

NSG

GROUP

Strategic Management Plan (FY2012-FY2014)

‘Making a Difference to our World through
Glass Technology’

4 November 2010

Note: FY denotes year ending 31 March of the respective calendar year

Introduction

- Our new Strategic Management Plan sets the course for the NSG Group over the next three years
- It replaces the Medium-term Plan we issued in November 2006, which is now coming to the end of its term
- The new Plan covers FY12 to FY14, but we are beginning implementation immediately

New Plan replaces former Medium-term Plan

What is different?

The new Plan reflects

1. Continuing drive to move NSG Group to a truly international company with headquarters in Japan
2. Major strategic review conducted over the past six months to sharpen operational focus and ensure we capture all available synergies across the Group
3. Recent Share Offering, funding immediate growth priorities
4. Our view of Plan as a 'dynamic document'. We will update the market annually on progress

Sharpen our strategic focus

MTP Progress so far (Phase 1)

Objective

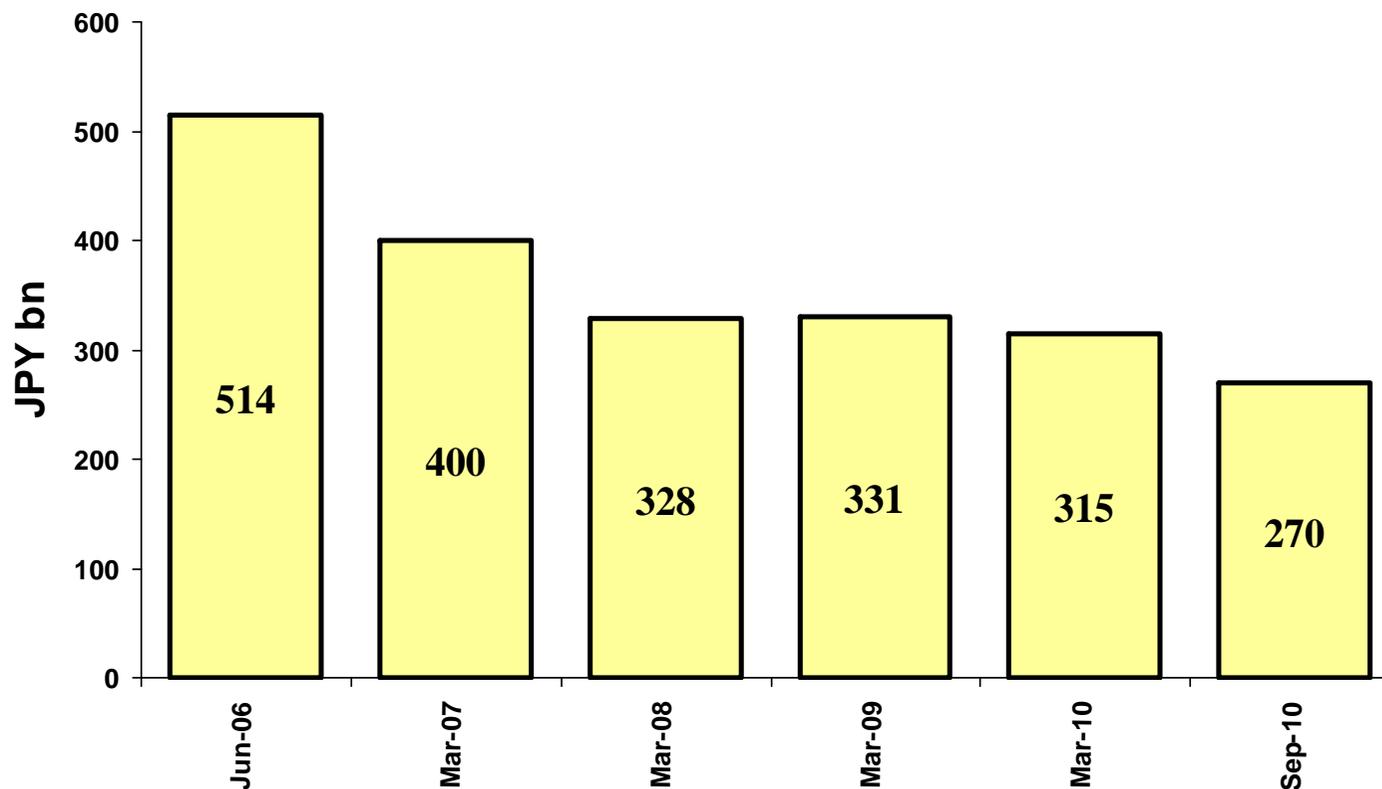
Create a new entity focused on differentiating ourselves from competitors and maximizing productivity and operational quality while re-establishing our financial foundations

Achievements

- **Integrated global business created**
- **Restructuring implemented, strengthening operational excellence**
- **Preparations for Phase 2 growth with selective investments**
- **Corporate governance strengthened**
- **International Board established**
- **Net debt managed to target levels**

New Plan builds on progress on 'Phase 1' priorities

Progress on Net Debt Reduction



Notes:

1. Net debt is interest-bearing debt less cash and cash equivalents
2. Following conversion of convertible bonds to equity in the year to March 2007, debt has been further reduced through disposals of non-core businesses and a strong focus on internal cash generation

Strong cash management – Debt target achieved

New Strategic Management Plan

Our Vision

‘Making a Difference to our World
through Glass Technology’

Our Mission

‘To be the global leader in innovative high-performance glass and glazing solutions, contributing to energy conservation and generation, working safely and ethically’

New Group Vision and Mission underpin Plan

Plan Objectives

Overall - to take the NSG Group to the next level in its development, by:

- Maximizing profitable growth while reducing our net debt/EBITDA ratio
- Ensuring highest standards of ethics, safety, environmental responsibility and sustainability in all our activities
- Being innovative in everything we do

Moves NSG Group to next level of development

Strategic Management Plan - Evolution

- Progress to date interrupted by the global downturn, affecting earnings and cash generation - temporarily constraining investment and inhibiting balance sheet strengthening
- A major strategic review was undertaken over the past six months, which identified important growth opportunities, particularly in
 - Emerging markets
 - Value-added products addressing climate change
- Early investment opportunities were identified in a number of key projects with 12 to 24 month development timescales
- Quick action was taken to secure funding for these through recent Share Offering
- Funding from share issuance will allow us to strengthen balance sheet, seize investment opportunities and leverage competitive position

Plan covers next three years, taking effect immediately

Financial Targets

FY11 → FY14

- **SALES** 5% CAGR*
- **OPERATING PROFIT (pre-amortization)** DOUBLE, AS A MINIMUM
- **EBITA MARGIN** 5% → >10%
- **EBITDA** 50% INCREASE, AS A MINIMUM
- **NET DEBT/EBITDA** 4.5x → <3x
- **RETURN ON EQUITY** Nil → LOW DOUBLE DIGIT %

*CAGR = Compound Annual Growth Rate

Further strengthen our financial position

Focused R&D

- New developments from a 20% improvement in R&D productivity by FY14 will support delivery of the Strategic Management Plan
- Energy-saving products for Buildings will be developed for the emerging markets where we plan to grow strongly
- Step change improvements in the performance and cost of thin film PV substrates will maintain our clear lead in this fast growing market
- Innovation in automotive will support our growth in emerging markets and the move towards hybrid and electric vehicles, including lightweight and energy saving products
- Opportunities to exploit our core technologies in new business areas such as low-energy lighting will be actively progressed
- New products and processes which contribute to Sustainability will be given priority and a significant share of resources

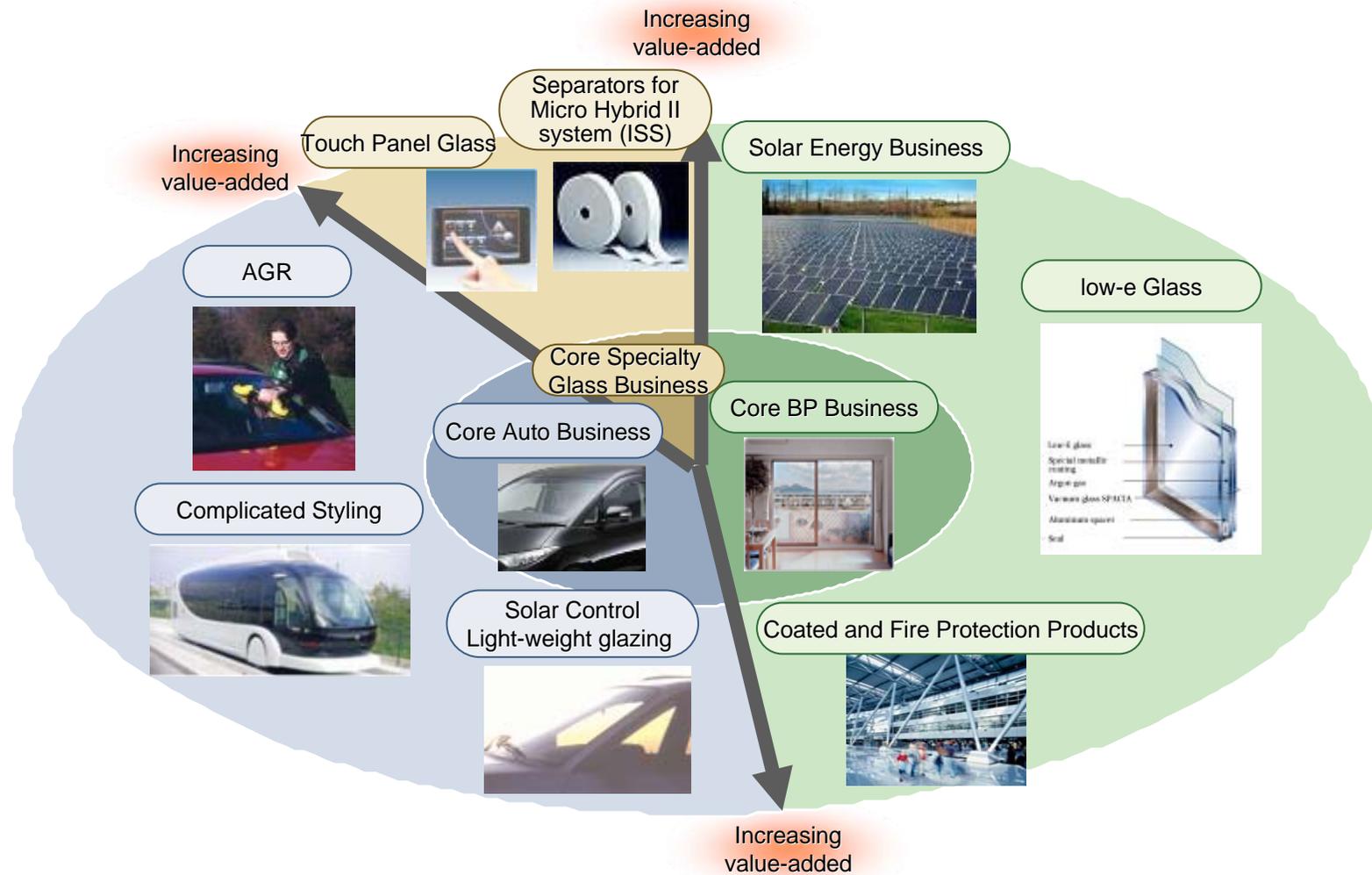
R&D increasing focus on energy saving and generation

Key Technological Strengths

- Float operations
- Glass coating
- Clear fire protection glazing
- Automotive bending and shaping
- Automotive solar control
- Automotive integration of other functions into glass. e.g. electronics/antennas
- Automotive glazing systems
- Automotive SPD switchable glazing
- Ultra-thin float glass (UFF®)
- Optoelectronics - SELFOC®
- Glass fiber specialty applications

Strong position in key technologies in all businesses

Expansion of Value-added Businesses



High value-added products, especially in advanced environmentally-related applications, will help drive future growth in all businesses

Strategic Management Plan Focus Areas

Growth



Geographical, particularly into emerging markets

Product range - meet demand for 'environmental' glass products

Financial



Strengthen Financial Ratios

Operational Focus



Operate in sectors in which we can add the most value to our customers and the markets they serve

Competitiveness



Build on recent restructuring actions

Globalization



Develop diverse international management capability

Sustainability



Make a positive environmental contribution to the key value chains in which we participate

Creating a thriving, innovative global enterprise

Growth – Immediate Targets

Emerging markets

- Expand geographically into high growth emerging countries

'Environmental' opportunities

- Capitalize on growth opportunities offered by the increased demand for 'environmental' glass products utilizing our technology

Building Products

- Solar Energy glass
- low-e energy-saving glass in China

Automotive

- South America expansion
- Eastern Europe expansion
- Mexico expansion

Specialty Glass

- Ultra-thin float glass
- SLA for ink-jet & LED printers
- Battery technology to meet energy-saving needs

Strengthened Financial Base

Debt reduction & partial Preferred Share redemption completed FY11

Operational focus

Objectives

Operate in sectors in which we can add the most value to our customers and the markets they serve

- **Refine operational focus following Strategic Review**
- **Further streamline the organization**

Key actions under Plan

- Increase focus on shifting assets to higher-value product mix and lower-cost production
- Strict investment policies in mature markets, investing only in those parts of the business that add value
- Leverage our glass-based technologies into existing and new glass market segments
- Redeploy resources towards target segments

Increased focus on high-value product mix

Competitiveness – build on Restructuring

Rationalized capacity to match demand

- Closed various plants in Western Europe
- Further managed capacity reductions in Western Europe and North America
- Capacity equivalent to two float lines taken out in Europe and float capacity reduced by 15 percent in the rest of the Group

Headcount reduced and rebalanced

- Global headcount reduced by 6,700 employees, through March 31, 2010
- Permanent/temporary employee mix rebalanced

Investment reviewed

- Capital expenditure rates at below 60 percent of depreciation in FY2010

Restructuring Program

Launched January 2009
Completed March 2010

Savings of ¥16bn in FY2010

Decisive and quick restructuring actions taken to address economic downturn and adjust capacity to demand

Globalization – People Processes



Sustainability

Objectives

Make positive environmental contribution to key value chains in which we participate

- **Further embed Sustainability in the organization in all policies**
- **Commercially, ensure we contribute and benefit from environmental trends**

Actions under Plan

- Set increasingly tough Sustainability targets for the organization, particularly in energy saving and waste management
- Ensure we capitalize on demand for products that save and generate energy

Embed Sustainability in the organization

Automotive – value growth drivers

Key value growth drivers:

- Model differentiation
- Increased complexity
- Added functionality.

Value Growth – Automotive	
Demand	Growth drivers
Styling	Designers see glazing as a crucial element in designs to differentiate vehicles.
Curvature	Geometric demands increase the complexity and depth of curves in vehicle glazing.
Surface tolerance	Increasing depth and complexity of curvature makes surface tolerances critical, e.g. for efficient windshield wiper operation.
Security	Crime and vandalism increase the need for security, provided by laminated side, roof and rear glazings.
Solar control	Larger glass areas require tinted and coated glazing to reduce solar gain and air-conditioning load.
Glazing systems	Lean manufacturing require modularized glazing including trim and other fittings in one unit.
Integrated systems	Complex antenna arrays and electronics systems integrated into glazing

Automotive Strategic Priorities

- Rapidly implement the key projects identified in the Share Offering document
 - South America toughening expansion
 - Mexico laminating growth
 - Eastern Europe laminating expansion
- Expand our AGR business, particularly in fast growing markets
- Improve competitive position in North America, China and Japan, in order to grow faster than the market

Targeted growth projects being implemented

Automotive Growth - Expansion in South America

- South American vehicle markets relatively unaffected by global recession
- Our key customers are expanding in this high-growth region
- We occupy a strong market position in Brazil, with very effective local management
- We will expand our toughening capacity to maintain our market share



We occupy a strong position in a growing market

Automotive Growth - Expansion in Mexico



- Mexico is an important low-cost supply base for OE and Aftermarket in NAFTA region
- OE and Aftermarket demand in NAFTA growing strongly, with rapid growth in Mexico itself
- Our established low-cost facility in Mexico can compete effectively against low cost imports
- We will expand laminating capability to meet demand and grow market share

Invest in low-cost output to grow faster than market

Automotive Growth - Expansion in Eastern Europe

- Our key customers are shifting operations to Eastern Europe to benefit from lower costs
- They expect their suppliers to source more from low-cost Eastern Europe to their Western European plants
- We will expand our laminating capacity and toughening capabilities in our lowest cost plant in Europe
- In addition, there is significant growth in Eastern Europe itself



Protect profits by shifting asset focus from west to east

Building Products – value growth drivers

Key value growth drivers:

- Energy-saving and safety legislation
- Demand for enhanced functionality
- Emerging markets

Value Growth – Building Products

Demand	Growth drivers
Energy-saving (heating)	Energy-saving legislation and building regulations; reduction of energy loss from buildings, energy labeling of windows.
Energy-saving (cooling)	Energy-saving legislation, reduction of air-conditioning load in buildings, preventing non-air-conditioned buildings from over-heating
Safety/ security	Increasing legislative requirement for safety glass in certain applications. Requirement for transparency combined with security features
Fire	Requirement for good light transmission and protection compliance with regulations on fire protection
Acoustic	Increasing noise levels caused by traffic, aircraft, etc., progressively backed by legislation.
Self-cleaning	Reduction in use of detergents, safety at heights, extension of product range and features to increase functionality in commercial and domestic applications.
Solar Energy	Demand for renewable energy, stimulated by government support and feed-in tariffs

Building Products Strategic Priorities

1. South America
2. Solar Thin Film
3. China and other Emerging Markets
4. Fire Protection
5. Expand other value-added growth products

Building Products Growth – South America



- Our businesses have consistently delivered superior returns in a high growth market
- Strategic actions required are:
 - Invest in new float lines in order to maintain our leading float position
 - Maintain market leadership in the supply of semi-finished products, i.e. coated, laminated and mirror
 - Develop new markets and supply capability for environmentally friendly, value-added coated glass

Maintain our strong position in South America

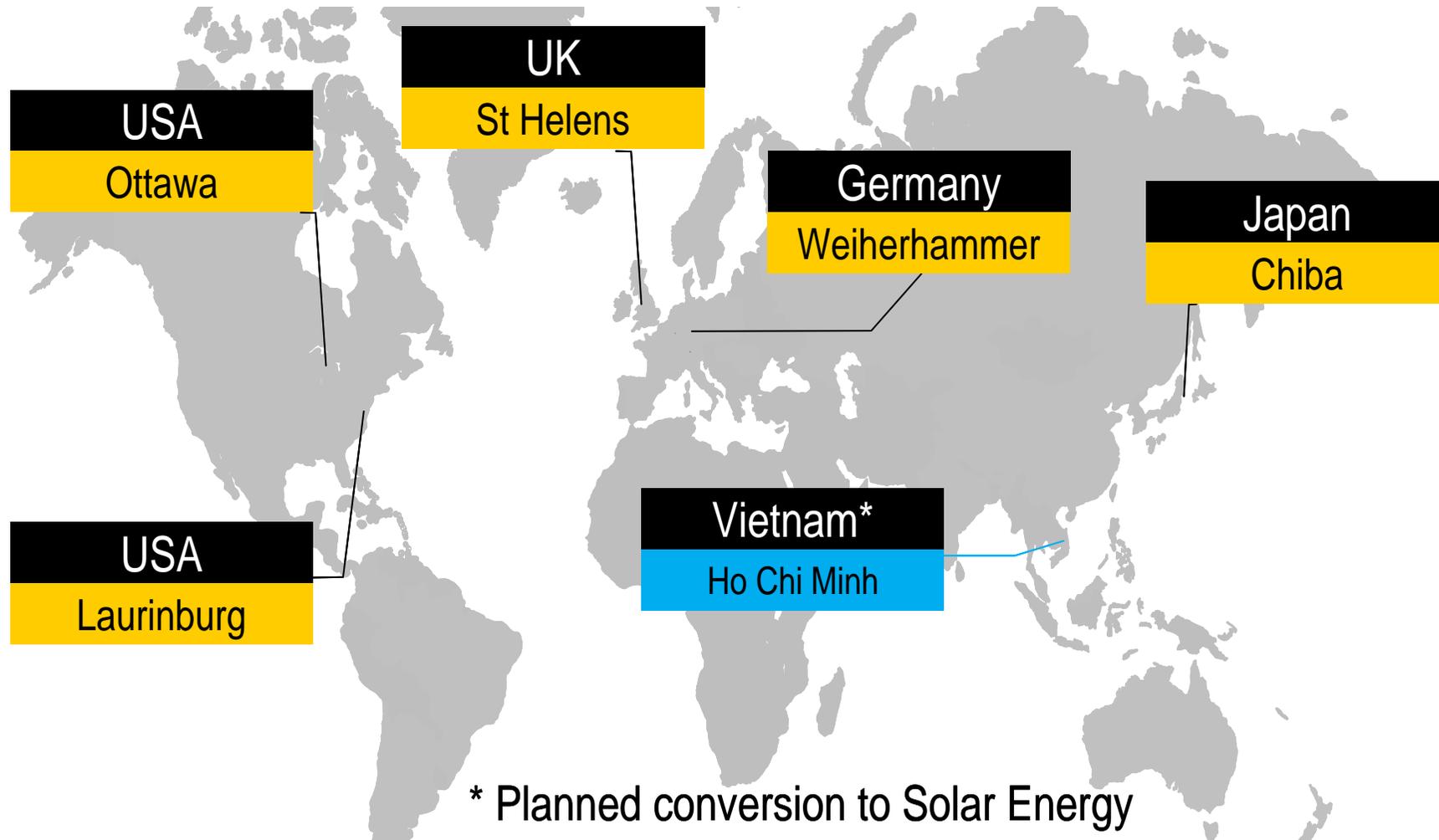
Building Products - Growth Thin Film in PV

- Thin Film for PV requires high quality on an industrial scale
- Our experience and expertise in float and online coating has given us first mover advantage in Thin Film
- Following share issuance, we will expand our current manufacturing base in South East Asia, which will give us a total of six fully-capable Solar Energy float lines to maintain our current market leadership



Demand for highly cost-competitive PV solar cells expected to grow annually, by around 30% per annum

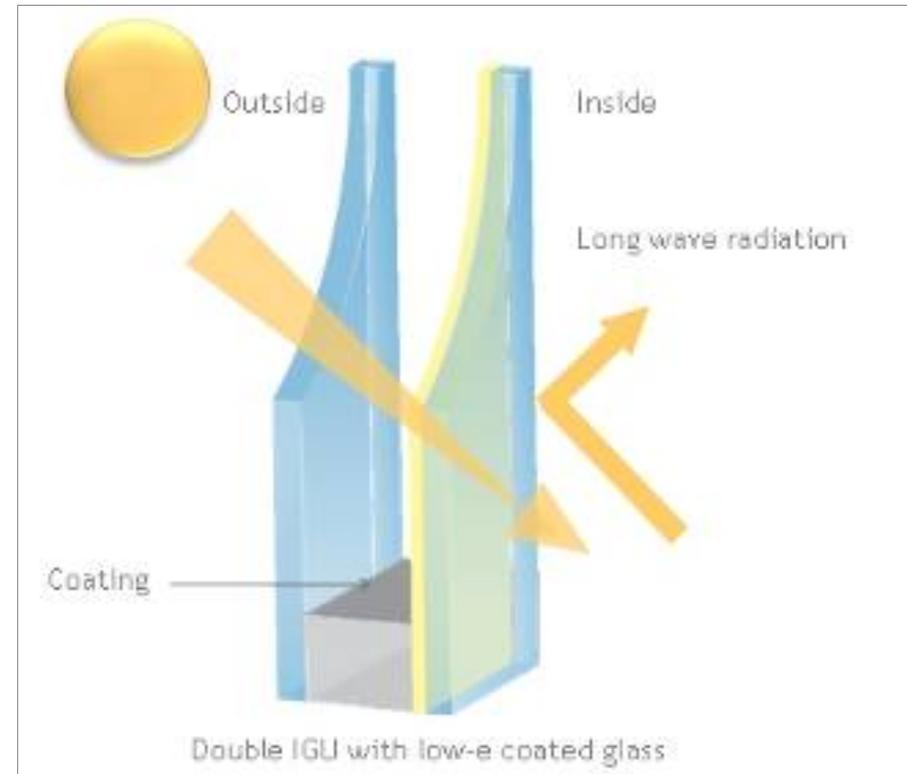
Solar Energy Float Lines



Expand dedicated Solar Energy float lines

Building Products Growth - low-e Glass in China

- We have been operating float lines in China with local partners since 1986
- Energy-saving legislation is driving increased demand for low-e glass in China
- We intend to use our advanced coating technology, with a Chinese low-cost partner, to seize the low-e opportunity



Energy legislation driving low-e demand in China

Building Products Growth – Others

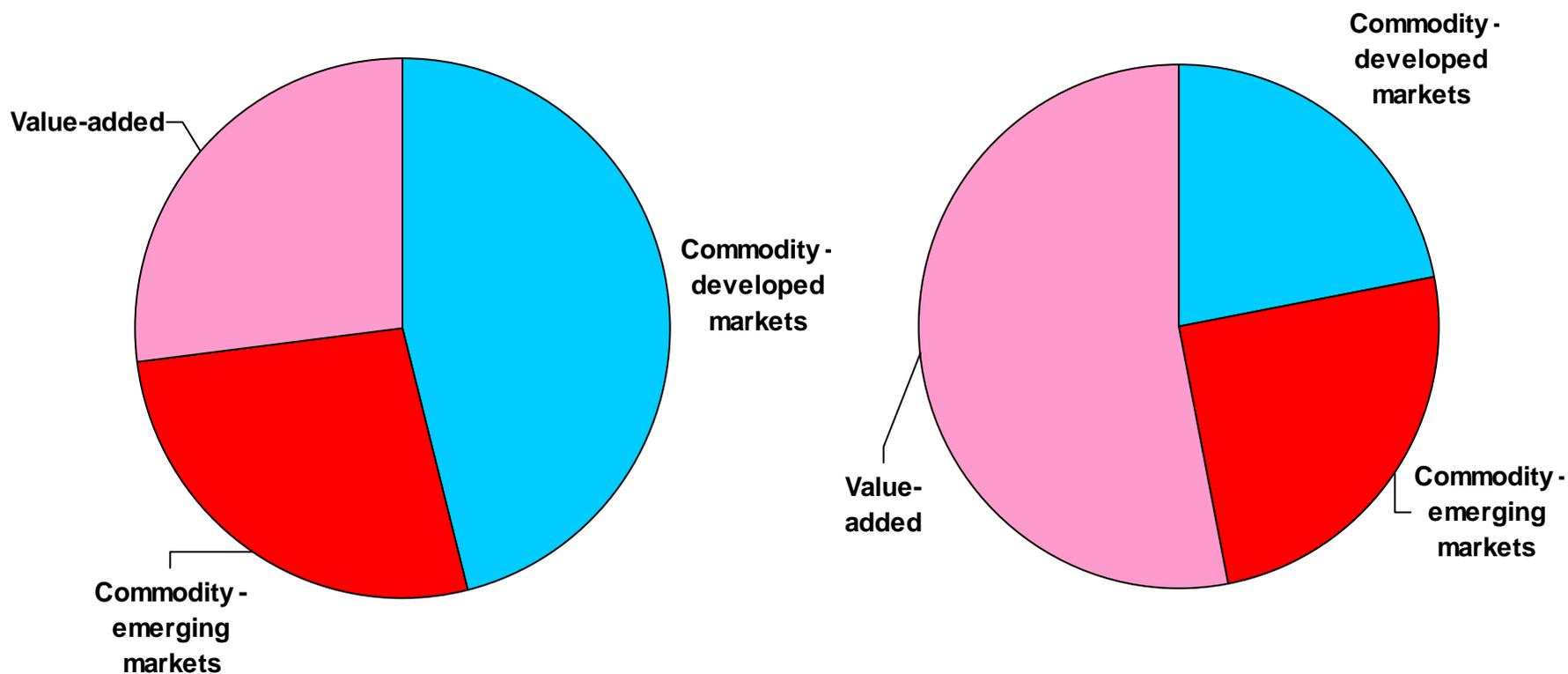
- Other Emerging Markets
 - Invest our technology and engineering resource in JVs with influential local partners to create a broad-based, flat glass business with strong routes to market
- Fire Protection
 - Invest in capacity in line with growing demand to maintain our leading global position
- Other Value-added growth products
 - Build on our technology base to expand technical applications

Leverage our technology into growth opportunities

Building Products – Float Line Roles

FY10

FY14



Shift of float line roles to value-added

Specialty Glass – value growth drivers

Key value growth drivers

- Ultra-thin float glass (UFF®)
- SELFOC® Lens Array (SLA)
- Absorbed Glass Mat (AGM) battery separator

Value Growth – Specialty Glass

Demand	Growth drivers
UFF	Newly growing applications (touch screen, cover glass) coupled with market trend moving toward thinner glass brings volume and value increase
SLA	Existing stable growth along with compact-size multi-function ink-jet printers, combined with new growth in LED printers for office-use market
AGM	Valve regulated lead-acid batteries (VRLA), for which AGM is used as standard parts, is now being re-recognized as suitable and realistic technology for eco-car, e-bike and power storage

Specialty Glass Strategic Priorities

- Move increasingly into areas where we have a clear competitive advantage through our technology and manufacturing expertise.
- Make investments to expand manufacturing capability in key growing market segments, including
 - UFF® for touch screens and cover glass.
 - SLA® for LED print head (LPH)
 - AGM battery separator
 - Glass cord
 - Metashine®
- Implement effective R&D and marketing strategies for segments in development stage
- Leverage the Group's global network to reach export markets outside Japan/Asia

Growing differentiated segments globally

Specialty Glass Growth – UFF®

- Market universe of ultra-thin float glass (UFF®) now expanding to new applications, e.g. touch screen, cover glass etc
- We are a world leader in ultra-thin float technology, especially in the 0.55-0.33 mm segment.
- The market trend is moving toward thinner glass to pursue stylish product design and weight reduction



UFF is key in smart phones, tablets and notebook PCs

Specialty Glass Growth – SLA®

- Our patent SLA® (SELFOC Lens Array) already recognized as de facto standard for compact-size multi-function ink-jet printers
- Compact-size multi-purpose ink-jet printer growth is maturing in developed countries but has strong growth potential in emerging economies
- SLA® has additional growth opportunities as unique component in LED printers, competing against laser-jet printers in the office-use market
- The distinctive optical performance of SLA® enables printer design combining compactness and energy-saving



Specialty Glass Growth – AGM Battery Separator

- NSG Group is a world-leading manufacturer of Absorbed Glass Mat (AGM) battery separators, a standard technology for valve regulated lead-acid batteries (VRLA)
- VRLA is expanding its market size in ‘eco’ cars (idling-stop, micro hybrid), electric bicycles and emergency power storage installed at data centres and in telecom networks
- We will utilize our Group’s global network and leverage our strength in manufacturing and new product development capabilities to reach the worldwide market.



Growth in eco car, e-bike and power storage markets

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- **OPERATING PROFIT (pre-amortization)** **DOUBLE, AS A MINIMUM**
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*CAGR = Compound Annual Growth Rate

Further strengthen our financial position

Conclusion

- NSG Group has made good progress moving from integration and consolidation to geographical expansion and value added growth
- Now we are transitioning to a dynamic strategic management plan to drive the next stage of our development
- NSG Group is particularly well placed to leverage its global footprint, reduced cost base, technology and brands to meet growing demand for environmental and other value added products
- Good opportunities identified in
 - Building Products - expansion in Solar Energy, low-e and South America
 - Automotive - expansion in South America, Eastern Europe & Mexico.
 - Specialty Glass – UFF, SLA® and Battery Separator
- More new growth opportunities will come from our technology pipeline

Management team committed to delivering plan results!

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 environment in major markets (such as Europe, Japan, the U.S. and Asia), product supply/demand shifts, and currency exchange fluctuations.

Nippon Sheet Glass Co., Ltd.

Appendices

Exchange Rate Assumptions

FY11

Rates used:

JPY/GBP 130

JPY/EUR 115

JPY/USD 85

Calculation of Ratios

- EBITDA
 - Is operating income after adding back amortization and depreciation.
- Net Debt
 - Is short term loans + lease obligations + bonds payable + long term loans less cash
- Net Equity
 - Is shareholders equity + valuation and translation adjustments + minority interests + stock options
- EBITDA margin
 - Is EBITDA divided by external sales
- Net debt to EBITDA
 - Net debt divided by EBITDA
- Net Debt to Equity
 - Net debt divided by Net Equity
- Return on Equity (ROE)
 - Net income after tax less dividends on preferred stock divided by Net Equity

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