Introduction to NSG

July 2020

Nippon Sheet Glass Co Ltd
TSE Code: 5202

Contents

I. NSG Group Today

NSG Group Today

One of the world's largest manufacturers of glass and glazing

- Supplying Architectural and Automotive glass globally and promoting shift to higher added value
- Leading supplier of Technical Glass products including thin glass for display etc., lenses for printers and scanners, specialty glass fiber products*1

Principal operations in approximately 30 countries around the world, with sales in over 100 countries

27 float lines worldwide*2 *3

Approximately 27,000 employees globally (as of March 2020)

Reference: Consolidated Revenue: JPY556.2bn (FY2020)

(*1): Refer to slide 26 for Technical Glass products

(*2): Refer to slide 47 for the float process

(*3): Refer to slide 8 for the location of float lines

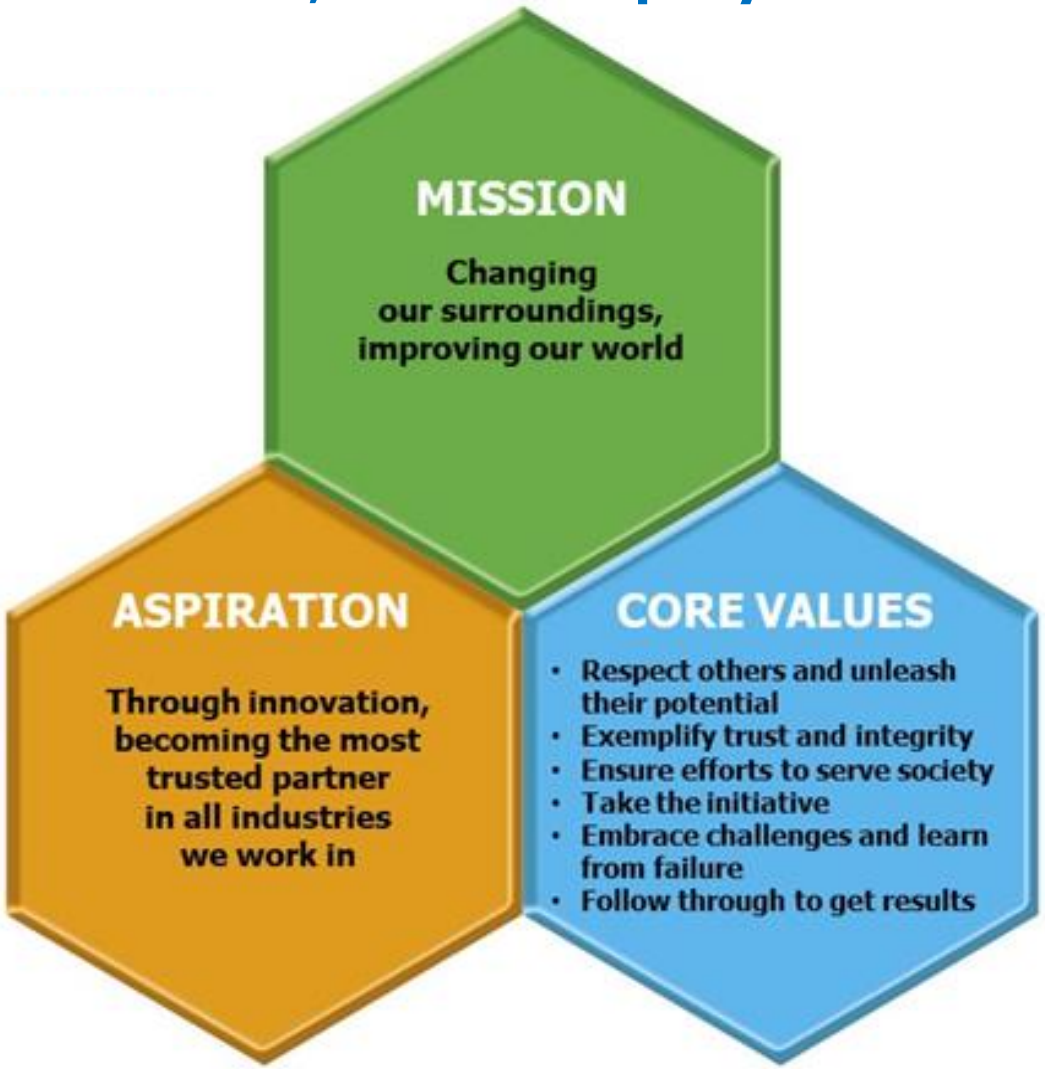
History

100-year history. Globalized with the acquisition of Pilkington in 2006

1918 - 1940s **Foundation & Expansion**	**1918: America Japan Sheet Glass Co Ltd established in Osaka** 1931: Company name changed to Nippon Sheet Glass Co Ltd 1935: Yokkaichi site opened
1950s - 1960s **Capacity Expansion and Start of Automotive Glass**	1950: Listing on stock exchanges in Japan 1951/63: Maizuru / Chiba sites opened 1965: First float glass production in Asia at Maizuru site
1970s - 1990s **Overseas Expansion & Diversification**	1971: First overseas investment made in Malaysia 1978/79: Ultra Fine Float™ / glass fiber business launched 1995: Overseas investment expanded including China and Vietnam
2000s **Acquisition of Pilkington & Globalization**	2004: Headquarters moved from Osaka to Tokyo **2006: Acquisition of Pilkington, becoming global leader in flat glass** 2008: "Company with committees" governance adopted
Shift to VA (value-adding)	May 2014: Announcement of Long-term Strategic Vision & Medium-term Plan Apr 2017: Medium-term Plan (MTP) Phase 2 started Nov 2018: Announcement of "Our Vision"

Management Principles — "Our Vision"

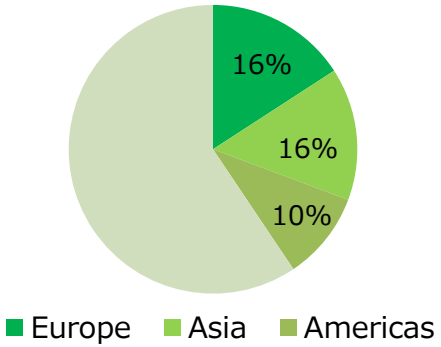
Announced in November 2018, at the Company's 100th Anniversary



Businesses

Global Three Businesses: Architectural, Automotive, and Technical Glass

Architectural: 42%

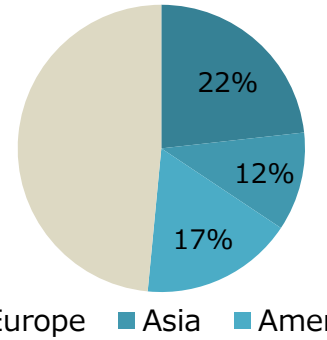


Products:
- Building glass & glazing
- Glass for solar panels

Business:
- 27 float lines operated globally
- Leading supplier for thin film solar panels

Granroof at Tokyo Station

Automotive: 51%

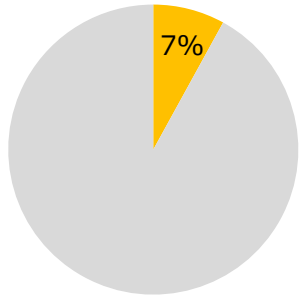


Products:
- Glazing for new vehicles
- Glazing for replacement markets

Business:
- Key operations in 14 countries
- Supplying world's leading vehicle manufacturers
- Key player globally in automotive aftermarket (AGR) glazing distribution and wholesale

Complex-shaped back light
Courtesy of TOYOTA Global Newsroom

Technical Glass: 7%

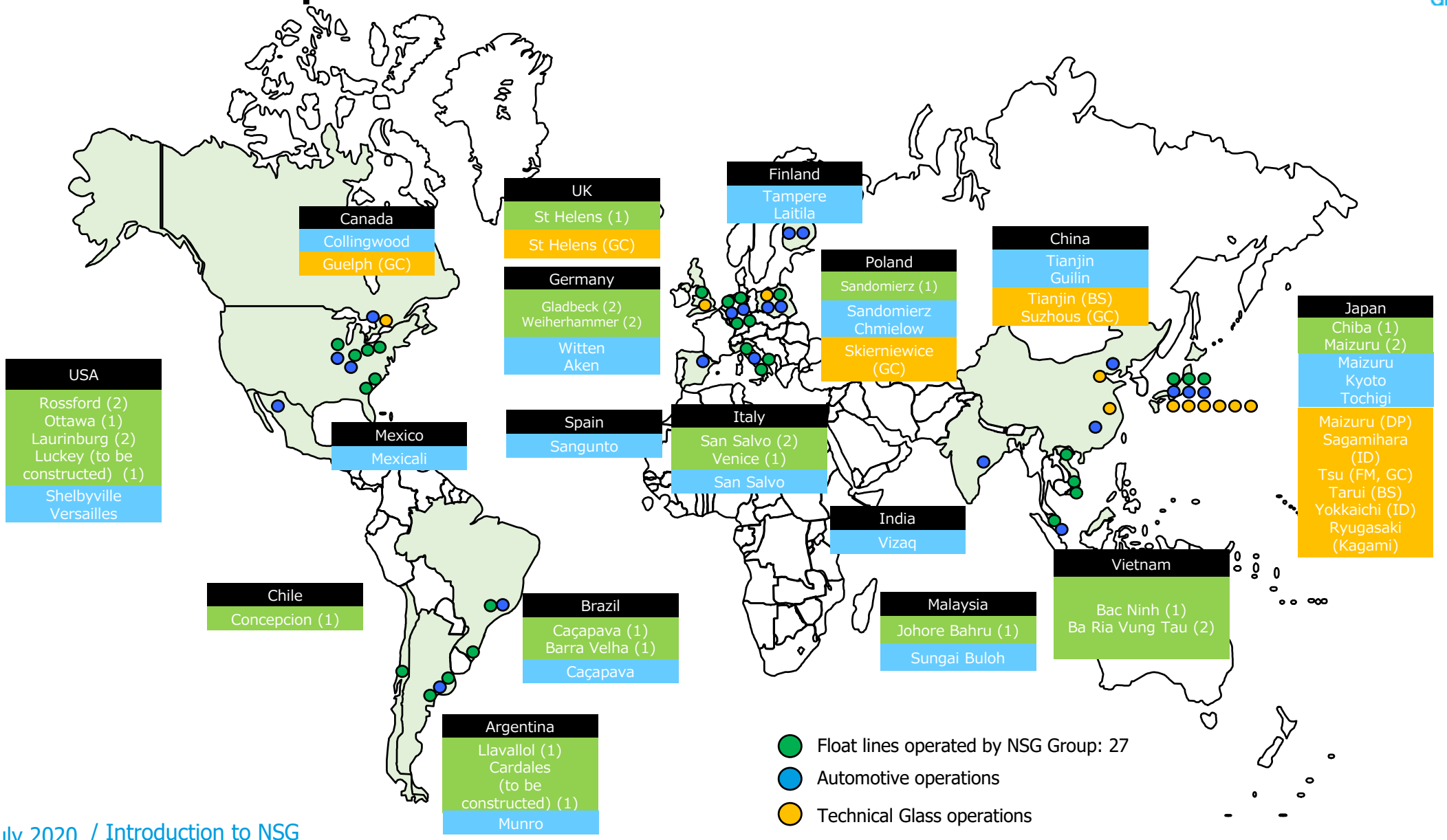


Products:
- Thin glass for display etc.
- Lenses for printers and light guide
- Special glass fiber such as battery separators, glass code for car engine timing belt, etc.

Business:
- Key operations in Asia and Europe
- Unique 'Number One' and 'Only One' niche products

Super Glass Paper™

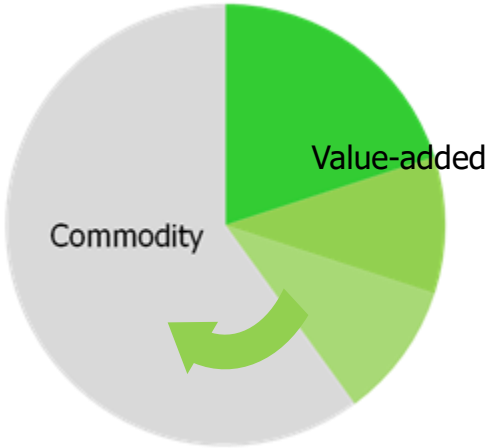
Global Footprint



II. Long-term Strategic Vision & Management Policy

Long-term Strategic Vision

Announced in May 2014



Long-term Strategic Vision:

Transform into 'VA Glass Company'

Strategic Intent

- Transform the whole Group structure into "VA-ready" while increasing the VA ratio in the Group's sales

Objectives

- Consolidate our trusted reputation as a glass specialist
- Work closely with customers worldwide to offer unique value through our products and services
- Transform business structure from a traditional model to a value-added model

* VA: Value-added

Long-term Strategic Vision & New MTP

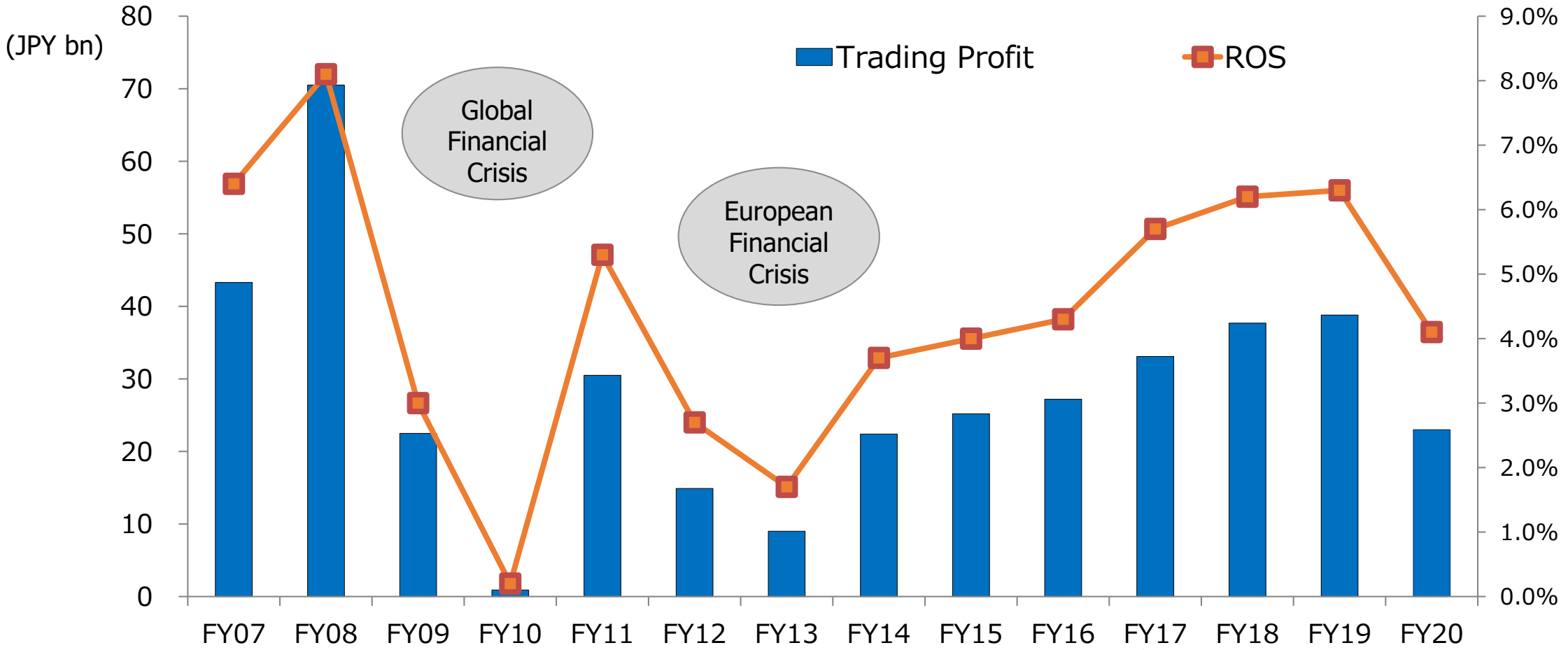
New plan to be announced after the impact of COVID-19 is reasonably quantified

Long-term Strategic Vision

MTP		New Management Plan
MTP Targets ➢ **Financial sustainability** ➢ **Transform into VA Glass Company** Financial Targets - Net debt/EBITDA: 3x - ROS > 8%	Phase 2 Measures Growth Measures • Drive VA No.1 Strategy • Establish growth drivers • Business culture innovation • Enhance global management Financial Measures • Enhance equity • Reduce net debt • Issue Class A Shares	• New medium-term management plan to be announced after the impact of COVID-19 is reasonably quantified.
FY2015 - FY2017	Phase 2 FY2018 - FY2020	FY2021 -

Trading Profit & ROS

FY2020 results were affected by challenging trading conditions, as well as a significant impact of COVID-19 in Q4



ROS (Return on Sales)
: based on trading profit (profit before amortization of non-tangible assets)

KPI Update

Although profits had been steadily improving until FY2019, the Group experienced difficult trading conditions in FY2020

MTP Phase 2

Financial KPI	FY2017	FY2018	FY2019	FY2020
ROS	5.7%	6.2%	6.3%	4.1%
Net Debt/ EBITDA	5.0x	4.8x	4.9x	> 7.1x

[Reference]

Equity Ratio	15.7%	17.1%	16.2%	9.6%
ROE	4.9%	4.7%	10.3%	(19.2)%
VA Sales Ratio	41%	44%	46%	46%

Shift to "VA + Growth"

While affected by market, actions are being taken aiming to return to profit growth

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

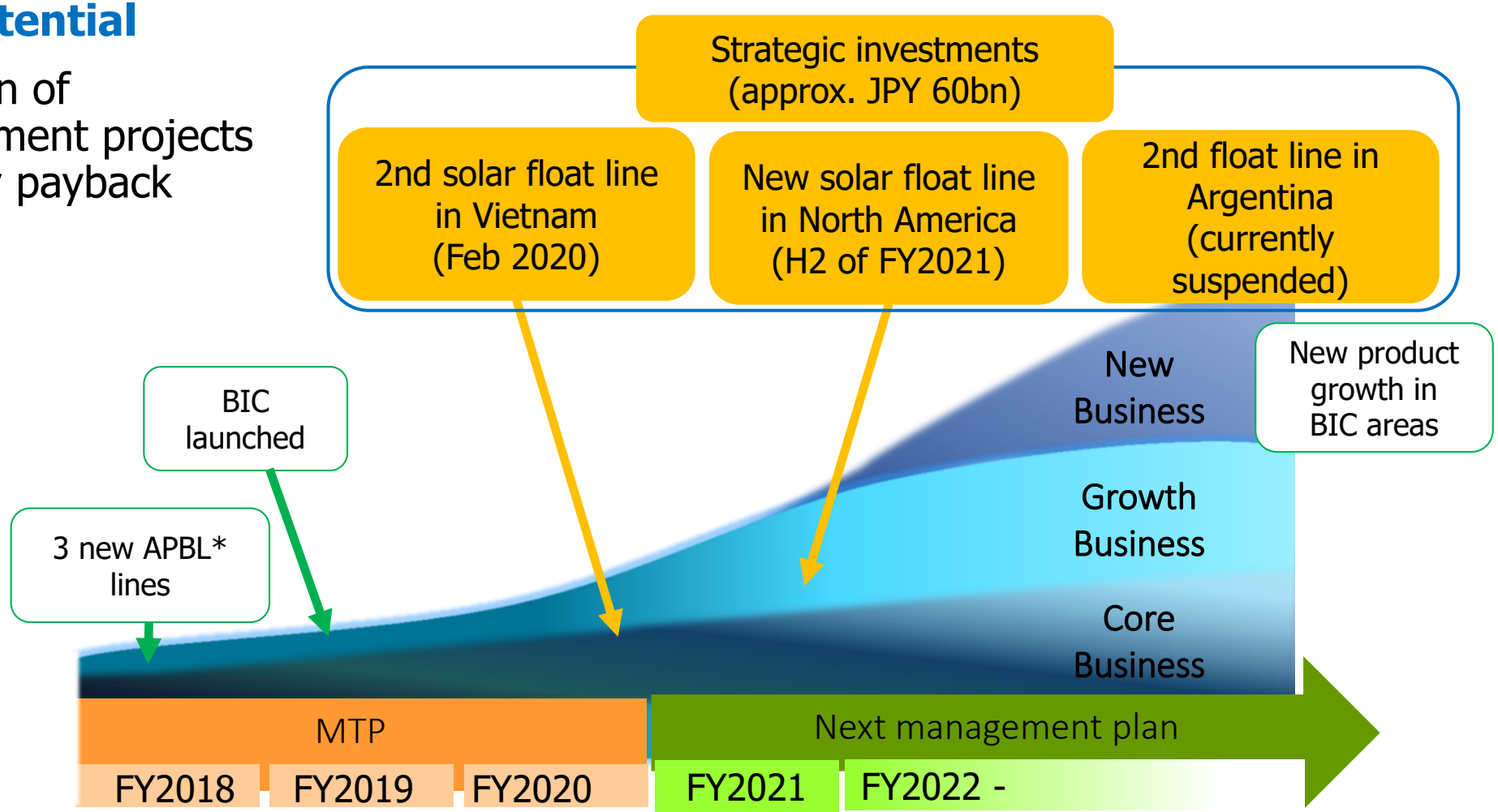
New Business Development

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

Investments for Growth

Focused actions in the areas of strengths or high growth potential

- Sound execution of strategic investment projects aiming for early payback



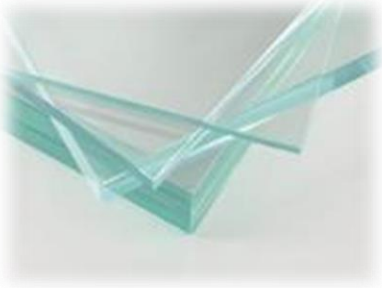
* APBL： Advanced Press Bending for Laminated

III. Our Business

Architectural Glass

Value creation based on energy saving & generation, health & safety, design & visibility

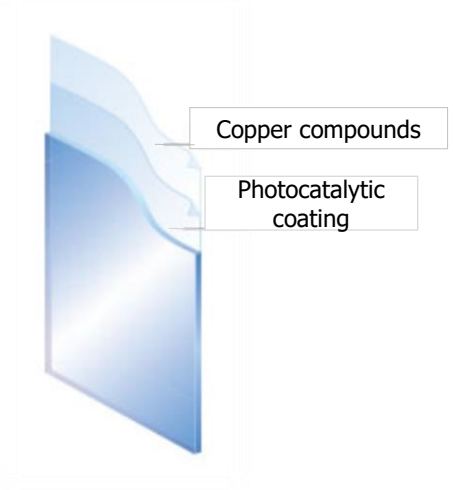
↑ Glass for thin film Solar panels
Courtesy of First Solar Inc.



↑ Optiwhite™
(High transmission glass)

↑ Conventional glass

↑ Glass for electrochromic applications
Courtesy of View Inc.



↑ Anti-virus glass

↑ Low-e coated glass

↑ MirroView™
(High reflection glass)

↑ Optiwhite™ used for
Midtown Hibiya in Tokyo

↑ Spacia™
(Vacuum glazing)

Architectural

Strategic Investment – Solar Energy Glass

Planned total capital expenditure is JPY38bn. Construction progressing on schedule

- Solar demand remains robust with increasing shift to renewable energy
- Supplying value-added glass for thin-film solar panels

2nd float line in Vietnam

- Start up: February 2020
- Site: Ba Ria Vung Tau (near Ho Chi Minh)
- Conversion of suspended float line

New float line in the US

- Planed start up: FY2021 H2
- Site: Luckey, Ohio
- Greenfield

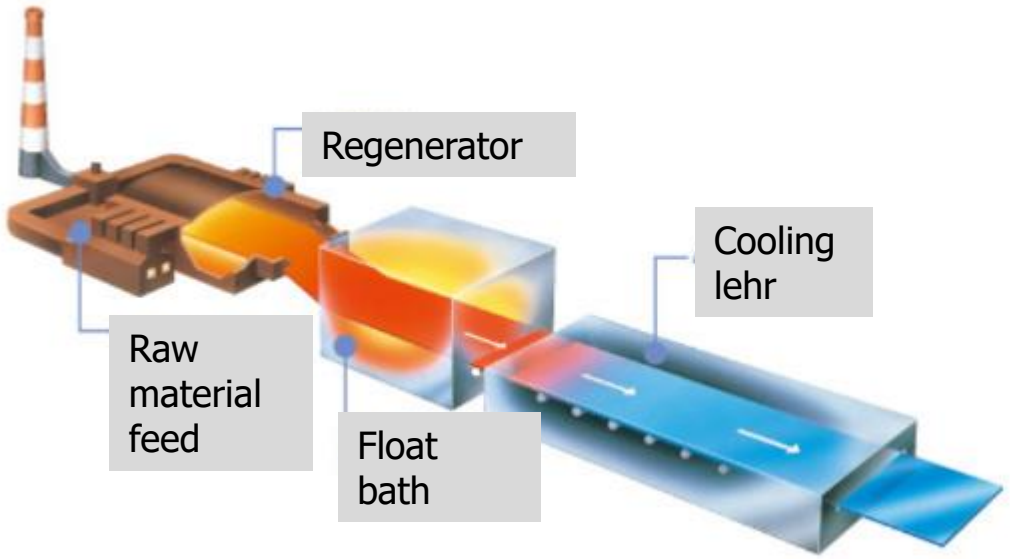
Architectural

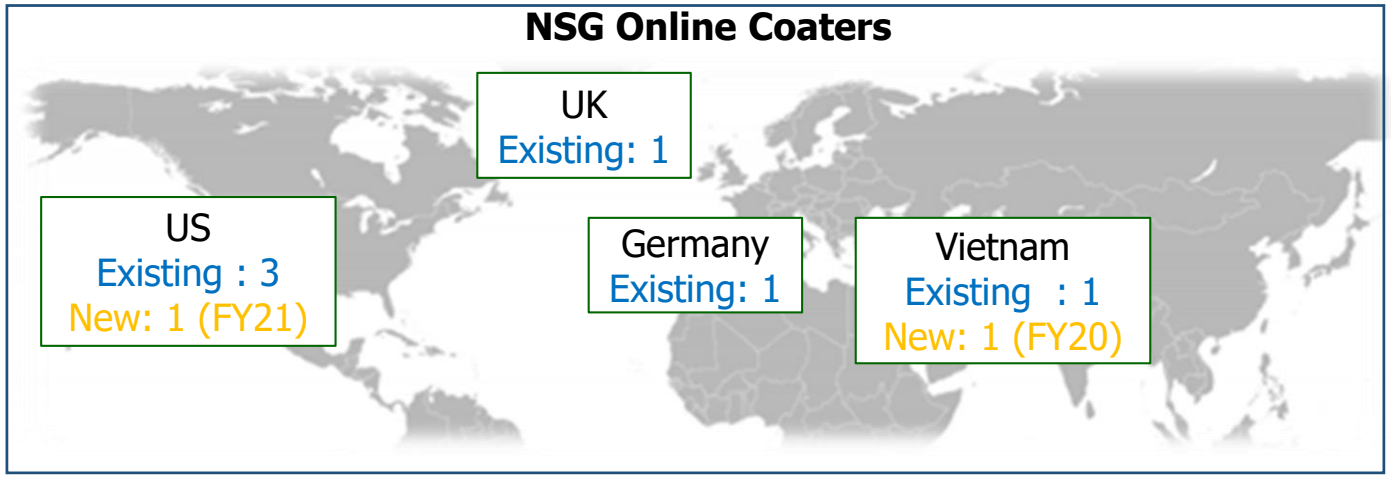
Growth of Online-coated Products

Proprietary online coating technology to support VA

- NSG's proprietary technology
- Thin, uniform metallic oxide film deposited over glass while being formed inside the float bath
  - Cost competitive, available in large size
  - Durable and versatile, suitable for further processing and various applications

Function	Use
Conductivity	Heating glass
	Transparent conductive film for touch panels
	Transparent conductive film for thin film solar panels
Infrared reflection	Heat insulation glass
	Heat blocking glass
	Low e glass





Architectural

Strategic Investment – South America

Investing in new float line in Argentina, leveraging 80 years of business experience and solid market position in South America (Currently suspended)

- VASA is the only flat glass manufacturer with 8 decades of experience in Argentina
- Solid market position and customer base. Stable business management, adept at managing country-specific risks
- Suspend capital investment due to COVID-19

Summary

- Investment: USD200 m
- Facility: 2nd float line for Vidrieria Argentina SA (VASA*) (capacity: 900 ton/day)
  * A subsidiary in Argentina, jointly held with Saint-Gobain (NSG: 51%; Saint-Gobain: 49%)
- Site: Cardales (near Buenos Aires)
- Start-up: not yet confirmed
- Market: Argentina and neighboring countries

Automotive Glass

Value creation along with advanced automotive technologies

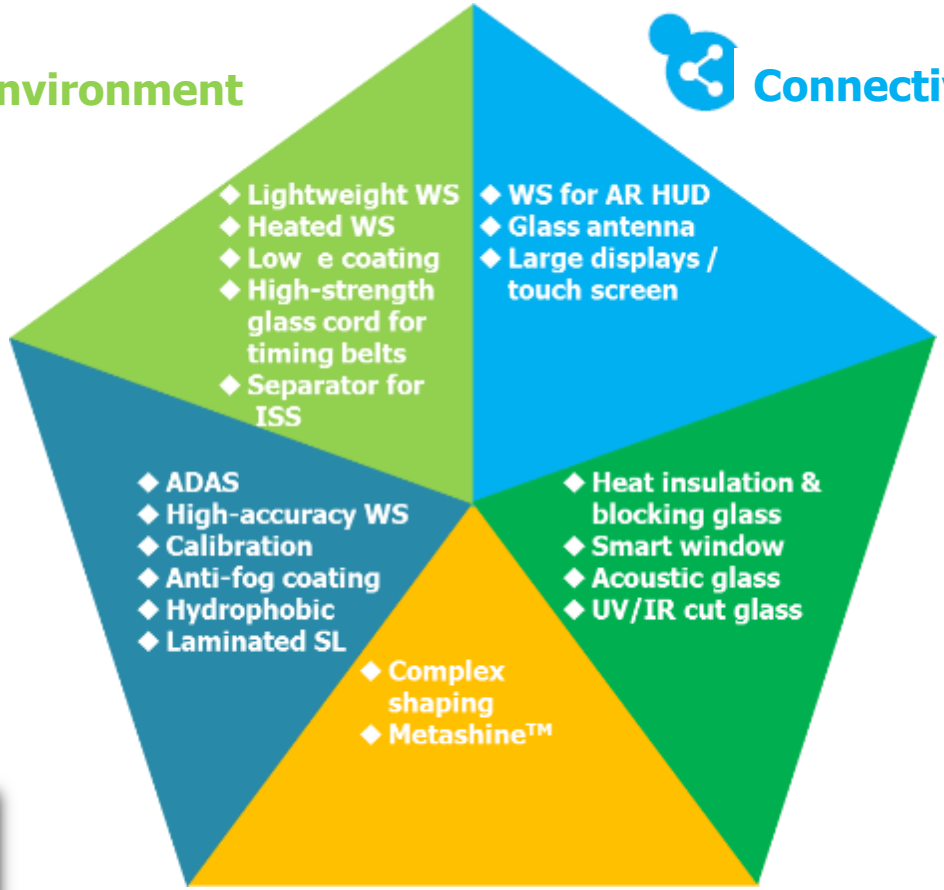
NSG GROUP

Environment

- Lightweight
- Fuel efficiency
- Heat insulation & blocking
- Electric vehicle

Safety & Security

- Autonomous driving
- Visibility
- High rigidity



Style

- Streamline design
- Exterior

Connectivity

- Augmented reality head up display (AR HUD)
- Internet of Things (IoT)

Comfort & Convenience

- Heat insulation & blocking
- Ambient lighting
- Acoustic
- UV/IR cut

Courtesy of Mazda Motor Corporation CO. Ltd.

WS: Windshield; ISS: Idling stop & start; SL: Side light
ADAS: Advanced driving assistance system

Automotive

CASE-Aligned VA Products for Growth

More VA awards in pipeline to improve business performance, leveraging the Group's technical strengths

Environment

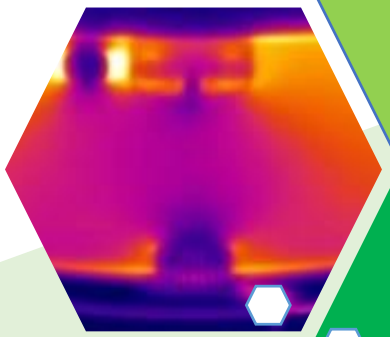
Connectivity

Safety & Security

Comfort & Convenience

style

Low-E Rooflights Europe EV growth



Heated WS coating, no wire

Premium HUD large HUD AR/VR

Light weight WS premium sports vehicles

Thin glass for interior thin glass for car-mounted display with FG technology

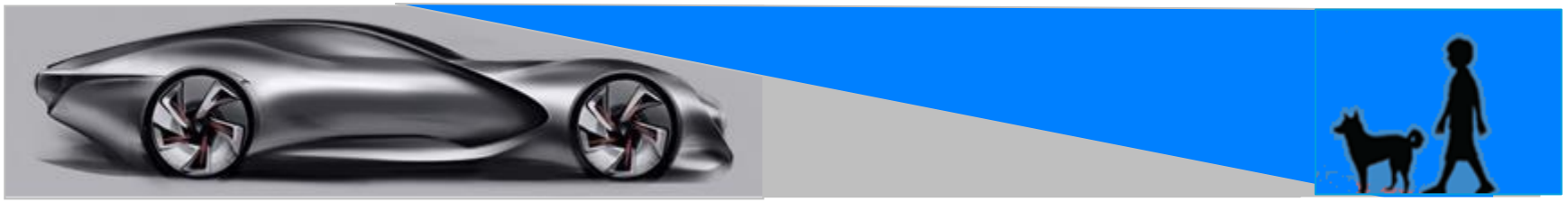
Next-gen antennas anticipating shift to 5G

Automotive

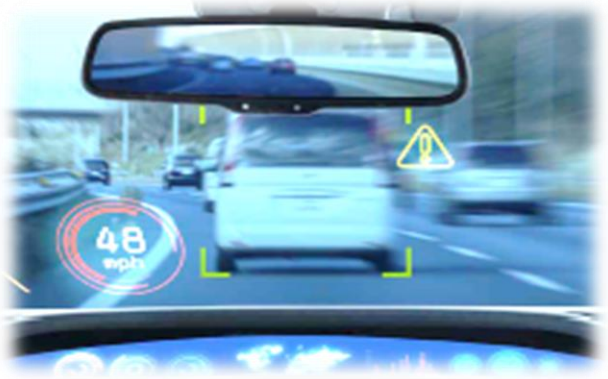
High-precision Glass for ADAS & HUD

Increased demand for precision-shaped windshield

- Many of ADAS features rely on cameras mounted to windshields
- High precision windshields required for proper sensing (OE and AGR)



- Adopted for LEXUS LS windshield with a largest HUD and a pickup truck of GM (GMC Sierra)



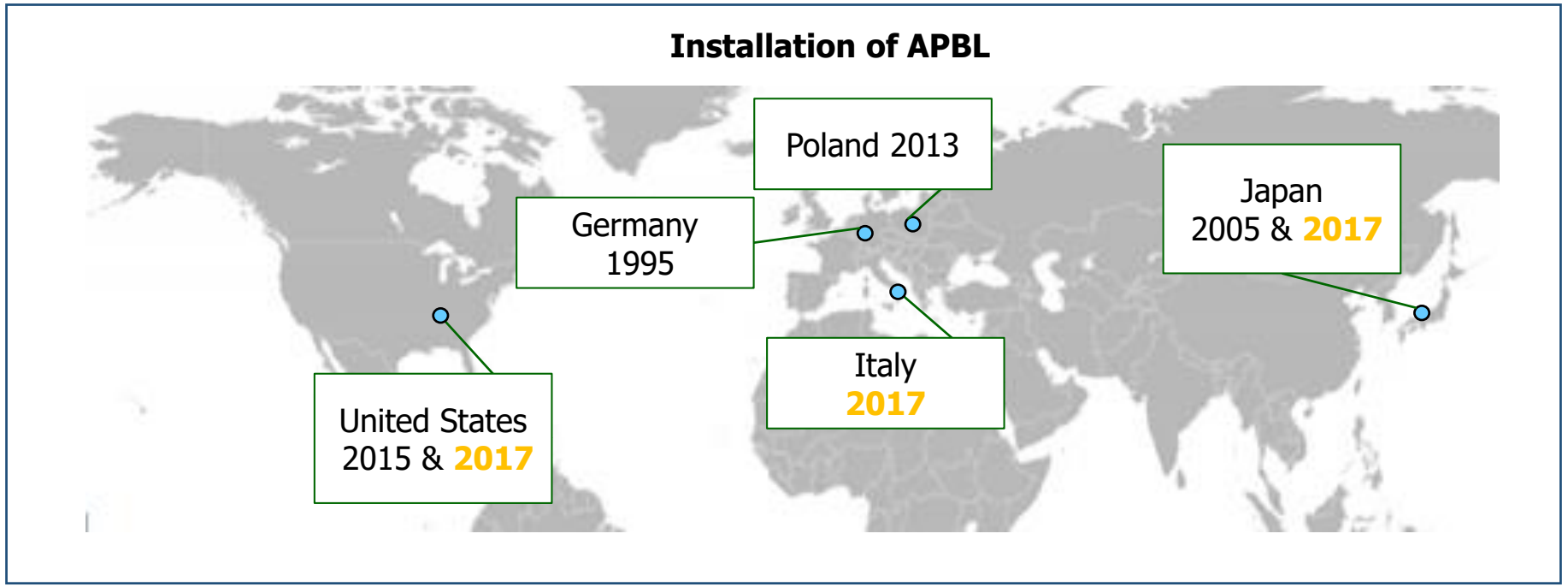
Courtesy of TOYOTA Global Newsroom

Automotive

Respond to Automotive Innovation

Global footprint of press bending equipment for high-precision windshields

- With the advancement of automotive technology such as ADAS and HUD, highly accurate front glass molding that needs increase
- New lines of APBL* started in Japan, Europe and the US in 2017.
- Developed inhouse, and started production in Germany in 1995, ahead of competitors



* APBL: Advanced press bending for laminated glass

Automotive

Value Provided for AGR

Working from wholesale to retail business, providing value to our customers

- Availability & product range
- Well-established wholesale network
- Customer focused services

ADAS calibration
- Impact of ADAS enabled us to offer new services

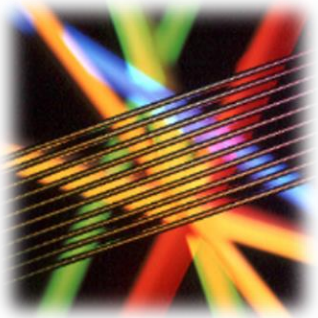
- Opportunity
- ✓ ADAS systems often require calibration of the cameras after windshield replacement
- Our Business
- ✓ Opti-Aim™ developed to support our customers in the US
- ✓ Training services for ADAS calibration are offered in South America

By OE Tech
Opti-Aim™
Your Calibration Tool

Technical Glass

Unique products and new business opportunities

↑Thin glass; glanova™



↑ SELFOC ™ Lens Array

↑ Super Glass Paper

↑ Glass cord

↑ PE separators

↑ AGM separator

↑ Metashine™

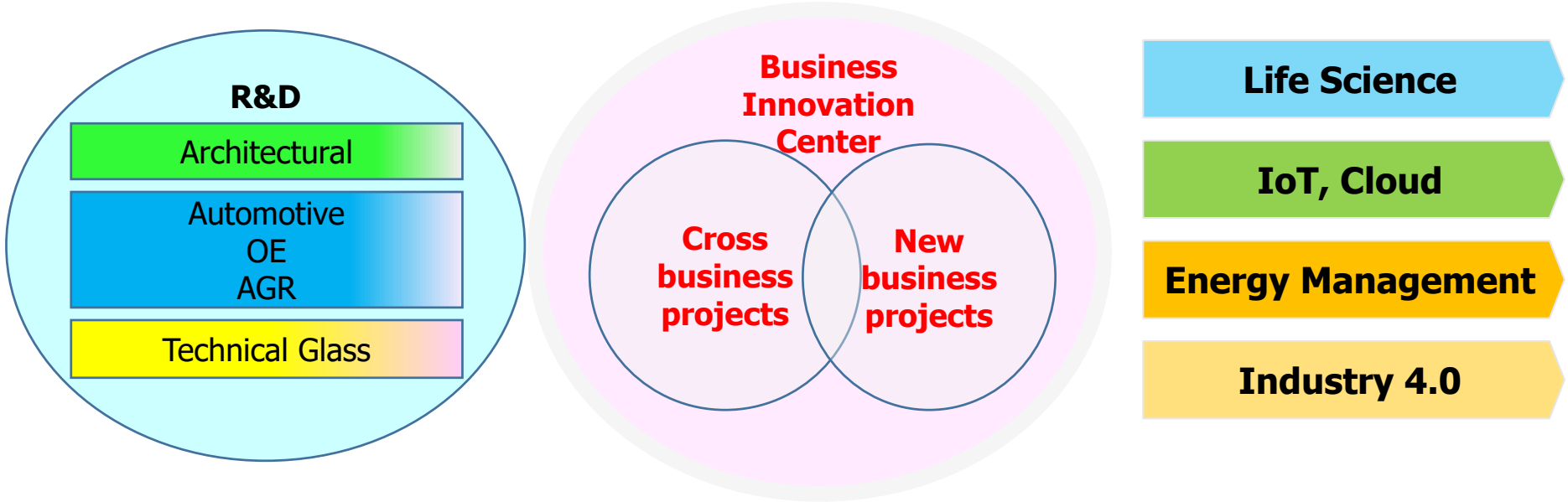
↑ Glassflake

BIC

New Business Development and Creation of Customer Value

Business Innovation Center (BIC) was established in July 2018

- Organization tasked to lead the Group's growth strategy, in developing new businesses customized for needs of different regions and markets
- External talent, Satoshi Ishino, Chief Development Officer, brought in to lead the organization, with the relevant new business experience



BIC

Life Science Applications

PicoGene™ for global markets; sales launched in Japan in April 2019

- **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

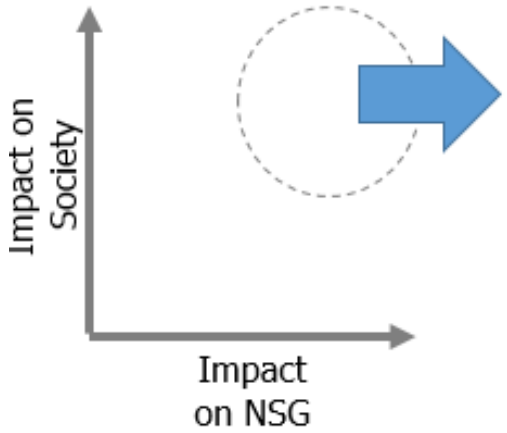
Enabling quick, high-precision DNA testing with handheld equipment

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

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

IV. ESG* for Creating Value

New Materiality



Ethics and Compliance	Carry off significant trust from stakeholders by constant address on Ethics and Compliance
Society Shift and Innovation	Identify significant challenges to society and providing technology/product/service to their solution in a timely fashion
Environment	Target Carbon Neutral by 2050 with GHG emissions reduction by eco-friendly manufacturing process and sales expansion of eco-friendly products
Safe and High-Quality Products and Services	Enhance both the products and service quality through improvement of quality and supply chain control
Human Capital	Ensure sustainable growth of the Group and contribute employees' welfare through a variety of initiatives to enhance developing Change Leaders at global level, safety, health, and Inclusion and Diversity

* ESG: Environment, Social, Governance

Sustainability Targets & Progress

Quantitative targets and KPIs set based on identified materiality

	FY2018/19 Progress	FY2020 Targets
Safety	• 3% yoy worsening in FY2019 with no fatalities	• Reduce Significant Injury Rate by 10% with no fatalities
Waste	• Exceeded target in FY201 with 11.3kt (37%) reduction	• Reduce waste to landfill by 12kt (40% reduction vs FY2014)
Energy & CO2 reduction	• Achieved 1% reduction	• 1% yoy reduction in Co2 intensity across glass manufacturing operation
Sustainable VA products	• 46% in FY2019	• Increase VA sales ratio to >50% • Demonstrate environmental and social benefit of products
Responsible sourcing & transportation	• 75% of key suppliers have agreed to SCoC	• 10% yoy increase in Supplier Code of Conduct acceptance by key suppliers etc.
Employees	• Overall engagement score declined yoy • I&D manager training progressing	• Improve NSG engagement score by 5pts etc. • Increase inclusion & diversity awareness by training managers
Ethics & compliance	• Regional structure adopted for E&C organization	• Reissue governance and culture leadership assessment

NSG Group Integrated Report: http://www.nsg.com/en/investors/ir-library/annual-reports

G: Corporate Governance

Framework to bolster sustainable growth

Diversity & independence of Board of Directors – material decision making and supervision of executives, representing shareholders

- Clear separation of roles between Board chairman and CEO; robust succession plan
- Adequate pay incentives aligned with interests of shareholders

Key developments

2008: "Company with Committees"; 4 Independent External Directors
2012: All 3 Committees chaired by Independent External Director
2013: The Board chaired by Independent External Director
2014: Share purchase element in LTIP; shareholding targets for EOs
2015: Publication of NSG Group Corporate Governance Guidelines
2016: 1st Effectiveness Evaluation; compliance with all the principles of CGC
2019: Independent External Directors constituting the majority of the Board.

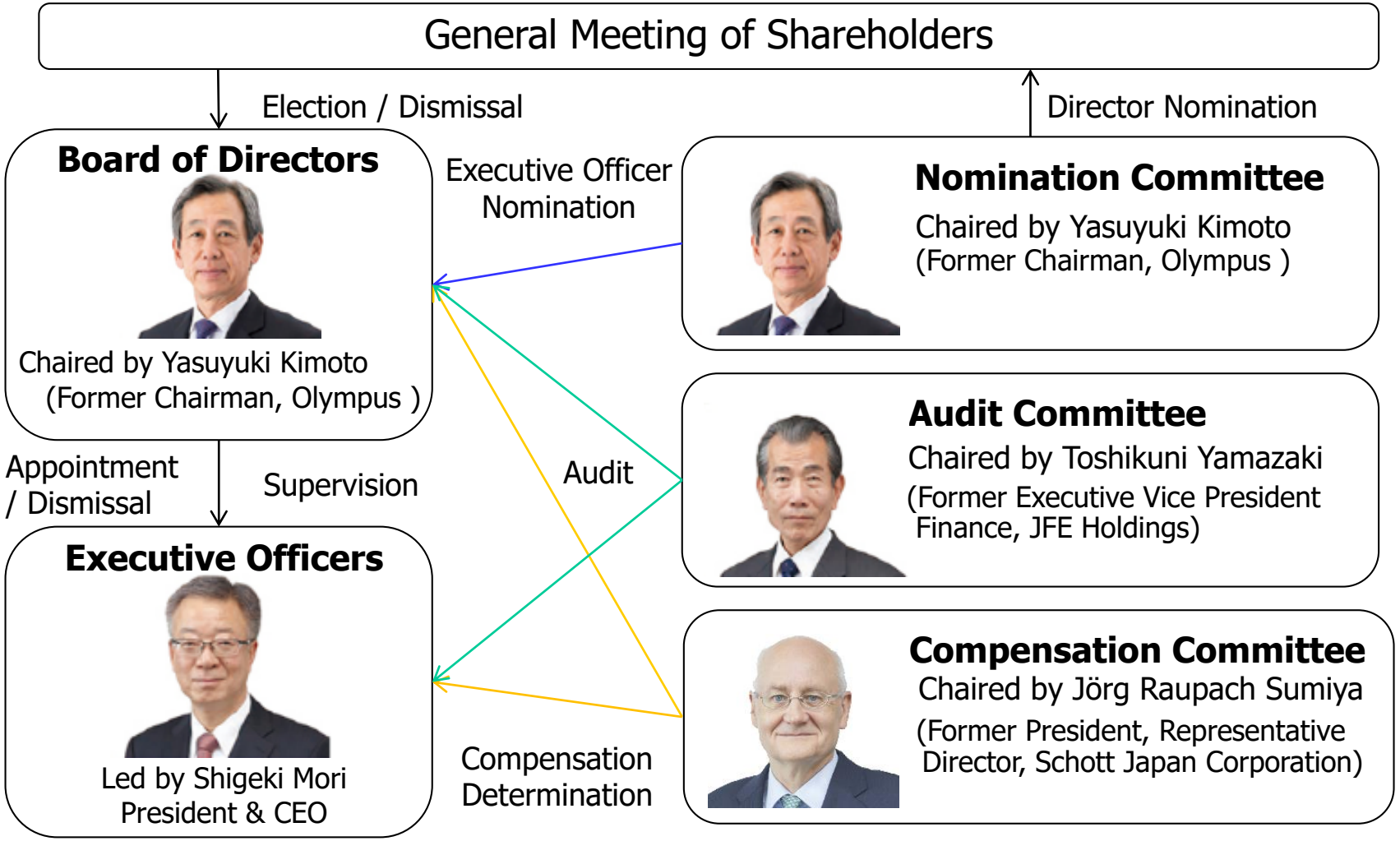
Board Effectiveness Evaluation

Led by Independent External Directors; the following action plans have been set and followed up

- Deeper discussion on key agenda items such as growth, finance, HR and ESG strategies
- More understanding of executive resources and stronger monitoring to improve performance
- Thorough following-up of the executives' execution and delivery of key decisions and tasks
- Promotion of diversity including appointment of non-Japanese and/or female director(s)

G: Corporate Governance

The Board & Committees all chaired by Independent External Director



G: Board of Directors

Robust governance with a majority of the Board of Directors being independent

Yasuyuki Kimoto
Independent External Director
Chairman of the Board

Toshikuni Yamazaki
Independent External Director

Jörg Raupach Sumiya
Independent External Director

Hiroshi Ishino
Independent External Director

Kunihito Minakawa
Independent External Director

Yoshihiro Kuroi
External Director

Shigeki Mori
Director
President
Chief Executive Officer

Clemens Miller
Director
Executive Vice President
Chief Operating Officer

Kenichi Morooka
Director
Executive Vice President
Chief Administration Officer
Chief Risk Officer

Nomination Committee	Audit Committee	Compensation Committee
Yasuyuki Kimoto (Chairperson) Toshikuni Yamazaki; Jörg Raupach Sumiya; Hiroshi Ishino; Kunihito Minakawa; and Shigeki Mori	**Toshikuni Yamazaki (Chairperson)** Yasuyuki Kimoto; Jörg Raupach Sumiya; Hiroshi Ishino and Kunihito Minakawa	**Jörg Raupach Sumiya (Chairperson)** Yasuyuki Kimoto; Toshikuni Yamazaki; Hiroshi Ishinoi; Kunihito Minakawa and Shigeki Mori

G: Executive Officers

International executive team

Representative Executive Officers

Shigeki Mori
Director
President
Chief Executive Officer

Clemens Miller
Director
Executive Vice President
Chief Operating Officer

Kenichi Morooka
Director
Executive Vice President
Chief Administration Officer
Chief Risk Officer

Senior Executive Officers

Tony Fradgley
Head of Automotive AGR
and Head of Automotive OE

Koichi Hiyoshi
Chief Legal Officer and
Company Secretary

Satoshi Ishino
Chief Development Officer
Head of Business Innovation
Centre

Reiko Kusunose
Chief Financial Officer

Hiroshi Nishikawa
Head of Technical Glass

Jochen Settelmayer
Head of Architectural Glass

Phil Wilkinson
Global Head of Automotive AGR

Executive Officers

- **Tim Bolas** (Finance Director – Operations)
- **Mike Greenall** (Chief Technology Officer)
- **Shiro Kobayashi** (Head of Group Sustainability)
- **John Mercer** (Chief Procurement Officer)
- **Yutaka Nakashima** (Chief Human Resources Officer)
- **Iain Smith** (Finance Director – Global Finance)
- **Milena Stanisci** (Head of Manufacturing Excellence and Head of Manufacturing, Automotive OE)

G: Long-Term Incentive Plan (LTIP)

Senior management incentive plan designed to enhance shareholders' value

Plan: Long-term incentive scheme over a three business-year period

- Aiming for alignment with interest of shareholders by factoring up or down according to the share price movement during the three-year period and by requiring to invest 50% of proceeds to purchase shares

Subject: Senior management including Executive Officers

Performance measures: Key long-term financial targets for the Group are chosen

- Plan stated in FY2016: aggregate earnings per share
  - 51% paid against the maximum LTIP payment (Target: JPY364.6; Actual: JPY339.7)
- Plans started in FY2017 and FY2018: aggregate earnings per share
- Plans started in FY2019 and FY2020: aggregate earnings per share and return on sales (ROS)

- **Shareholding**: 50% proceeds required to purchase ordinary shares (from the plan started in FY2015*1)
  - Incentivize to increase shareholder value as shareholder and alignment with shareholders' interest
  - Shareholding targets over a period of time; annual assessment of progress
- **Malus and Clawback clauses are incorporated in all LTPs**
  - Exercisable by NSG if one of listed triggering events occurs
  - Triggering events include: a misstatement of financial results which are the basis of incentive payments; serious illegal act; and material breach of the Group Code of Ethics.

*1: The first payment was made based on the plan started in FY2016, as no payment was made for one started in FY2015.

E: Reducing CO2 Emission

Manufacturing process improvement aiming for mitigating business risk

In addition to environmental contributions from NSG products, work is underway to reduce GHG emission from manufacturing processes

SBT Initiative targets approved in October 2019

- 21% reduction by 2030 vs 2018
- Fuel energy conversion, manufacturing process, increased usage of renewable energy (e.g. solar installation at a UK site)

Green Energy
In Europe, contract in place to switch 50 percent of electricity to green energy

Solar Energy
PV panels installed or planned at Lathom (UK), Northwood (US) and other Group sites

*ESG: Environment, Social and Governance

Lathom (UK)

E: CO2 reduction road map

Aiming for 2030 reduction target, as first step to carbon neutrality

Existing Technologies

- **Reduction of CO2 emission from furnaces** (Waste heater/alternative fuel/process optimization)
- **Usage of renewable energy**

Current target

2018-2020
1% specific CO2 reduction/year

2030 (SBT) target

2021-2030
21% absolute CO2 reduction

2050-2070
Carbon neutrality
(under study)

Technological development for short to medium term

- Raw materials
- Usage of renewable energy (Hydrogen etc.)

Long-term development

- Innovative technologies required

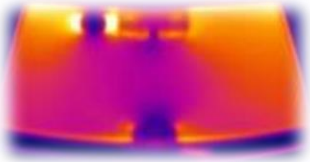
E: Contribution Opportunities for NSG Products

Wide range of solutions to support the evolution of society, including smart buildings, ZEB & ZEH and electric vehicles

Low e and vacuum glass for solar control and heat insulation

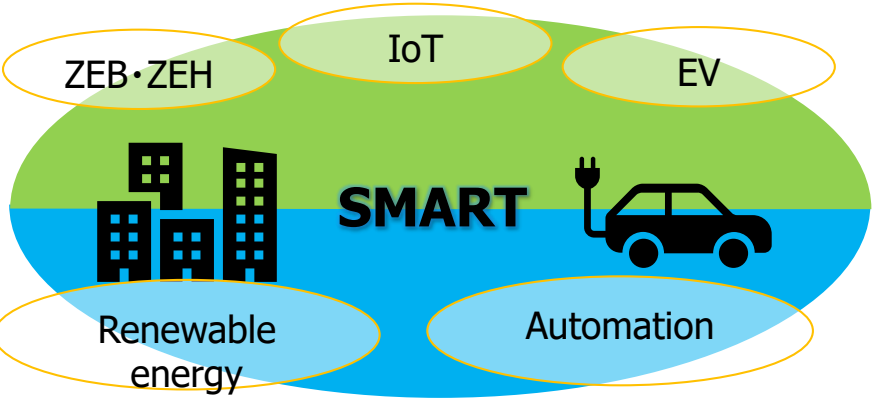
Transparent BIPV joint development

Heated WS to save energy

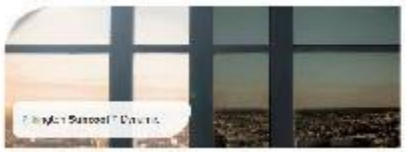


Online-coated glass for dynamic windows

Electrochromic window by View Inc.



Automotive low e glass to reduce air conditioner usage

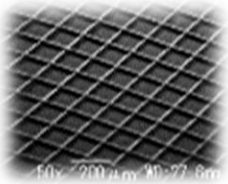


Thermochromic glass to control light

Glass for solar farms to supply renewable energy to buildings

Power storage

Sensors for automation



S: Contribution to Society

Mission and responsibility as good corporate citizen

Employees

- New appraisal and talent development program introduced and trained
- Promotion of inclusion & diversity

Supply Chain

- 75 percent of key suppliers agreed to "Supplier Code of Conduct" or adopted their own equivalent code

Ethics and Compliance

- Adoption of regional structure for ethics & compliance organization
- Due diligence conducted on business partners

NSG Foundation

- NSG Foundation was established to commemorate the 60th anniversary of NSG with the aim to contributing to the promotion of R&D activities on inorganic materials through research grants, which amounts to JPY1,664 million for 1,287 projects cumulatively.

V. Capital Allocation

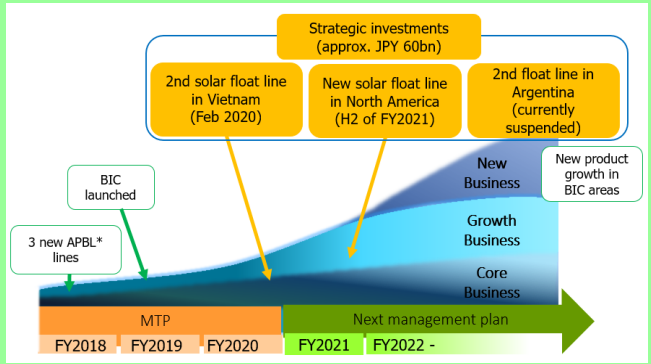
“VA + Growth” – Financial Sustainability

Mid-to long-term policy to improve financial sustainability remains unchanged; allocation of increased profit to be balanced among financial improvement, growth and return to shareholders

Operating Profit

Net Profit

Free Cash Flow



Redeem Class A share
(Pref dividend & premium reduction)
Reduce Debt
(Finance expense reduction)

Invest in Growth Opportunities

Make Return to Shareholders

Shareholders’ Equity

Shareholders’ Value

Credit Ratings

Toward Further Growth

Dividend Policy

Dividend on ordinary shares for FY2020 was suspended considering the current Group's financial position and its level of profitability

	FY2018	FY2019			FY2020		
	Year end	Interim	Year end	Total	Interim	Year end	Total
Ordinary (JPY/share)	20	-	20	20	-	0	0
Commemoration (JPY/share)	-	10	-	10	-	-	-
Total Ordinary Dividend	20	10	20	30	-	0	0
Dividend Amount (JPY bn)	3.6	2.0	2.8	4.8	-	1.7	1.7
- Ordinary Dividends	*1.8*	*0.9*	*1.8*	*2.7*	-	*0*	*0*
- Preferred Dividends	*1.8*	*1.1*	*1.0*	*2.1*	-	*1.7*	*1.7*
Consolidated Payout Ratio (Ordinary)	42%			26%			-

* Resumption of dividend payment on ordinary shares at the end of FY2018 (JPY20 per share);
* Centennial commemoration dividend paid additionally as interim dividend for FY2019 (JPY10 per share)

Dividend Policy:

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

Class A Shares Detail

Redeem Class A Shares at the earliest possible timing, while maintaining financial stability

Amount (No of Shares)	JPY40 billion (40,000 shares) *Number of outstanding shares after redemption as of March 2020: 30,000 (Issued value: JPY30,000m)				
Planned Allottees (Amount & No of shares)	Japan Industrial Solutions Fund II UDS III Corporate Mezzanine Limited Partnership UDS IV Corporate Mezzanine Limited Partnership	JPY20 billion (20,000 shares) JPY10 billion (9,000 shares) JPY10 billion (11,000 shares)			
Voting Rights	None				
Preferred dividend rate (Cumulative)	31 March 2017 ~ 31 March 2018 1 April 2018 ~ 31 March 2020 1 April 2020 ~	4.5% 5.5% 6.5%			
Call option (Company's option)	Consi-deration	Cash	Put option (Planned Allottees' option)	Consi-deration	Ordinary Shares
	Redemp-tion	1 April 2018 or later		Redemp-tion	1 July 2020 or later, unless conversion restriction removal reason exists *A conversion restriction removal reason occurred on 22 May 2020
	Redemp-tion Amount per share	Paying-in amount per share + cumulative accrued dividend amount + daily prorated accrued preferred dividend amount + redemption premium <Redemption premium> 1 April 2018 ~ 30 June 2018 : 1.08 1 July 2018 ~ 30 June 2019 : 1.15 1 July 2019 ~ 30 June 2020 : 1.22 1 July 2020 ~ 30 June 2021 : 1.29 1 July 2021 ~ 30 June 2022 : 1.36 1 July 2022 ~ : 1.43		No. of Ordinary Shares to be Issued per Class A Share	(Paying-in amount per share X ordinary share redemption premium) / acquisition price <Ordinary share redemption premium> 1 April 2017 ~ 30 June 2017 : 1.05 1 July 2017 ~ 30 June 2018 : 1.08 1 July 2018 ~ 30 June 2019 : 1.15 1 July 2019 ~ 30 June 2020 : 1.22 1 July 2020 ~ 30 June 2021 : 1.29 1 July 2021 ~ 30 June 2022 : 1.36 1 July 2022 ~ : 1.43
Design	• The Planned Allottees may exercise their put option for 4,000 or less Class A Shares, when the Company notifies the exercise of its call option for the entire outstanding Class A Shares.				

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.

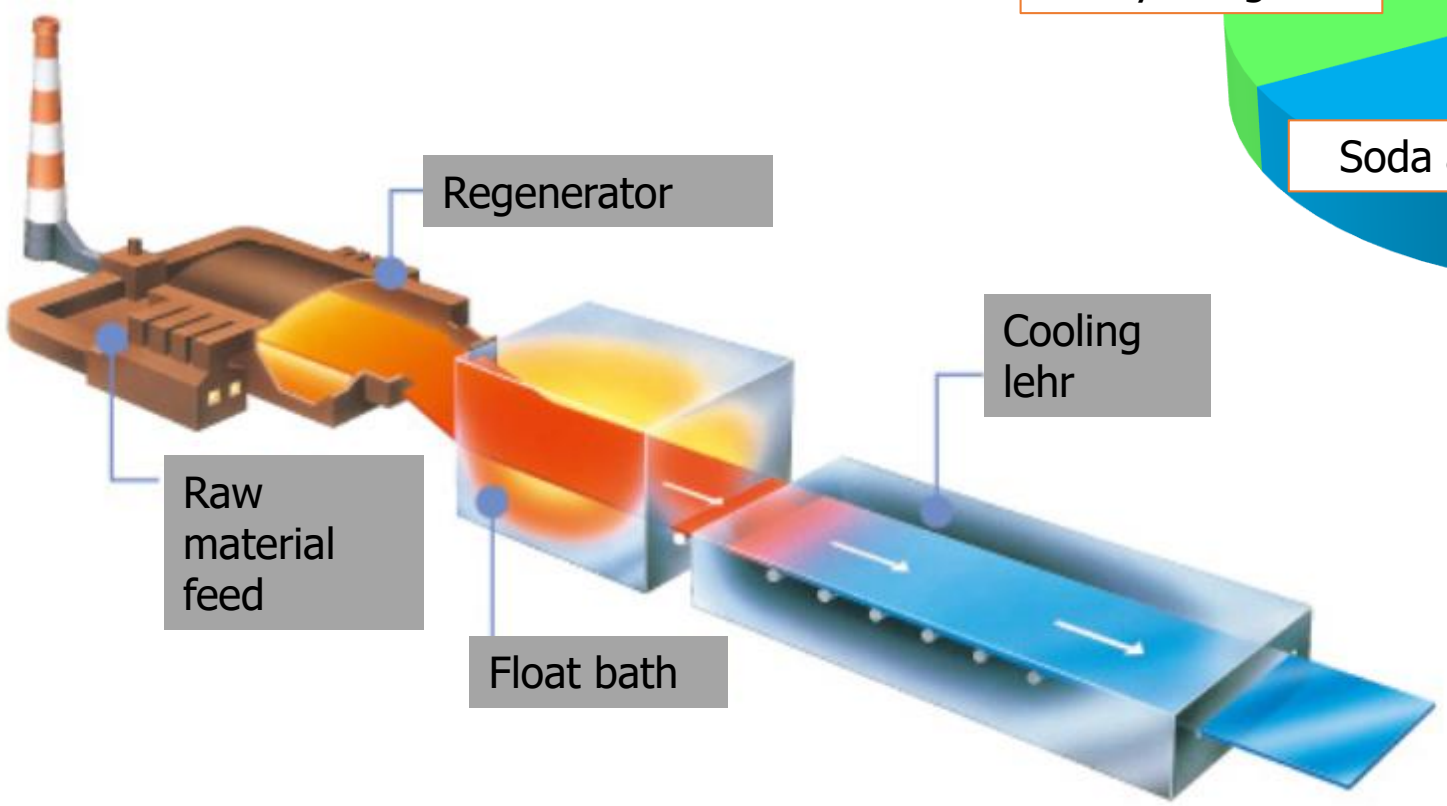
Nippon Sheet Glass Company, Limited

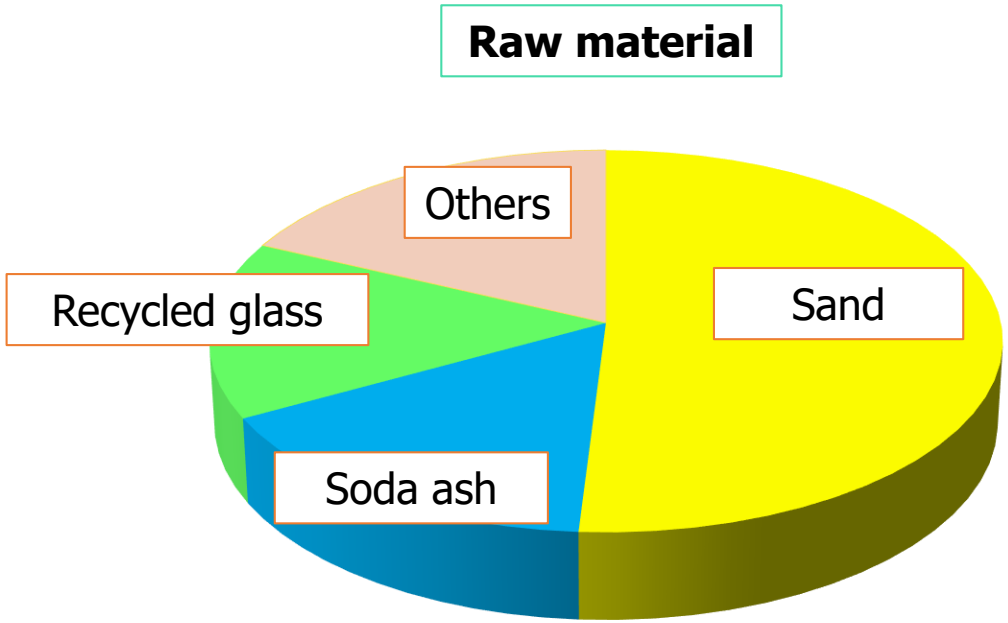
VI. Appendices

1. Manufacturing Process

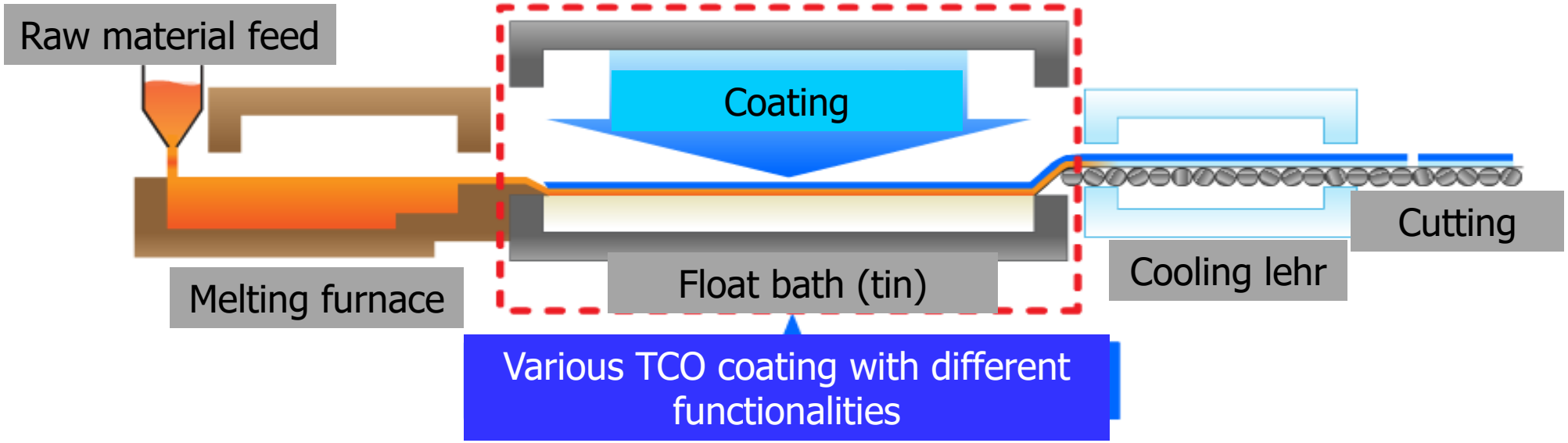
Float Process

Float glass:
Molten glass is poured continuously from a furnace onto a shallow bath of molten tin. It floats on the tin, spreads out and forms a level surface. This method was introduced to the world as the float process in 1959.





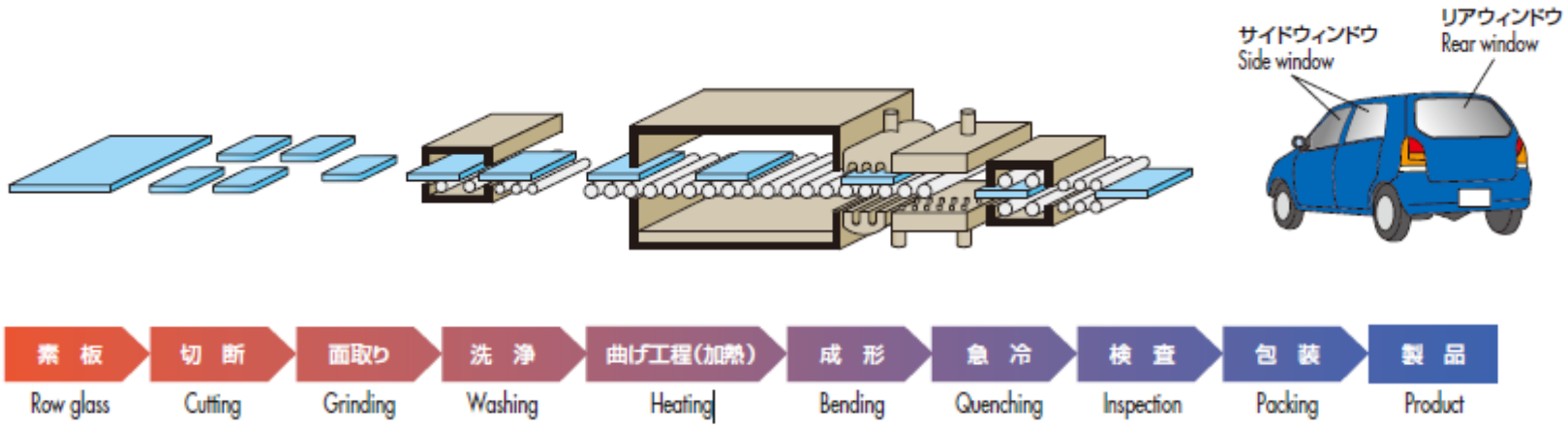
Online Coating



- Thin, uniform metallic oxide film deposited over glass while being formed inside the float bath
- Cost competitive, available in large size
- Durable: suitable for further processing & for use as an external glass pane
- Versatile: architectural, solar & automotive applications
  - Technical applications include thin or curved displays, OLED lighting and thin-film sensors

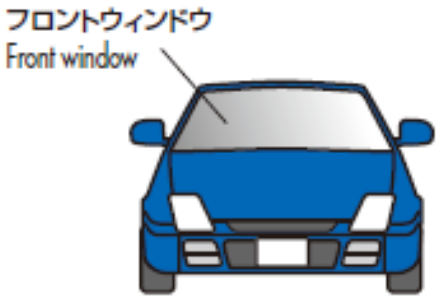
Automotive Glazing – Toughening

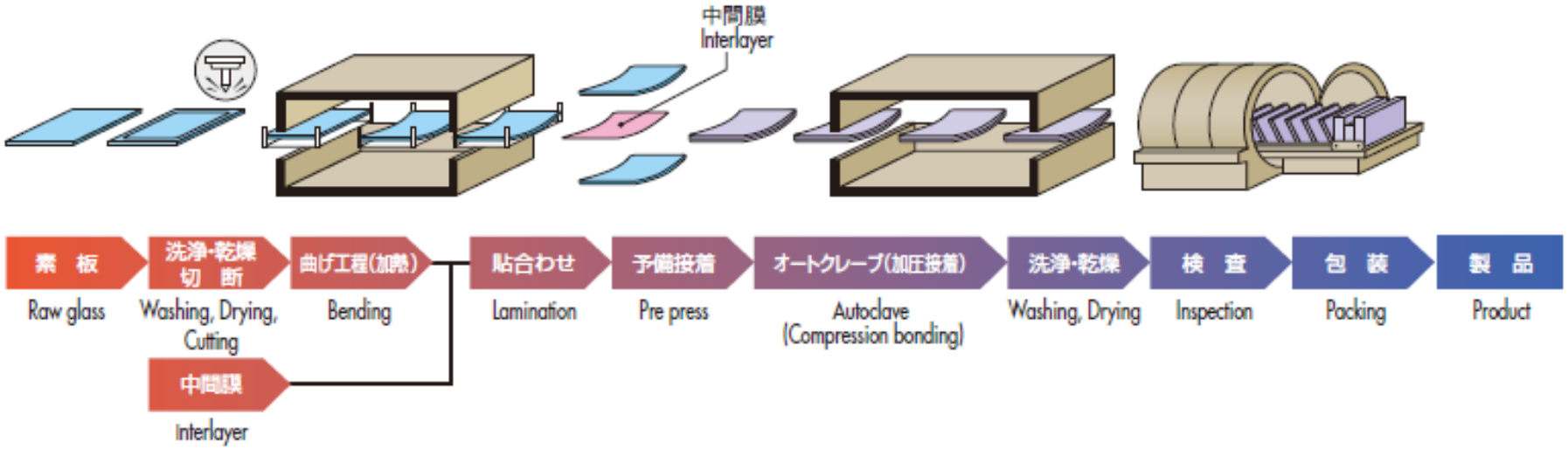
Toughened Glass:
Flat glass is placed in a tempering oven, and heated to between 650 and 700°C, which is near the glass softening temperature.
Then the glass is quenched by blowing air evenly on both sides, causing the surface to harden first, with the inside cooling and shrinking later. The result is the formation of a stable compressive stress layer at the surface, and the glass is 3 to 5 times more resistant to impact than ordinary glass.
This glass is mainly used for the side and rear windows of automobiles.



Automotive Glazing – Laminating

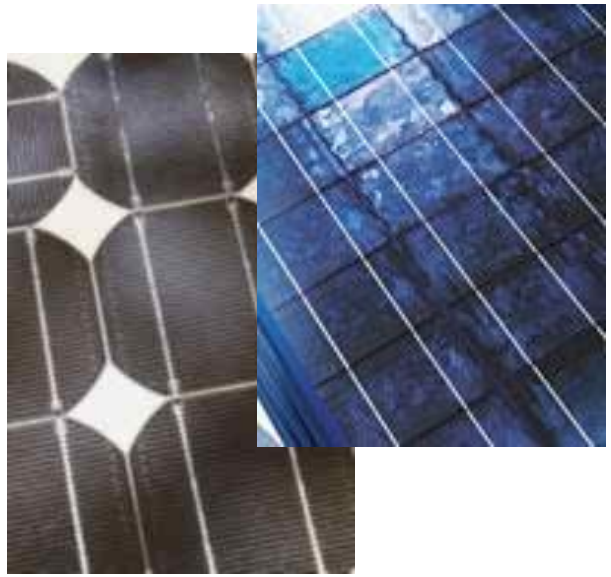
Laminated Glass:
Laminated glass consists of two pieces of glass with a sandwich of transparent plastic interlayer.
This is then placed into an air-pressure autoclave, and treated at high temperature and pressure.
Some special products are made with 3 or more sheets of glass.
This glass is mainly used for the front windows of automobiles.





Solar Panels & Glass: Crystalline vs Thin Film

Crystalline Silicon Solar Panels
High efficiency, Chinese manufacturers



Low iron rolled glass
+AR (Anti Reflection)coating, mainly for cover glass

Thin film solar panels
Total cost competitiveness, strength in large size and high temperature applications

TCO coated flat glass, forming part of solar cell

Energy-saving Regulations

Growth opportunities with stricter energy-saving regulations

- In response to heightening calls for CO2 emission reduction, governments across the globe have been tightening building energy-saving regulations and introducing zero-emission building targets.
- Behind in energy saving, the private sector including offices and houses are now adopting more functional windows such as triple grazing with low e coating instead of double glazing or single pane windows. Windows equipped with photovoltaics (BIPV) may pave its way into buildings soon.

<Zero Energy Building Targets>

Japan (Commercial buildings)

- 2020: All new public buildings
- 2030: Net zero of total of new buildings

Japan (Houses)

- 2020: All new standard houses
- 2030: Net zero of total new houses

BIPV (Building Integrated Photovoltaics)

Spacia™ (Vacuum glazing)

USA

- 2030: All new commercial buildings
- 2050: All commercial buildings

EU

- 2018: All new public buildings
- 2020: All new buildings

UK

- 2016: All new houses
- 2018: All new public facilities
- 2019: Zero carbonization for all commercial buildings

2. BIC Focus Areas

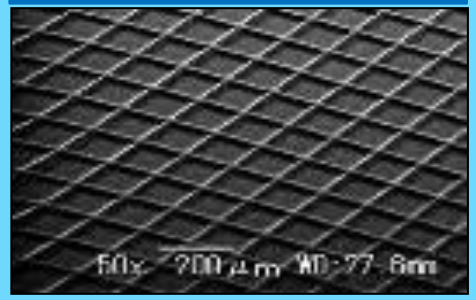
BIC Focus Area: (1) Life Science Business

Focus on food/water safety, environment, academia

Mobile DNA detector

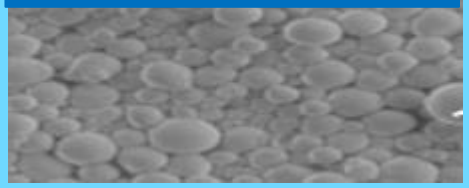
Disposable kit

Fine glass processing



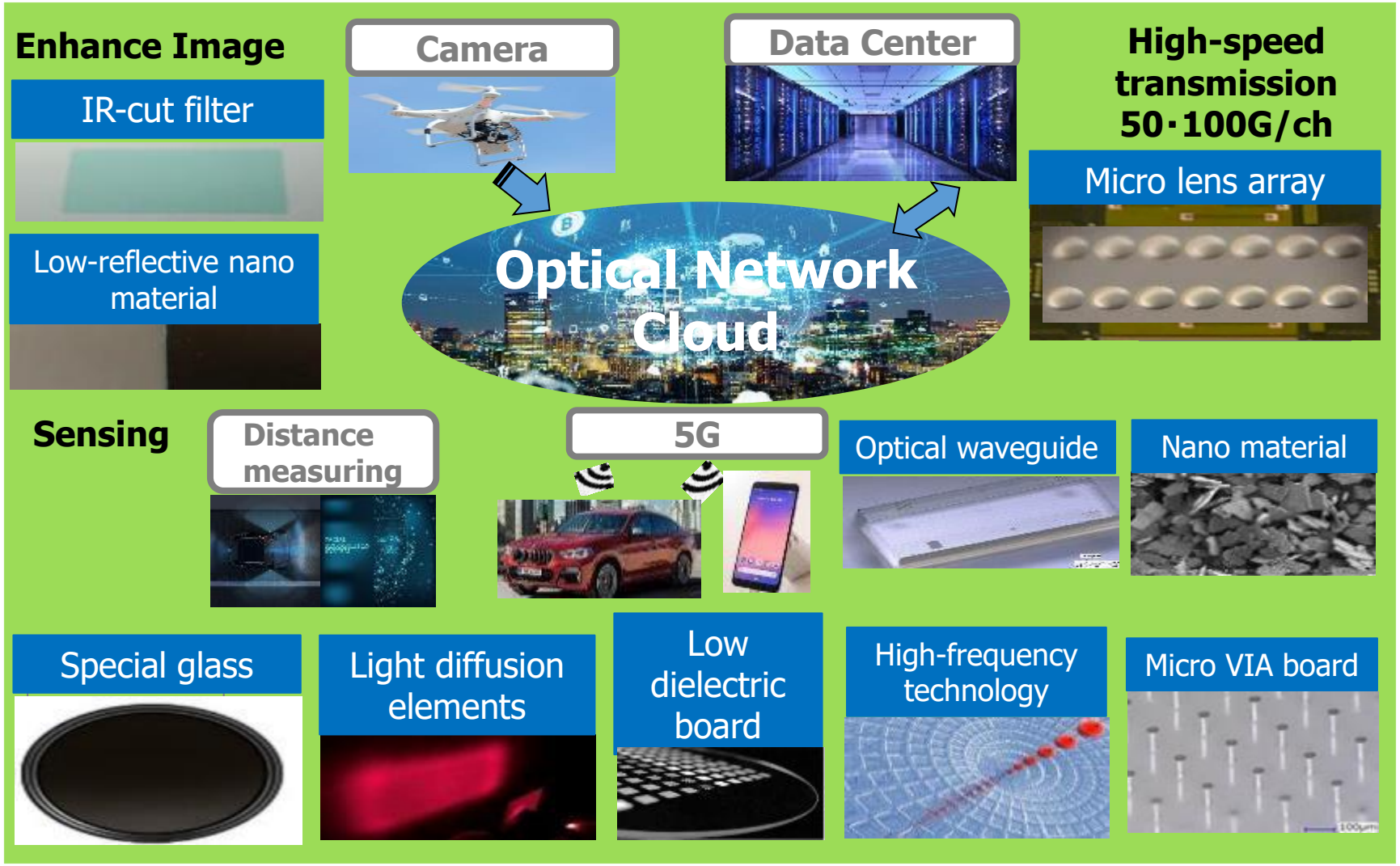
Chip with flow channel

Inorganic fine particle material



BIC Focus Area: (2) IoT, Cloud Business

Focus on high-speed data transmission, sensors, filters



BIC Focus 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 Focus Area: (4) 'Industry 4.0'

Improve sensor capability with fine glass applications

Hologram

Nano glass composite

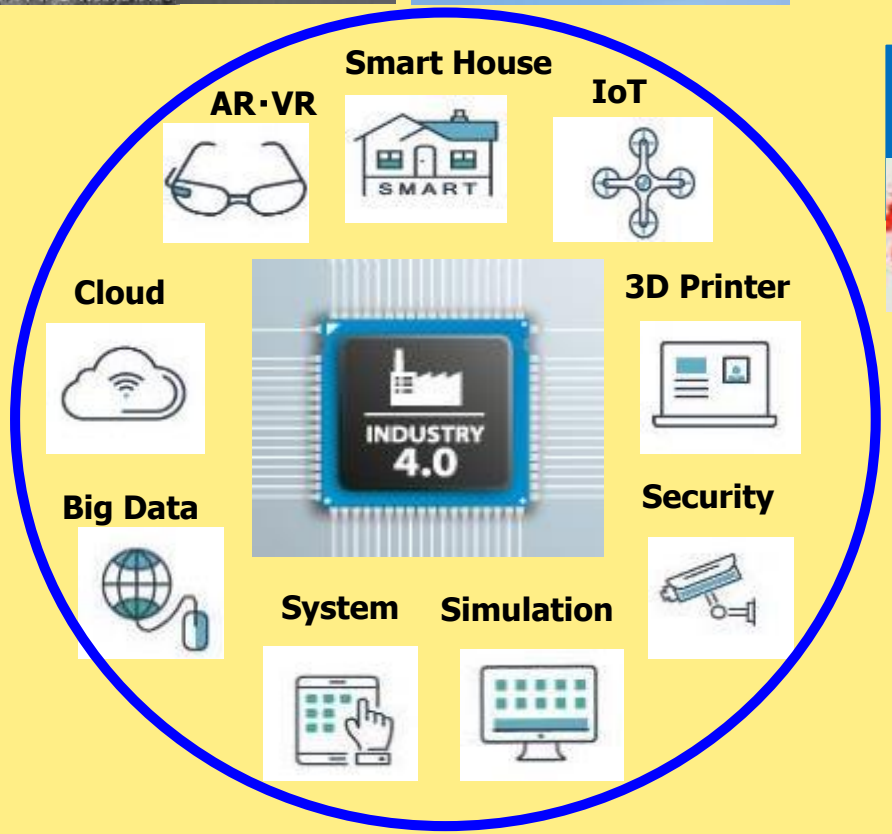
Drones

Super glass paper

Optical glass

Optical transmitter

High density material



3D printer material

High-performance optical filter

3. Financial Data

Financial Data (1)

		FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Assets	¥ billion	926.2	920.1	812.1	790.2	788.6	761.9	765.2
Interest-bearing debt		455.3	442.7	437.0	399.4	372.7	371.5	435.0
Shareholders' equity		184.0	175.7	103.1	124.1	135.2	123.8	73.6
Called up share capital		116.4	116.4	116.4	116.5	116.5	116.5	116.6
Net debt		379.1	374.1	381.0	313.3	306.5	317.7	390.2
EBITDA		54.4	57.8	60.3	62.1	63.6	64.7	55.0
Net debt/EBITDA		7.0x	6.5x	6.3x	5.0x	4.8x	4.9x	7.1X
Net debt/Equity ratio		2.0x	2.0x	3.4x	2.3x	2.1x	2.4x	4.4X
Shareholders' equity ratio	%	19.9%	19.1%	12.7%	15.7%	17.1%	16.2%	9.6%
Trading profit ratio	%	3.7%	4.0%	4.3%	5.7%	6.3%	6.3%	4.1%
Net cash flows from operating activities	¥ billion	17.9	24.6	21.8	30.4	34.7	29.0	30.4
Net cash flows from investing activities		-17.1	-23.2	-26.4	-10.2	-17.9	-28.1	-56.9
Cash flow before financing activities		0.8	1.4	-4.6	20.3	16.8	0.9	-26.4
Capital expenditures		31.6	36.6	28.2	28.0	35.5	32.2	-67.0
R&D costs		7.9	8.2	9.8	8.5	9.1	9.4	9.0
Depreciation and amortization		40.4	41.7	40.9	32.2	29.4	27.9	34.8

Numbers of shares outstanding (common stock*1)	K	903,551	903,551	903,551	90,366	90,487	90,594	90,642
Earnings per share*1	¥	-18.4	1.9	-55.2	62.0	48.3	115.2	-236.0
Book value per share*1	¥	203.78	194.6	114.14	941.76	1042.72	978.5	470.9
Cash dividends Yen*1	¥	0	0	0	0	20	20	-
Stock price (High)	¥	154	149	142	951	1080	1315	965
Stock price (Low)	¥	90	94	64	600	743	767	282

*1: Effective as from 1 October 2016, the Company conducted a share consolidation in which every ten common shares

Note: Early IFRS adaption since FY2011

Financial Data (2)

		FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Revenue	¥ billion	606.1	626.7	629.2	580.8	598.9	612.8	556.2
Architectural		240.6	252.9	262.6	237.7	238.0	247.3	233.7
Automotive		305.1	314.0	316.3	296.6	311.4	314.6	281.0
Technical Glass		59.4	58.7	49.5	46.1	48.4	49.1	40.1
Others		1.0	1.1	0.8	0.4	1.1	1.7	1.4
Trading profit	¥ billion	22.4	25.2	27.2	33.1	37.7	38.8	23.0
Operating profit	¥ billion	14.6	16.8	19.4	29.9	35.6	36.9	21.2
Architectural		11.0	17.0	24.6	27.0	26.2	25.8	17.3
Automotive		11.2	9.4	9.8	12.7	14.2	15.1	6.1
Technical Glass		5.9	4.9	0.3	1.8	5.4	8.1	7.1
Others		-13.4	-14.5	-15.3	-11.6	-10.2	-12.1	-9.4
Operating profit ratio to revenue	%	2.4%	2.7%	3.1%	5.1%	5.9%	6.0%	3.8%
Architectural		4.6%	6.7%	9.4%	11.4%	11.0%	10.4%	7.4%
Automotive		3.7%	3.0%	3.1%	4.3%	4.6%	4.8%	2.2%
Technical Glass		9.9%	8.4%	0.5%	3.8%	11.2%	16.4%	17.7%
Exceptional items	¥ billion	-13.8	5.5	-35.1	2.9	-1.3	-7.1	-24.0
Finance expenses (net)		-16.9	-17.9	-18.2	-19.2	-14.6	-13.3	-11.8
Share of JVs and associates		1.0	0.4	-3.4	1.1	2.4	6.2	1.1
Income before income taxes/Profit before taxation		-15.1	4.8	-37.4	14.8	22.1	22.7	-13.5
Net income/Profit attributable to owners of the parent		-16.6	1.7	-49.8	5.6	6.2	13.3	-18.9

Note: Early IFRS adaption since FY2011

Financial Data (3) – Exchange rate trend -

Average rates used

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
GBP	159	177	181	142	147	146	138
EUR	134	139	132	119	130	129	121
USD	100	110	120	108	111	111	109
BRR	44.4	44.5	33.5	32.8	34.4	29.4	26.4
ARS	16.27	13.10	11.35	7.22	6.30	–	–

Closing rates used

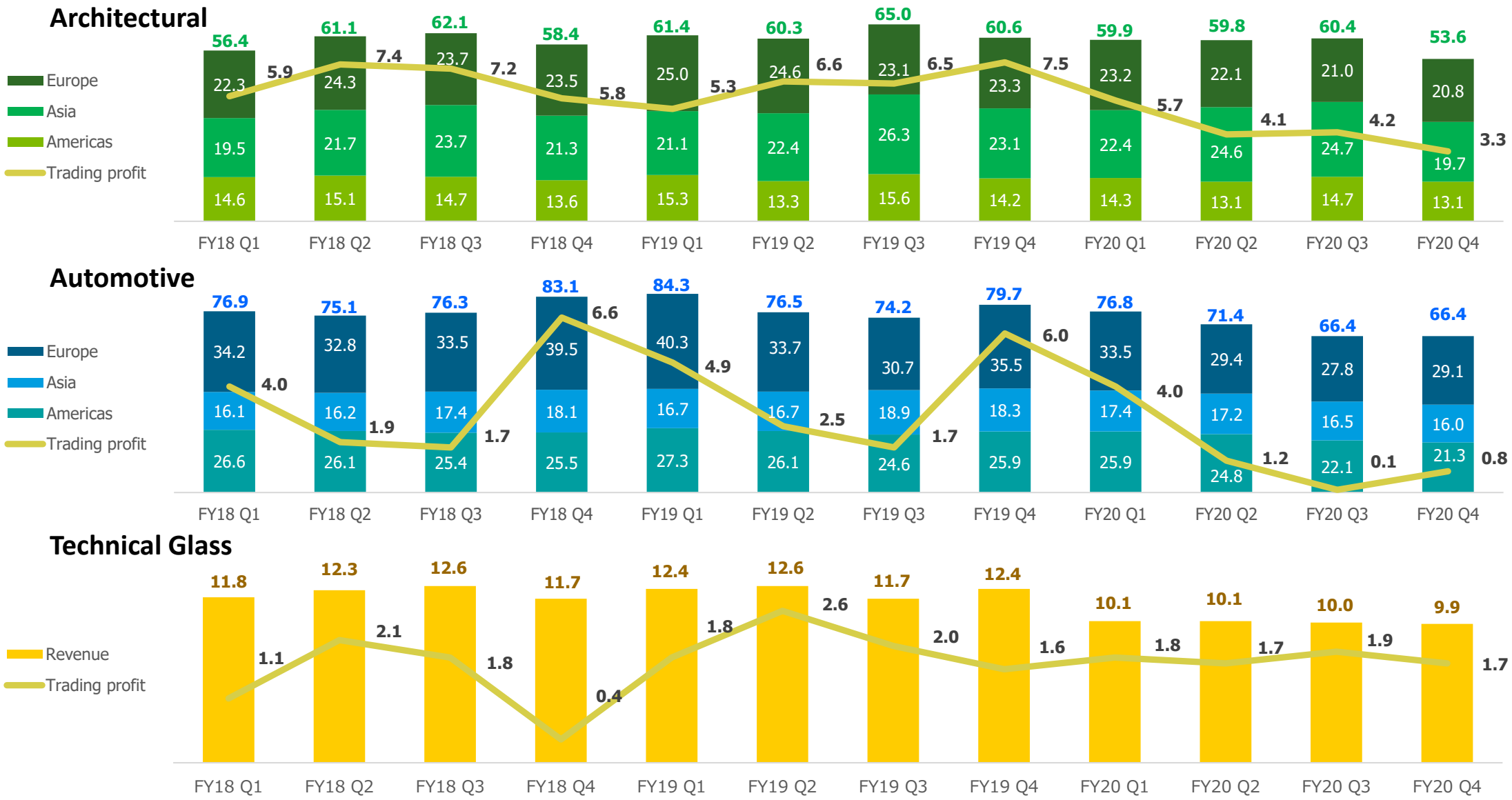
	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
GBP	171	178	161	139	150	144	133
EUR	141	130	127	119	132	124	119
USD	103	120	113	111	106	111	108
BRR	45.5	37.3	31.3	35.5	32.1	28.3	20.8
ARS	12.84	13.66	7.69	7.24	5.30	2.53	1.68

FX Sensitivity

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

(JPY bn)	FY2017	FY2018	FY2019	FY2020
Equity	(3.5)	(3.5)	(3.3)	(3.1)
Profit for the period	(0.2)	(0.1)	(0.2)	0.1

Revenue & Trading Profit – Quarterly Trend




NSG
GROUP