
Restructuring costs	(5.2)	**(4.4)**
Impairment of non-current assets	(0.5)	**(3.5)**
Retirement benefit obligations – past service cost	-	**(1.4)**
Suspension of facilities	(4.6)	**(1.0)**
Other items	0.2	**(0.2)**
	(1.3)	**(7.1)**

Consolidated Balance Sheet

JPY bn	31-Mar-18*	31-Mar-19	Change
Assets	**788.6**	**761.9**	**(26.7)**
Non-current assets	**530.8**	**516.3**	**(14.5)**
Goodwill & intangible assets	169.7	161.1	(8.6)
Property, plant and equipment	244.1	241.5	(2.6)
Other	117.0	113.7	(3.3)
Current assets	**257.8**	**245.6**	**(12.2)**
Cash & cash equivalents	64.8	52.4	(12.4)
Other	193.0	193.2	0.2
Liabilities	**644.9**	**629.4**	**(15.5)**
Current liabilities	**255.0**	**193.0**	**(62.0)**
Financial liabilities	97.6	42.2	(55.4)
Other	157.4	150.8	(6.6)
Non-current liabilities	**389.9**	**436.4**	**46.5**
Financial liabilities	275.1	329.3	54.2
Other	114.8	107.1	(7.7)
Equity	**143.7**	**132.5**	**(11.2)**
Shareholders' equity	135.2	123.8	(11.4)
Non-controlling interests	8.5	8.7	0.2
Total liabilities and equity	**788.6**	**761.9**	**(26.7)**

*: Restated due to adoption of IFRS15 "Revenue from Contracts with Customers"
[Assets] Pre-IFRS15: JPY 791.9bn - an adjustment of JPY (3.3)bn
[Equity] Pre-IFRS15: JPY 142.8bn - an adjustment of JPY +0.9bn

Consolidated Cash Flow Summary

JPY bn	FY2018*	FY2019	Change
Profit for the period	7.9	14.4	6.5
Taxation	4.6	8.4	3.8
Adjustment in respect of US tax rate change	9.6	-	(9.6)
Depreciation and amortization	29.4	27.9	(1.5)
Net impairment	(3.6)	1.9	5.5
Gain on disposal of assets	(4.0)	(0.2)	3.8
Exchange gain on business closure	-	(0.7)	(0.7)
Share of profit from joint ventures and associates	(2.4)	(6.2)	(3.8)
Tax paid	(5.8)	(5.4)	0.4
Others	(3.1)	(6.1)	(3.0)
Net operating cash flows before movement in working capital	**32.6**	**34.0**	**1.4**
Net change in working capital	2.1	(5.0)	(7.1)
Net cash flows from operating activities	**34.7**	**29.0**	**(5.7)**
Purchase of property, plant and equipment	(29.1)	(28.1)	1.0
Disposal proceeds	10.5	0.5	(10.0)
Others	0.7	(0.5)	(1.2)
Net cash flows from investing activities	**(17.9)**	**(28.1)**	**(10.2)**
Free cash flow	**16.8**	**0.9**	**(15.9)**

*: Restated due to adoption of IFRS15 "Revenue from Contracts with Customers"

Depreciation & Amortization, CAPEX and R&D expenditures

(JPY bn)	FY2018 Actual	FY2019 Actual	FY2020 Forecast
Depreciation and amortization	29.4	**27.9**	30.0
Capital expenditures (including intangibles)			
Ordinary	35.5	**27.1**	30.0
Strategic projects and other	-	**5.1**	60.0
Total	35.5	**32.2**	90.0
R&D expenditures			
Architectural	2.7	**2.6**	-
Automotive	2.8	**3.0**	-
Techincal Glass	2.0	**0.8**	-
Other	1.6	**3.0**	-
Total	9.1	**9.4**	10.0

Exchange rates & Oil prices

Average rates used

	FY2017	FY2018				FY2019				FY2020
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Forecast
GBP	142	142	144	146	147	149	147	146	**146**	**145**
EUR	119	122	126	128	130	131	130	129	**129**	**130**
USD	108	111	112	111	111	110	111	111	**111**	**110**
BRR	32.8	34.6	35.0	34.8	34.4	30.4	29.3	29.3	**29.4**	**28.0**
ARS	7.22	7.06	6.74	6.65	6.30	4.70	-	-	**-**	**-**

Closing rates used

	FY2017	FY2018				FY2019			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
GBP	139	146	151	152	150	145	148	141	**144**
EUR	119	128	132	136	132	128	132	127	**124**
USD	111	112	113	113	106	111	113	111	**111**
BRR	35.5	34.0	35.4	33.9	32.1	28.6	28.2	28.5	**28.3**
ARS	7.24	6.81	6.42	6.03	5.30	3.94	2.84	2.93	**2.53**

FX Sensitivity

Increase (decrease) if the value of the yen increases by 1% (all other things being equal):

(JPY bn)	FY2017	FY2018	FY2019
Equity	(3.5)	(3.5)	**(3.3)**
Profit for the period	(0.2)	(0.1)	**(0.2)**

Oil prices (Brent)

FY2020 Forecast **US$ 67 per barrel**

Argentina hyperinflation accounting

Treatments adopted from Q2 FY2019

- In accordance with IAS29 rules, hyperinflation accounting adopted for Argentina subsidiaries from Q2 FY2019
  - Property, plant and equipment, and related deferred taxation balances restated to measuring unit current as at latest balance sheet date
  - Hyperinflation adjustments applied to current year income statement and cash flow
  - Opportunity cost loss on monetary items recorded as a financial expense
  - Income statement and cash flows consolidated using closing rates of exchange

Financial impact at Q4 FY2019 (JPY bn)

<u>Consolidated income statement</u>	
Revenue	(1.7)
Operating profit	(0.6)
Profit after taxation	(1.6)
Attributable to:	
Non-controlling interest	(0.7)
Owners of the parent	(0.9)
<u>Consolidated balance sheet</u>	
Property, plant & equipment	3.8
Deferred tax liability	(0.9)
Total shareholders equity	1.7
Non-controlling interest	1.2
Total equity	2.9

BIC Approach Area: (1) Life Science Business

Focus on food/water safety, environment, academia

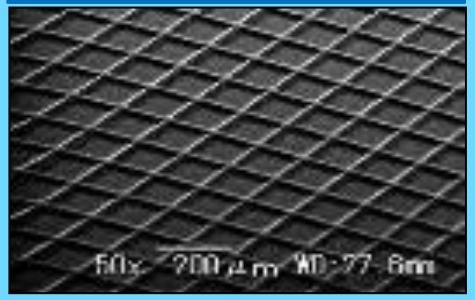
Mobile DNA detector



Disposable kit



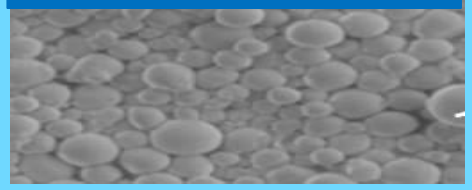
Fine glass processing



Chip with flow channel



Inorganic fine particle material



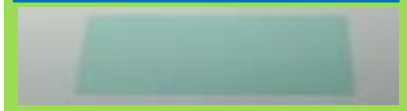
BIC Approach Area: (2) IoT, Cloud Business

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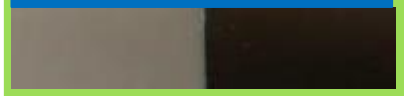
Focus on high-speed data transmission, sensors, filters

Enhance Image

IR-cut filter



Low-reflective nano material



Camera



Data Center



High-speed transmission 50･100G/ch

Micro lens array





Sensing

Distance measuring



5G



Optical waveguide



Nano material



Special glass



Light diffusion elements



Low dielectric board



High-frequency technology



Micro VIA board



BIC Approach Area:
(3) Energy Management Business

Improve conversion efficiency with functional material

New battery solution





High-efficiency motor solution



Ionic material



Super glass paper for separator



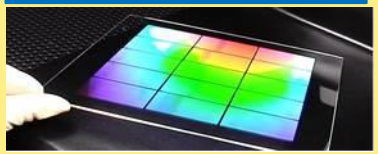
i-NAFLECS® porous fine glass particle



BIC Approach Area: (4) 'Industry 4.0'

Improve sensor capability with fine glass applications

Hologram



Nano glass composite



Drones



Super glass paper



Optical glass

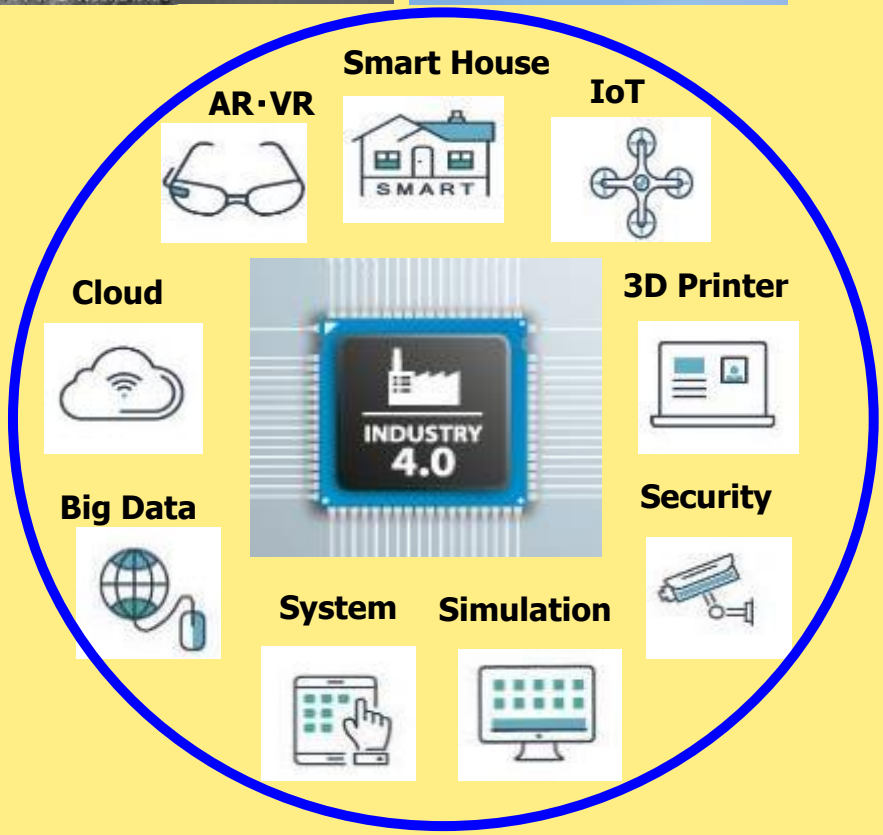


Optical transmitter



High density material





3D printer material



High-performance optical filter



News Releases — November 2018 to April 2019

1 Nov 2018	NSG Group Announces “Our Vision”
1 Nov 2018	Partial Acquisition and Retirement of Class A Shares
14 Nov 2018	NSG Received High Scores in the First Commitment Line Syndication based on ESG/SDGs Evaluation by SMBC
21 Nov 2018	NSG Receives ‘Gold’ CSR Rating from EcoVadis
8 Jan 2019	NSG Foundation for Materials Science and Engineering to Host 36th Research Presentation
30 Jan 2019	Sale of Shares in Nippon Sheet Glass Environment Amenity
12 Feb 2019	NSG Group Donates Spacia® Vacuum Glazing Glass to Ryugasaki City, Ibaraki Prefecture
28 Mar 2019	NSG Receives Japan’s first Environmental Product Declaration for Architectural Glass Products
29 Mar 2019	Display Division of Technical Glass Business Strategic Unit to be Renamed
10 April 2019	NSG Group to Drive New Business Development - Launches Mobile Real-time PCR Device -


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