

NSG

GROUP

NSG Group

Long-term Strategic Vision and Medium-term Plan

15 May 2014

Nippon Sheet Glass Co., Ltd.

- **Long-term Strategic Vision**
 - Our strategic vision is to transform the NSG Group into a **VA Glass Company**
 - This is the core concept of our strategy and the basis for our longer-term growth plans
- **Medium-term Plan (MTP)**

Sets the course of the NSG Group for the next four years

The top level objectives of our new MTP are to:

1. Achieve financial sustainability
2. Further develop the NSG Group's position as a VA glass company immediately from today

Strategic vision set on course with start of new MTP

VA Glass Company

Our aim is to:

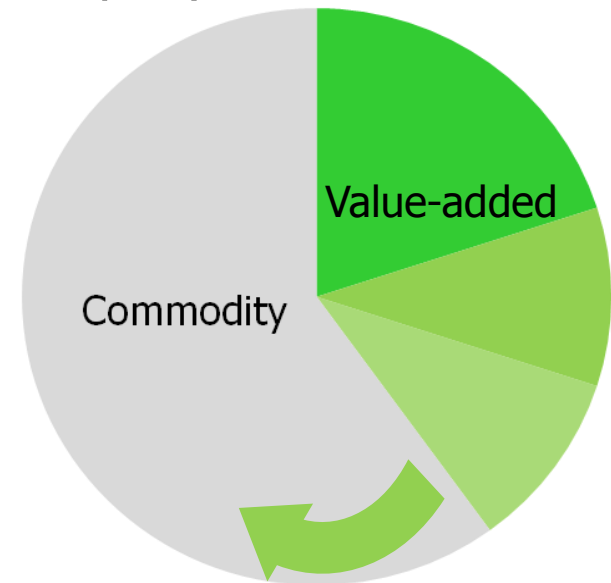
- Consolidate our trusted reputation as a glass specialist
- Work closely with our customers in a range of global industries to deliver unique value through our products and services
- Transform our flat glass business, moving from traditional business model towards one increasingly focused on VA

Aim is to pursue business with focus on value-added

Aim to be a VA Glass Company

To transform ourselves into a VA Glass Company, we will become:

- Less asset-intensive;
- Less cyclical, with greater agility; and
- A more profitable glass business



Accelerating shift to a Value-added (VA) product portfolio

MTP Evolution

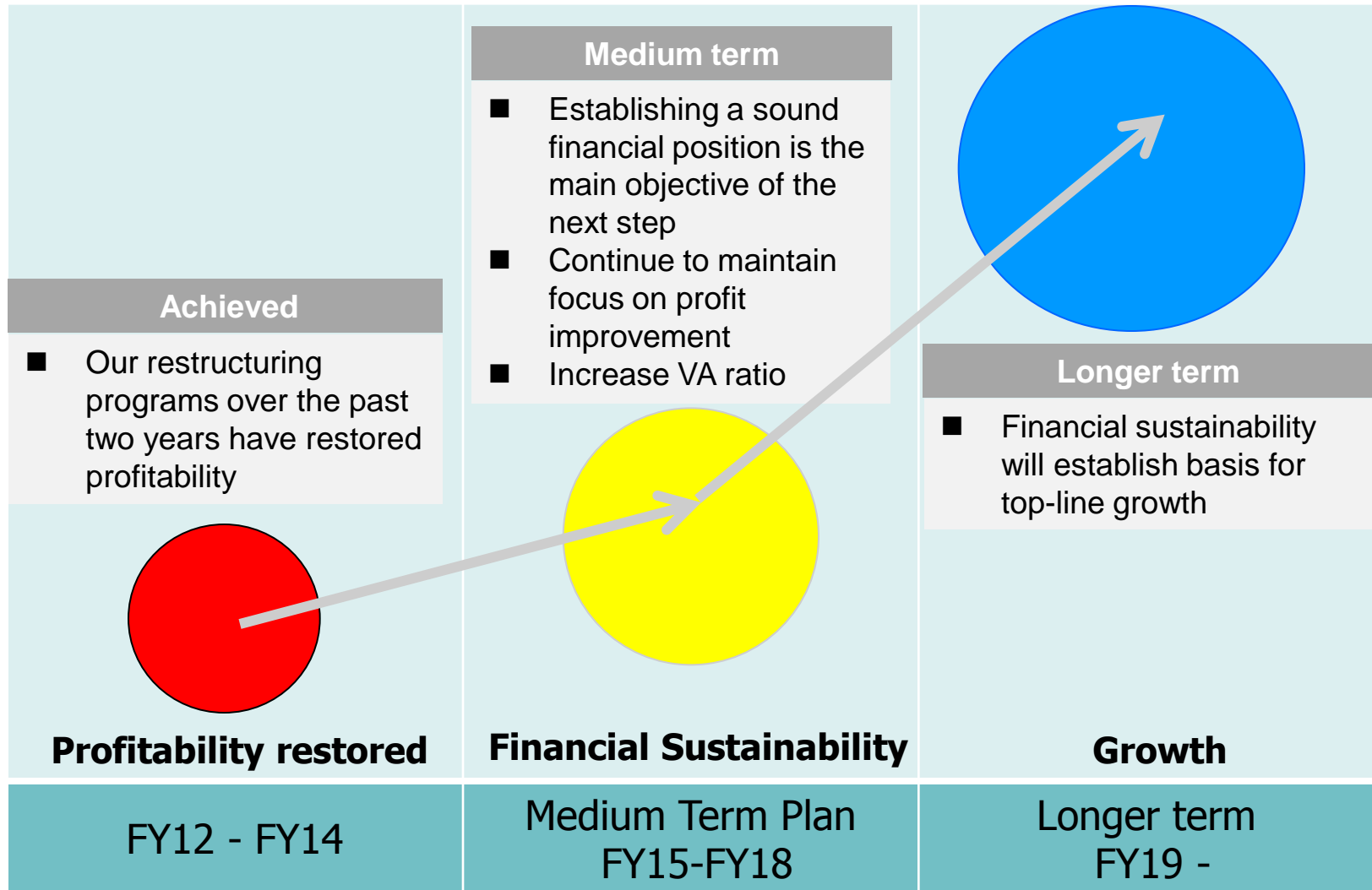
- Successful restructuring has restored profitability, helping create a leaner, lower cost organization to implement the MTP
- NSG well-positioned to capitalize on improvements in the global economy, with a balanced global footprint and business mix

- MTP focused on achieving financial sustainability, transitioning to strategic growth in longer term, based on value-added products and services
- Experienced management team, with strong leadership, aiming to create shareholder value, through ambitious but attainable financial targets

NSG
well-positioned
to move to
next stage of
development

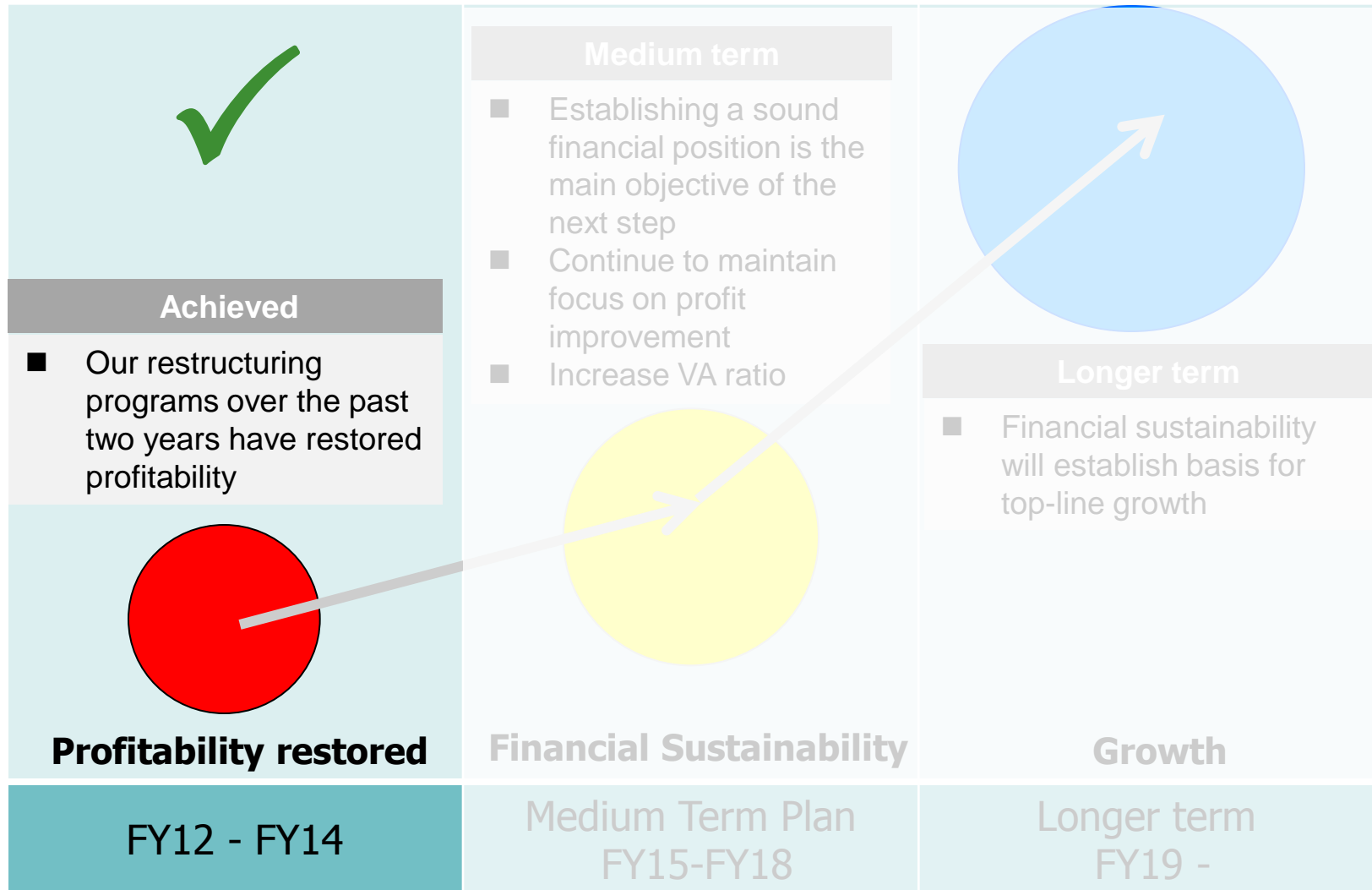
Rightsizing complete, establish financial stability and then growth

Our 3-Phase Strategy



FY15:Year to 31 March 2015

Phase 1 – Profitability Restored



Phase 1 – Restructuring Outcome

Capacity rationalization and plant closures

→ removed under-utilised assets

Overhead cost reduction

→ reduced break-even point

- 5 Float lines closed (or mothballed)
- Automotive Glass plants in Sweden and Finland closed
- Architectural Glass downstream – 8 sites closed
- Significant reduction in overhead costs
- Headcount reduction of around 6,000 people

Strong cash focus

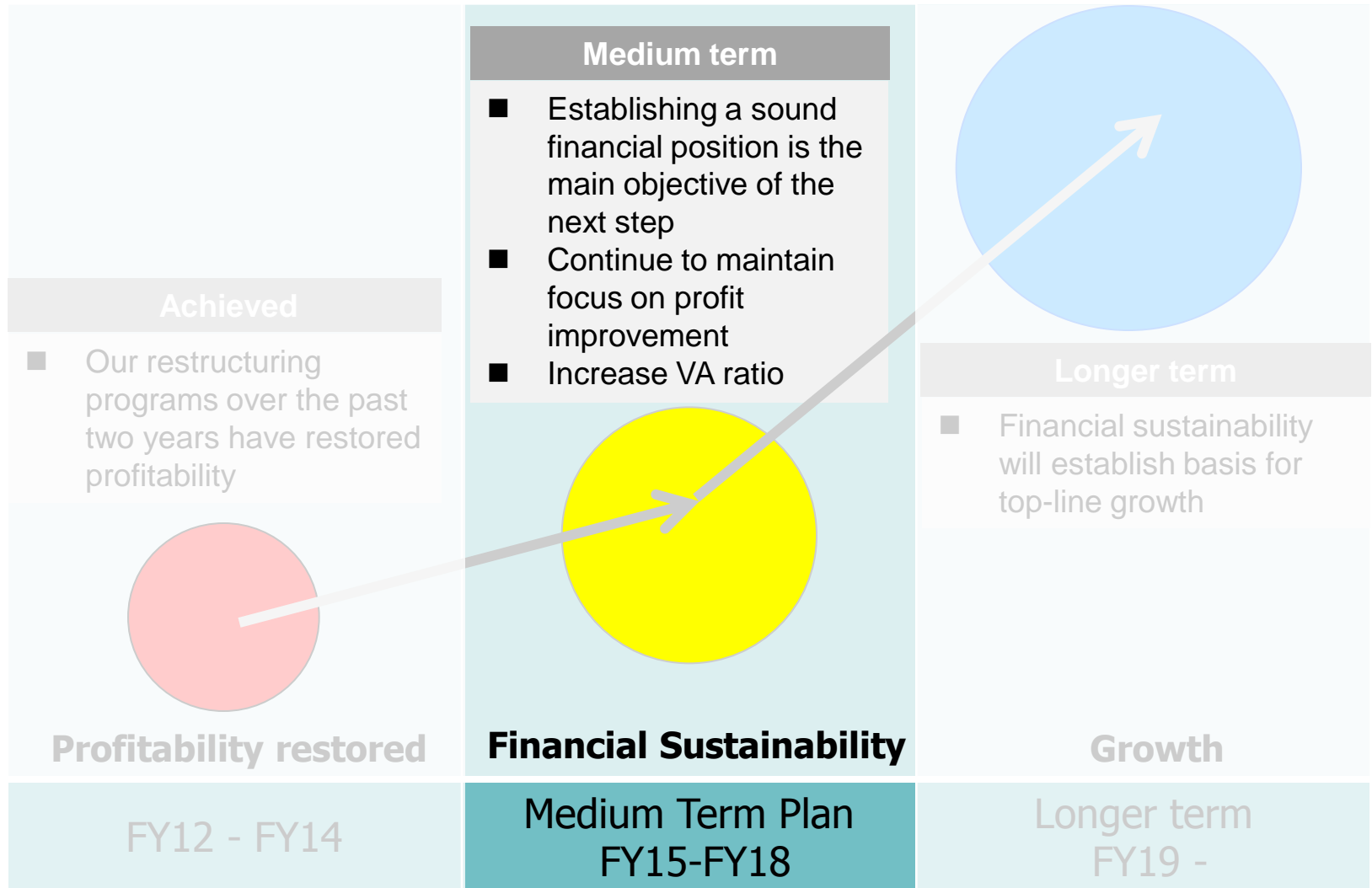
- Significant improvement in working capital
- Capital expenditure maintained below the level of depreciation
- Selective disposals of non-core assets and financial investments

Organizational change, Cost reduction

- Enhanced regional ownership to execute and implement strategy
 - Implemented operational cost savings
 - Continued manufacturing excellence initiatives

Leaner, lower-cost company to implement MTP

Phase 2 – Financial Sustainability



MTP (FY15-18) : Target and Action Plan



- Target
 - Achieve financial sustainability
 - Start transformation into a VA Glass Company
- Financial Target
 - Net debt / EBITDA : 3x
 - ROS: 8%*
- Action Plan to achieve target
 - Increase in value-added product share
 - Maximize utilization of existing assets
- Approach
 - Architectural + Automotive : improve profitability
 - Technical Glass: grow with existing businesses and new products, focus on R&D

*Operating Profit before amortization and exceptionals

Establish financial sustainability and start transformation into VA Glass Company

FY2018 Expectations

FY2018 Main Financial Targets

- Net Debt/EBITDA : 3x
- Return on Sales : 8%*

*Operating Profit before
amortization and exceptionals

Glass growth assumptions

- Developed economies:
slow recovery
- Emerging markets:
moderate growth

FY2018 projected outcomes (JPY bn)

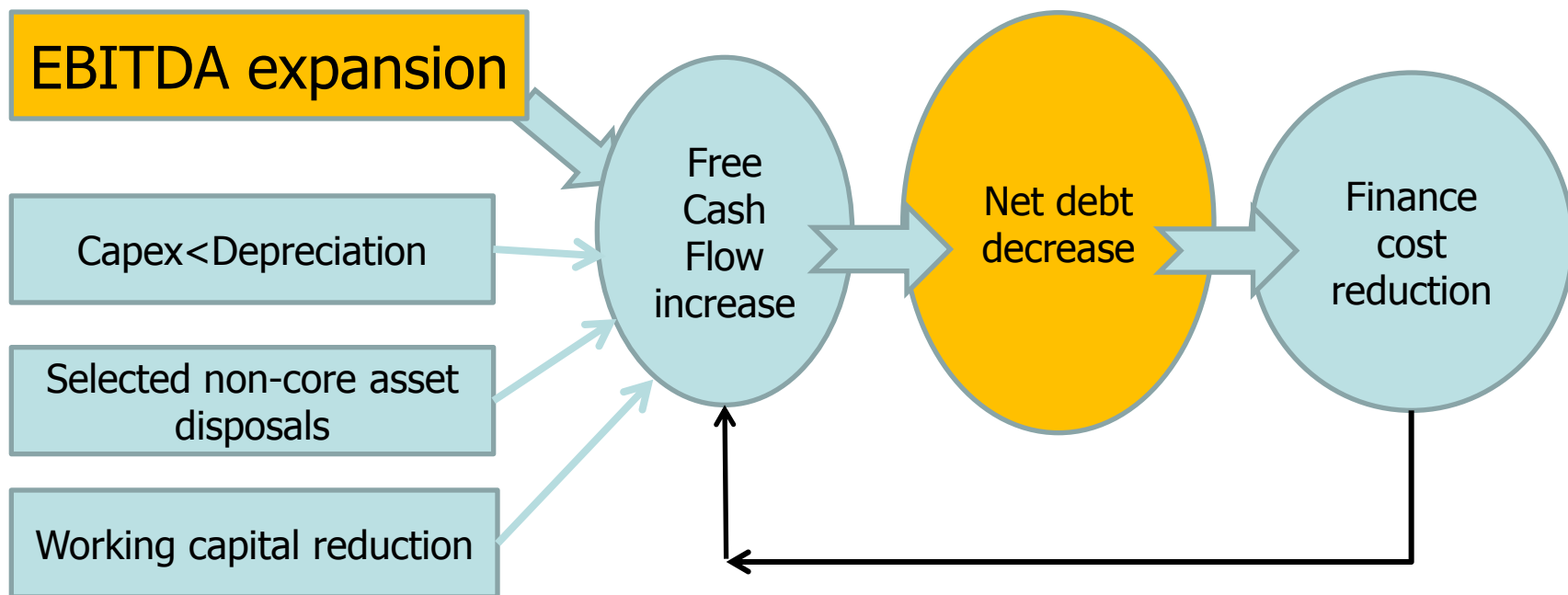
FY2014 ↓

- Revenues: ≥ 670 (606)
- Operating Profit: 60* (22)
- EBITDA: 100 (54)
- Net Debt: 300 (379)
- ROE : $\geq 10\%$

Anticipate significant profit and financial position improvement by FY18

Strategies to achieve targets - Finance Strategy

Target Net Debt/EBITDA : 3x



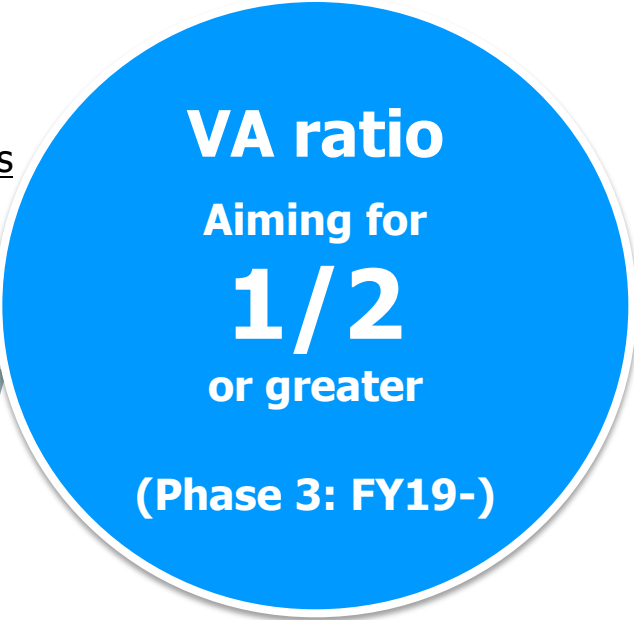
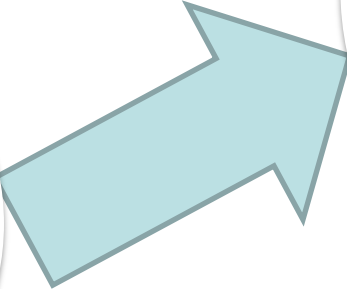
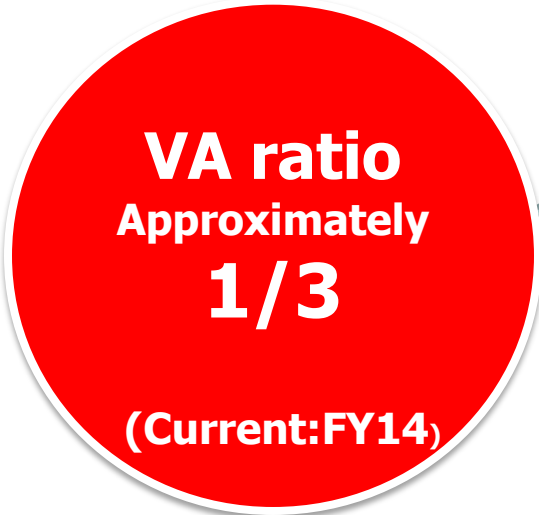
Positive spiral leads to achievement of targets

Improve financial position

Strategies to meet targets - Business Strategy

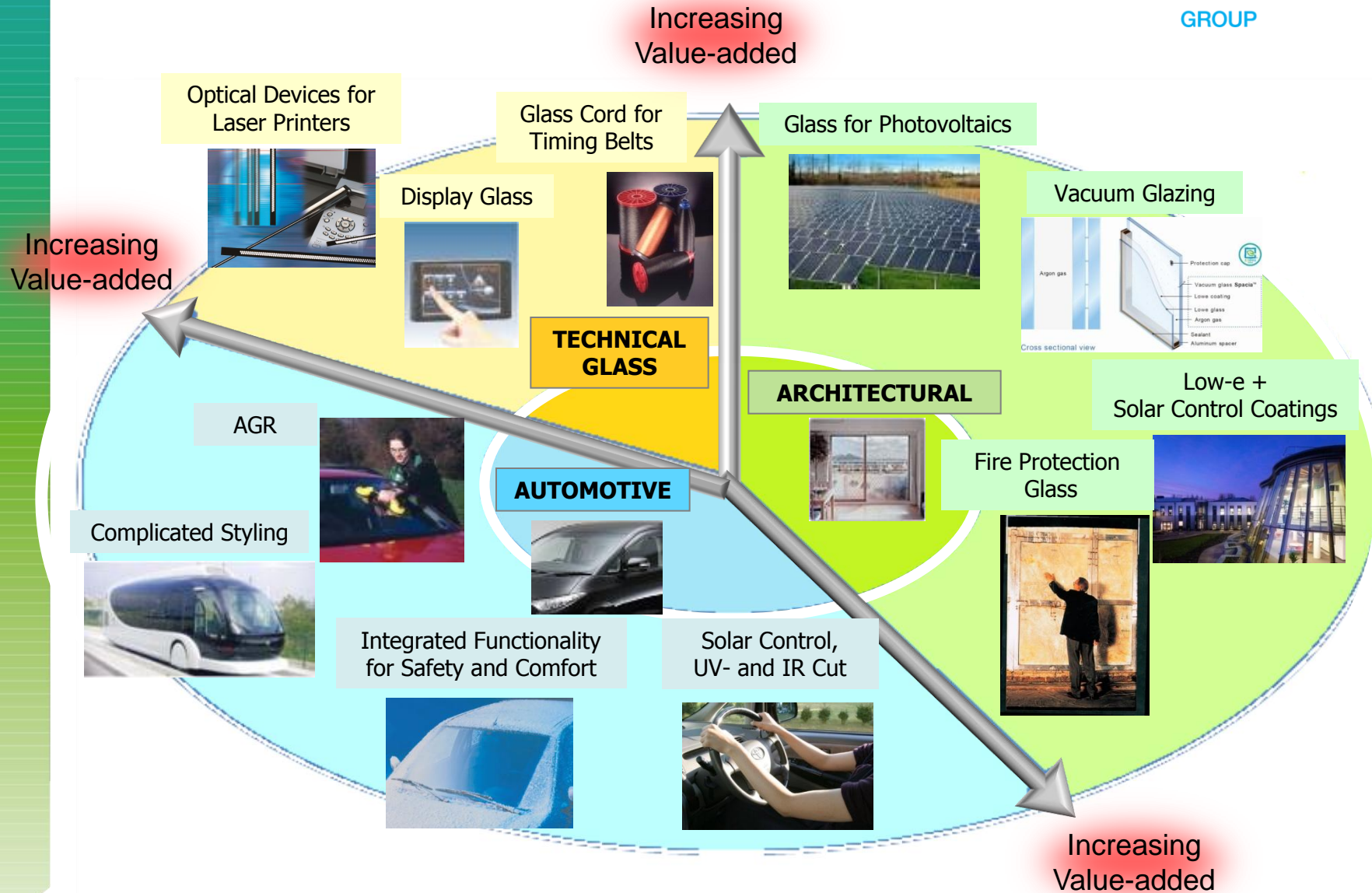
Accelerating shift to VA products

Proportion of VA products in total sales
Architectural Glass + Automotive Glass(OE) + Technical Glass



Steady increase in VA ratio

Expansion of Value-added Businesses



Full Utilization of Assets

Maximize utilization of existing assets

Step-3 Extend capacity

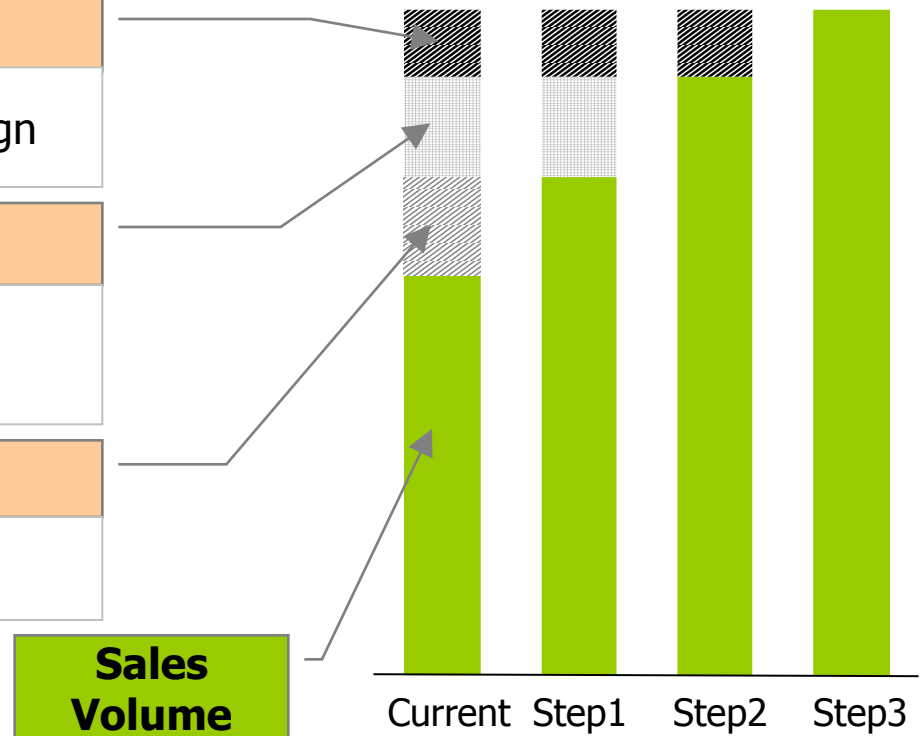
- Upgrade equipment, modify design

Step-2 Unlock hidden capacity

- Improve equipment efficiency (eg. uptime, yield, line speed)

Step-1 Load unused capacity

- Drive sales

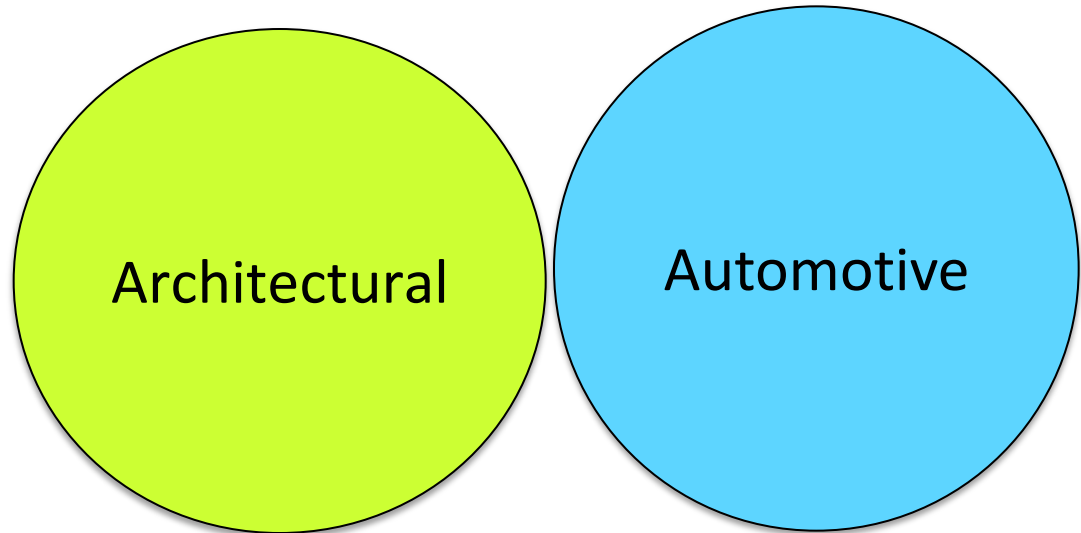


Increasing available capacity and growing sales go hand in hand

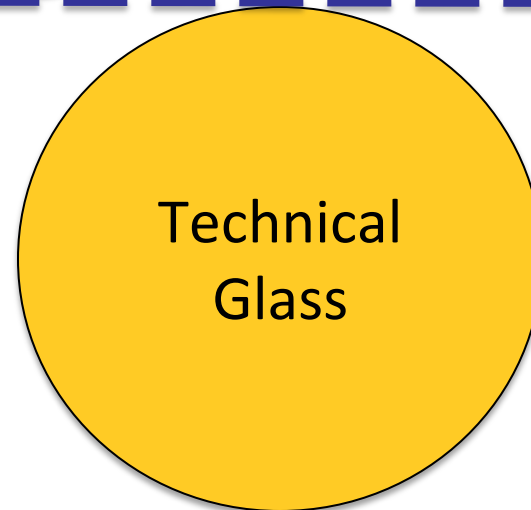
Maximizing sales volume by leveraging capacity of assets

Business Strategies by Sector

Profitability
improvement



Growth



- Market Expectation
 - slow recovery in EU, good demand in North America, legislation- driven value growth in Japan, with good growth, but volatility in emerging markets
- Business Strategy
 - maximum utilization of existing assets
 - capability upgrades to handle increase of VA products
- VA Approach
 - exploitation of leading technologies (online/offline coating, fire protection, vacuum glazing) for energy saving and conversion
 - increased share of industrial applications (solar, lighting)

Sales recovery, full utilization and mix improvement

Architectural by Region



- Europe:
 - meet advanced functionality needs
 - Super thermal insulation, fire protection, aesthetics and design
- North America:
 - exploit online coating technology, expand into non-architectural markets
 - Glass for photovoltaics and large displays, aesthetics and design
- Japan:
 - meet demand for eco-glass from energy efficiency building regulations
 - Vacuum glazing, low-e, glass for photovoltaics, aesthetics
- Rest of World:
 - respond to regional requirements
 - Mirror, tinted glass, laminates, double-glazing

Higher performance requirements everywhere – but different

- Market Expectation
 - OE: slow market recovery in EU, steady growth in North America, stability in Japan, good growth in Emerging Markets
 - AGR: moderate, but steady growth
- Business Strategy
 - maximize utilization of existing assets
 - capability upgrades to handle increase of VA products
 - operational flexibility to cope with variability of demand
 - continuous cost down to compensate inflation
- VA Approach
 - focus on additional functionality (Solar control, UV-IR Cut, light weight, integrated electronic features)
 - enhanced service offering in AGR

Sales recovery and mix improvement

Automotive by Region



- Europe:
 - load remaining facilities with recovering demand
 - benefit from advanced, integrated facility in Poland
- North America:
 - improve operational performance to improve returns from ongoing high demand
- Japan:
 - promote UV cut and IR cut products
 - cooperate with leading OEMs in developing advanced glazings
- South America:
 - market growth will be absorbed, capacity utilization will grow

Improved operation and growing VA share to drive regional profits

- **Market Expectations**
 - strong technology-driven growth in electronic and optical glass applications
 - steadily growing demand for more sophisticated car engine parts (timing belts, battery components)
- **Business Strategy**
 - work in close co-operation with technology partners and customers
 - develop existing product range in line with technology development
 - launch new innovative products in core and adjacent sectors
 - exploit own technologies for new applications
- **VA Approach**
 - increase investment in R&D
 - focus on thin glass, advanced compositions, optical and opto-electrical technology and special glass fibers

Technology-driven growth with enhanced and new products

- Display:

thin glass market continues to grow because of expansion of touch panel applications

- Vietnam Ultra Fine Flat float line in full scale production from October 2014
- new composition for competitive solutions in advanced cover glass segment

- Information Device:

Office-use printer market continues to grow

- increasing demand for LED type printers with Selfoc Lens Array®
- new optoelectronic products in development

- Functional Products:

- glass cord: growing share of rubber belts in car engines
- higher performance batteries require enhanced separators

Revenue and profit growth in all divisions

MTP Resource Allocation



- The Group expects Capital Expenditure in the period covered by the MTP to be below depreciation
- New developments in R&D productivity will support delivery of the MTP, with the Group's R&D effort increasingly focused on the next generation of VA products and services

The Group expects to invest around 350 oku in R&D during the course of the MTP

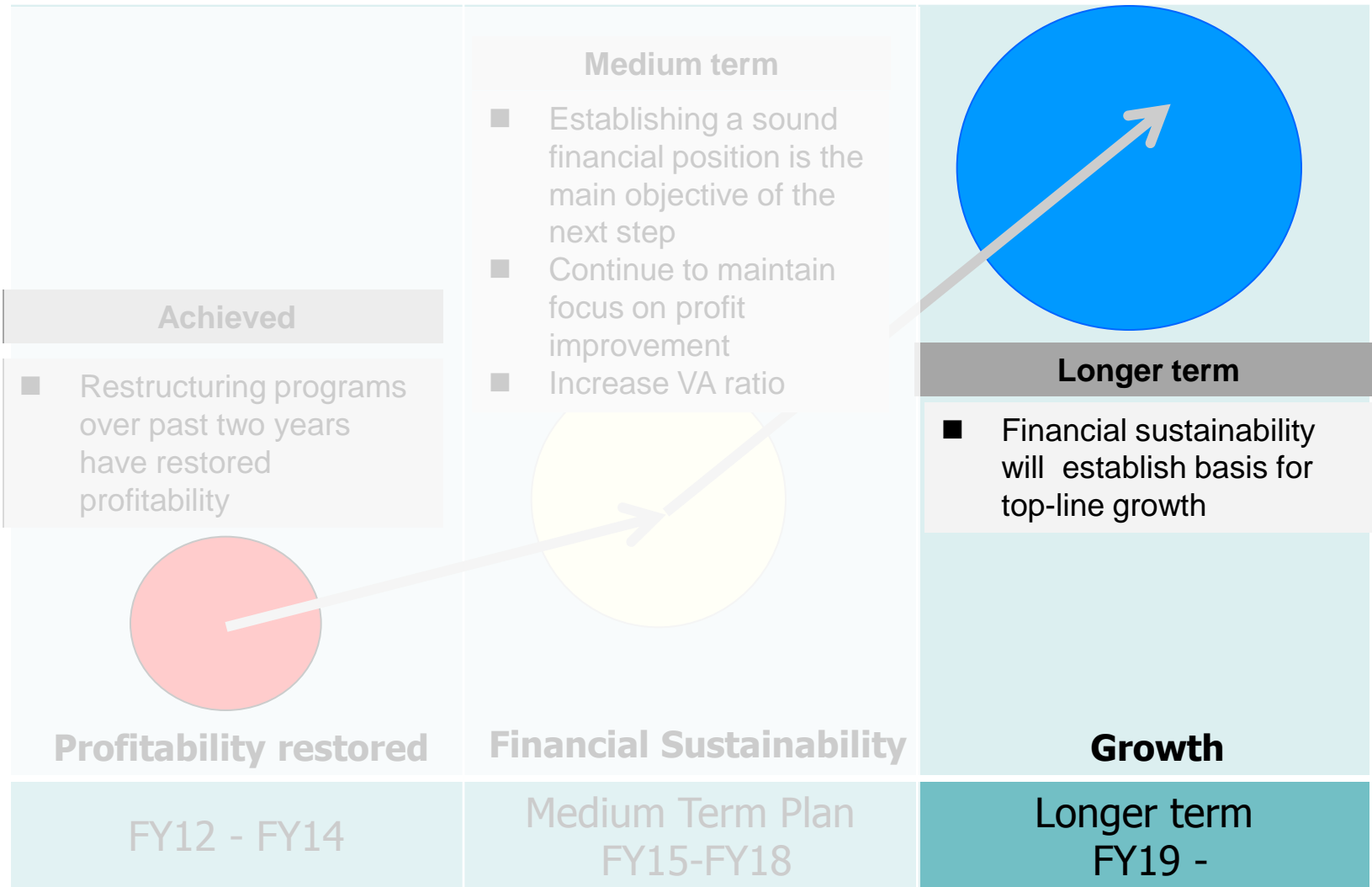
Capex below depreciation. R&D investment to support MTP delivery

1. Strategic Vision Grow profitably as a VA Glass Company
2. MTP Framework (From April 2014 to March 2018)
 - Objectives • First priority is to achieve financial sustainability
 - Direction • Transition from a restructuring to growth phase
 - Focused on enhancing operational performance, increasing profitability and creating a more financially stable Group
 - Financial Target • Net Debt/EBITDA : 3x (FY2014:7x)
 - Return on Sales : 8%*
 - Strategy • Increasing shift to value-added products
 - Full utilization of existing capacity
 - Consolidating our reputation for manufacturing excellence (cost, quality)
 - Selective Capex (less than depreciation)
 - Macroeconomic background • Developed countries: slow and steady recovery,
 - Emerging countries: moderate growth but at a subdued pace

*Operating Profit before amortization and exceptionals

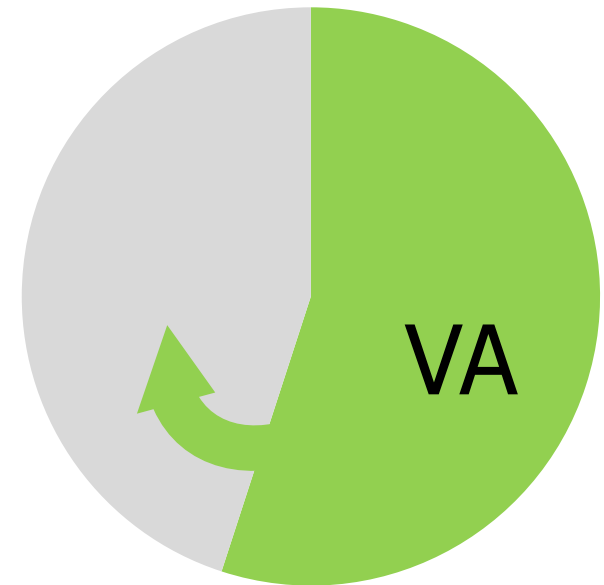
Enhancement of profitability and operational performance

Phase 3 – Growth



Phase 3 - Growth

- Further strengthen financial foundations
- Capability to proactively invest in growth opportunities and R&D
- Create highly value-added products in architectural, automotive, technical glass and new business creation
- Products with leading positions in semi-niche segments, that provide unique functionality and technical properties
- VA ratio of sales to be more than 50%
- Less cyclical as an entire business model
- A group structured with a lighter asset base and higher profitability



Growth will follow margin improvement, built on solid foundations

Key Points



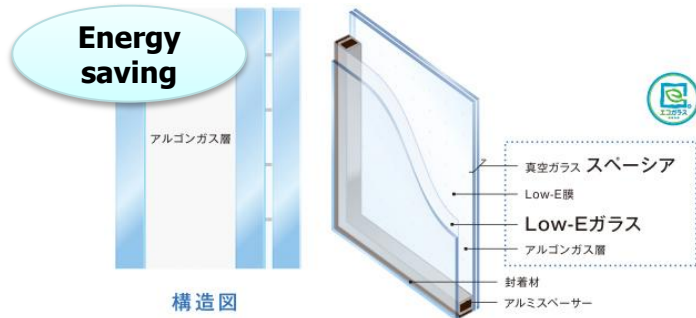
- MTP focused on achieving financial sustainability, transitioning to strategic growth in longer term, based on value-added products and services
- Successful restructuring has restored profitability and helped create a leaner, lower cost organization to implement the MTP
- NSG well-positioned to capitalize on improvements in the global economy with a balanced global footprint and business mix
- An experienced management team, with strong leadership, committed to creating shareholder value, with ambitious but attainable financial targets
- Overall aim is enhancement of profitability and operational performance

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.

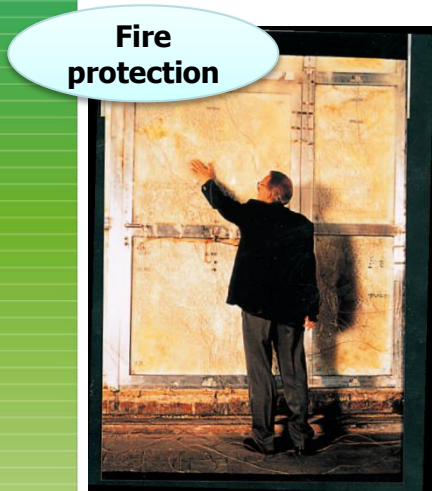
Nippon Sheet Glass Co., Ltd.

Appendices

Architectural Value-Added Products



TEC glass : Large display with touch panel



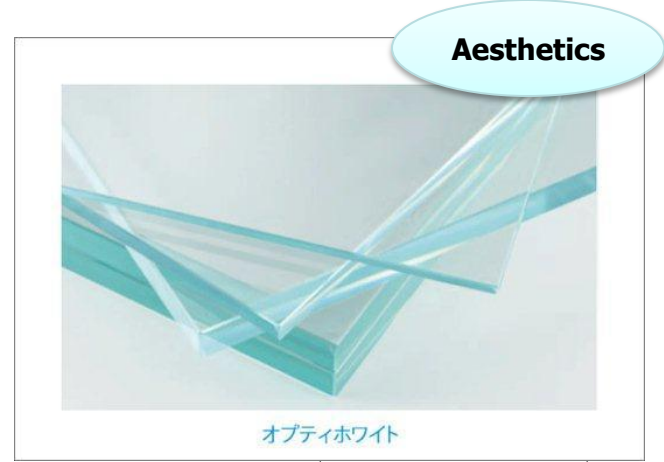
Pyrostop

Specia21

Architectural glass Value-Added products



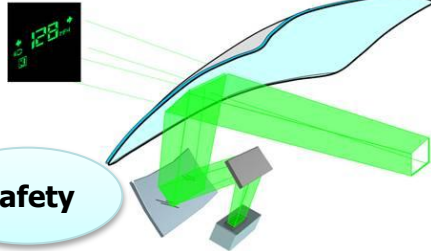
Solar



オプティホワイト
Optiwhite (High transmission glass)

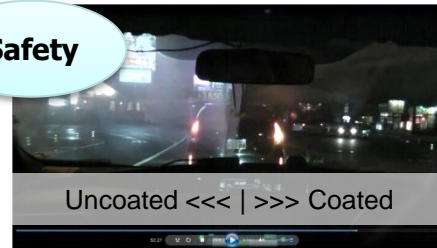
Automotive Value-Added Products

Head up display



Safety

Safety



Uncoated <<< | >>> Coated

Anti-fogging glass

Light-weight



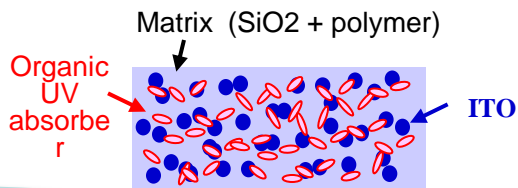
Thin glass manufacturing technology



Safety

Wire heated glass

Automotive glass Value-Added products



Comfort

Glass

UV+IR cut

Security



Laminated front door glass

Convenience



Antenna technology

Technical Glass Value-Added Products

Functional Products



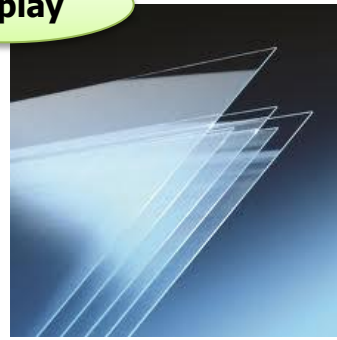
Battery separator for idling start and stop system

Information Device



SLA for LPH

Display



UFF for cover/touch panel glass

Technical glass Value-Added products

Functional Products



Glass cord for belt in oil

Functional Products



Glass flake for anticorrosion paint



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