

SUSTAINABILITY REPORT 2014

**MAKING A DIFFERENCE  
TO OUR WORLD THROUGH  
GLASS TECHNOLOGY**



# WELCOME TO OUR SUSTAINABILITY REPORT 2014

We are an innovative, forward-thinking glass technology company built on a foundation of many years of expertise. Our global team is committed to developing and manufacturing products that meet the needs of current customers, and open up new markets through continuous research, development and innovation.

We are committed to sustainable development. Working safely and ethically, we supply high-quality glass products that make an important contribution to improving living standards, to people's safety and wellbeing and to energy conservation and generation.

Glass manufacture is energy-intensive, but our products make a major contribution to energy conservation during their life cycle.

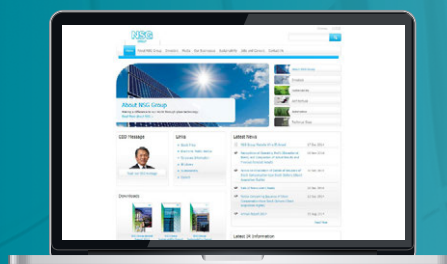
#### Cover picture

Blue Point in Warsaw, Poland features Pilkington **Insulight™** Sun

Photo: Wojciech Kryński.

Read more online:

<http://www.nsg.com/>



## ABOUT THIS REPORT

DURING 2014, WE MADE FURTHER PROGRESS IN EMBEDDING THE PRINCIPLES OF SUSTAINABLE DEVELOPMENT WITHIN OUR COMPANY.

AS MEMBERS OF THE UN GLOBAL COMPACT, WE CONSIDER ITS 10 PRINCIPLES TO BE A NATURAL EXTENSION OF OUR CODE OF CONDUCT, WHICH DEFINES OUR COMMITMENT TO SOCIAL AND ENVIRONMENTAL RESPONSIBILITY.

THE BENEFITS OF OUR MAJOR RESTRUCTURING AND EFFICIENCY PROGRAMS ARE REFLECTED IN OUR REDUCED CO<sub>2</sub> EMISSIONS AND RESOURCE CONSUMPTION.

THE GROUP'S PROGRESS TOWARDS OUR SUSTAINABILITY TARGETS IS COVERED IN THIS REPORT AND ON OUR WEBSITE.

ADDITIONAL INFORMATION, CHARTS AND TABLES COVERING OUR PERFORMANCE ARE SHOWN IN THE SUSTAINABILITY SECTION OF OUR WEBSITE, [WWW.NSG.COM/SUSTAINABILITY](http://WWW.NSG.COM/SUSTAINABILITY).



## CONTENTS

### ABOUT US

President and CEO's message	02
Our global operations	03
Chief Operating Officer's message	04
2015 Sustainability targets	05



About us

### MANAGEMENT

Our approach to sustainability	06
Corporate governance	10



Management

### OUR BUSINESS

Business overview	12
Architectural	14
Automotive	16
Technical Glass	18



Our Business

### ENVIRONMENT

Environmental policies and management	20
Energy usage	22
Minimizing environmental impact	24



Environment

### OUR STAKEHOLDERS

Employees	26
Health and safety	28
Customers	30
Suppliers	32
Communities	34
Shareholders	36



Our Stakeholders

### BASIS OF REPORTING

GRI index	38
Further information	40
Approach to reporting	IBC



Basis of Reporting

## PRESIDENT AND CEO'S MESSAGE

THE NSG GROUP IS COMMITTED TO SUSTAINABLE DEVELOPMENT. OUR STRATEGY AND POLICIES RESPOND TO THE CHALLENGES WE ALL FACE IN MANAGING THE WORLD'S LIMITED RESOURCES.



We deliver products and services of unique value that contribute to improving living standards, people's safety, wellbeing and to the generation and conservation of energy.

We aim to achieve our sustainability objectives by balancing the needs of all our stakeholders, managing the environmental impact of our activities, developing our people and encouraging innovation in processes and products. Working in harmony with the communities in which we operate, we encourage our customers, contractors and suppliers to do the same.

Our policies underline the contribution our products can make to addressing climate change. We are constantly improving our own energy efficiency and resource management. Our 2014 greenhouse gas emissions reduced by 7% to 4.2 million tonnes by improving capacity utilization and energy efficiency in our operations.

We aim to make a positive environmental contribution to the value chains in which we operate, while benefiting from the growing international demand for our products that help improve energy efficiency. Glass has an important contribution to make in helping to reduce greenhouse gas emissions.

We collaborate with stakeholders in the framing of policies and regulations to help improve energy efficiency through the use of glass. As members of the UN Global Compact we support the advancement of its 10 principles. We consider these to be a natural extension of our Code of Conduct, which defines our commitment to social and environmental responsibility.

We will continue to embed the principles of sustainability within the NSG Group.

吉川 恵治

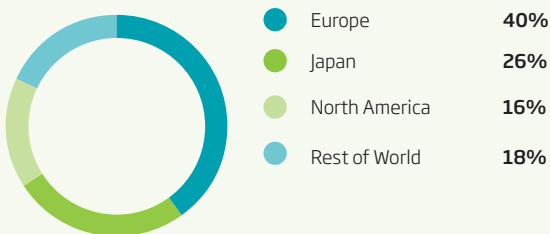
**Keiji Yoshikawa**  
Representative Executive Officer  
President and CEO

## OUR GLOBAL OPERATIONS

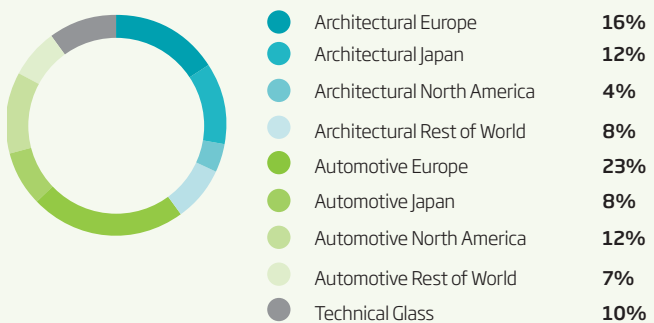
THE NSG GROUP IS ONE OF THE WORLD'S LARGEST MANUFACTURERS OF GLASS AND GLAZING PRODUCTS FOR THE ARCHITECTURAL, AUTOMOTIVE AND TECHNICAL GLASS SECTORS. WITH AROUND 27,000 PERMANENT EMPLOYEES WE HAVE PRINCIPAL OPERATIONS IN 28 COUNTRIES AND SALES IN OVER 130.

### Consolidated Revenue

By region



By business



**ARCHITECTURAL** - supplies glass for buildings and solar energy applications

**AUTOMOTIVE** - supplying all major vehicle manufacturers and the after markets

**TECHNICAL GLASS** - market leader in glass for specialized applications



## CHIEF OPERATING OFFICER'S MESSAGE

THE GROWTH SECTOR WITHIN THE GLASS AND GLAZING MARKETS IS FOR MORE VALUE-ADDED (VA) PRODUCTS AND SERVICES CONTAINING GREATER COMPLEXITY AND FUNCTIONALITY THAT SUPPORT SOCIAL AND ENVIRONMENTAL SUSTAINABILITY.

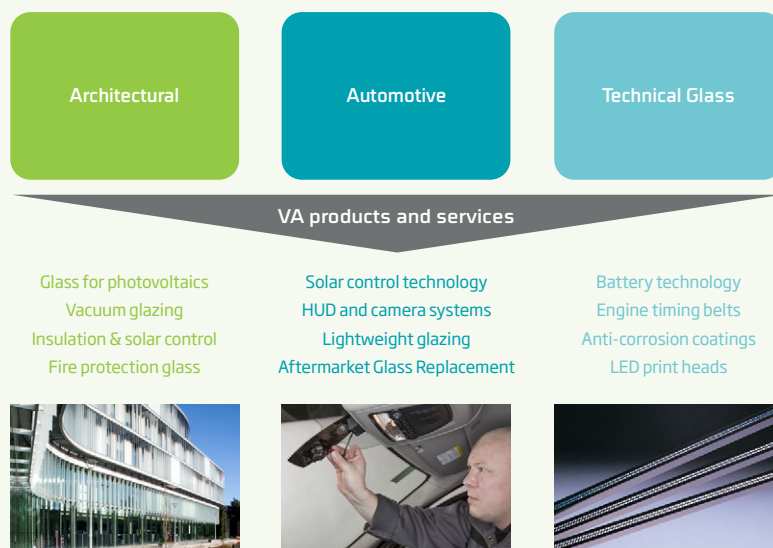


The Group already has a wide range of VA products, not only in our Technical Glass business unit but also in our Architectural and Automotive units.

Operational performance will focus on our shift to selling a greater proportion of VA products and services, fully utilizing our existing capacity and consolidating our reputation for manufacturing excellence. This is leading to significant and lasting contributions to energy conservation and generation in the world we live in.

Our strategic vision, as a VA Glass Company, is focused on developing new and innovative products in all of our business lines. The Group is also working closely with our customers in a range of global industries to deliver products and services that support their sustainability objectives.

We are focused on making consistent and meaningful contributions to sustainable development through our products and services. Good management of our people, our resources, our communities and our environment makes good business sense.



**Clemens Miller**  
Chief Operating Officer

# 2015 SUSTAINABILITY TARGETS

Targets	Current position and commentary
<p><b>Economic</b></p> <p>We aim to achieve a sustainable operating profit margin in excess of 10 percent.</p>	<p>As at March 2014, the Group's operating profit margin (before amortization arising on the acquisition of Pilkington) was 3.7 percent. Our medium term plan sets an FY18 operating profit margin target of 8 percent.</p>
<p><b>Energy</b></p> <p>Report specific direct energy usage for eight key products, across all three business lines, and demonstrate improvement by 2015.</p> <p>Work in this area is the subject of a number of R&amp;D programs in all three business lines.</p>	<p>The eight key products selected are as follows:</p> <p><b>Architectural</b></p> <ul style="list-style-type: none"> <li>• Clear float glass</li> <li>• Online CVD coated Solar TEC glass for the thin film PV market</li> <li>• Offline coated Low-e glass for the construction market</li> </ul> <p><b>Automotive</b></p> <ul style="list-style-type: none"> <li>• Solar green absorbing glass side glazing</li> <li>• IR reflective glass laminated windshield</li> <li>• Galaxsee privacy glass rear sidelight</li> </ul> <p><b>Technical Glass</b></p> <ul style="list-style-type: none"> <li>• NSG Glasscord® used in engine timing belts</li> <li>• NSG Selfoc Lens Array for use in office machinery</li> </ul> <p>Data for the selected products is available in the Sustainability section of <a href="http://www.nsg.com">www.nsg.com</a>.</p>
<p><b>Product development</b></p> <p>Report energy payback/life cycle analysis for eight key products, across all three business lines, and demonstrate improvement by 2015.</p> <p>Good progress made with a number of R&amp;D programs ongoing. A forward look at future/modified products and their impact on improved CO<sub>2</sub> payback has been initiated.</p>	<p>The eight key products selected are as follows:</p> <p><b>Architectural</b></p> <ul style="list-style-type: none"> <li>• A thin film PV module</li> <li>• A double-glazed unit containing our offline coated low-e product</li> <li>• A double-glazed unit containing our offline coated solar control product</li> </ul> <p><b>Automotive</b></p> <ul style="list-style-type: none"> <li>• Car windshield</li> <li>• Car sidelight</li> <li>• Car roof light</li> </ul> <p><b>Technical Glass</b></p> <ul style="list-style-type: none"> <li>• NSG Glasscord® for use in engine timing belts</li> <li>• NSG Selfoc Lens Array for use in office machinery</li> </ul> <p>Data for the selected products is available in the Sustainability section of <a href="http://www.nsg.com">www.nsg.com</a>.</p>
<p><b>Health and safety</b></p> <p>Significant Injury Rate 80 percent reduction from 2007 base of 1.38 to 0.30 (10 SI per month, compared to baseline of 50).</p>	<p>The SIR at the end of FY2014 was 0.39 which represents a 72 percent improvement.</p> <p>Our FY2015 target is a further 20 percent reduction on FY2014 to provide a safer place of work for our employees.</p>
<p><b>Supply chain</b></p> <p>The NSG Supplier Code of Conduct (SCoC) is to be communicated to all of our suppliers and a process implemented to obtain acceptance. We aim to evaluate over 300 suppliers against our SCoC by end of 2015.</p>	<p>We are using a number of processes to continue to communicate our SCoC to our supply base. We request our suppliers to acknowledge their understanding of and agreement to our SCoC. Good progress is being made with acceptance of the SCoC and we have now completed over 200 SCoC evaluations.</p>
<p><b>Recycling and waste</b></p> <p>Reduce the waste we send to landfill by 50 percent, from a 2007 base (i.e. from approximately 46 kt to 23 kt by 2015).</p>	<p>Our waste to landfill figure for 2014 was 21 kt. This is a 54 percent reduction on our baseline.</p> <p>Further waste reduction activities are ongoing to reduce the quantity of waste generated and to increase our recycling rate.</p>
<p><b>People</b></p> <p>All employees to have a training and development review annually, with a target compliance level of 90 percent by 2015.</p>	<p>In 2014 91 percent of shop floor FT employees have had a 1-1 review or attended a briefing on site/dept training plan, where the L &amp; D process has been implemented. The Group target has therefore been achieved.</p>

## OUR APPROACH TO SUSTAINABILITY

GLASS HAS A MAJOR PART TO PLAY IN SOCIETY'S EFFORTS TO REDUCE GREENHOUSE GAS EMISSIONS AND TO MITIGATE THE EFFECTS OF CLIMATE CHANGE. WE AIM TO BE THE GLOBAL LEADER IN INNOVATIVE HIGH-PERFORMANCE GLASS AND GLAZING SOLUTIONS, CONTRIBUTING TO ENERGY CONSERVATION AND GENERATION, WORKING SAFELY AND ETHICALLY.



Our major restructuring has now been completed and we have achieved a significant improvement in resource efficiency. We maintain our commitment to the core principles embodied in our sustainability policies.

The NSG Group's new vision to become a value-added glass company will lead to the development of new products and services that add value to society. We strive to develop innovative products and processes that give increased benefits to our customers and reduce environmental impact throughout the product lifecycle.

Our efficiency programs are continuing to deliver reductions in energy consumption, greenhouse gas emissions and waste production.

We train and develop our people while respecting their human rights and keeping them safe from workplace injuries or occupational illness.

We encourage our contractors and supply chain to take similar steps through the ongoing evaluation of our key suppliers' sustainability practices.

**Shiro Kobayashi**  
Director of Sustainability



Our sustainability agenda is integral to decreasing our costs and increasing our market opportunities. Over the past year, we have continued our efforts in areas such as energy reduction and waste recycling; both of which can have a significant and swift impact on the business performance of the Group. Glass markets are extremely competitive around the world and it is imperative that we can meet the ever-increasing demands of customers.

We work with communities and governments in the areas we operate to ensure compliance and forward-looking thinking. We do this directly and through our membership of trade associations, standards bodies and other organizations. We also work to influence legislation, particularly in the areas of energy conservation and emission regulation.

Glass making is an energy-intensive process. Significant energy is consumed in obtaining and melting the raw materials for the manufacture of glass. Despite this necessary resource consumption, this energy can be quickly saved when many of our products are in use. Our products make a tremendously positive contribution to climate change efforts and to the quality of living and working environments.

Our leadership team remains actively committed to our environmental and safety programs. In 2014, we launched the NSG Group Environmental and Safety Awards and repeated the successful annual NSG Group Safety Day to reinforce this commitment.

We have communicated our Supplier Code of Conduct to our suppliers and have conducted evaluations to verify the declarations we have received. Our products require raw materials and energy that must be extracted from the earth. Therefore we take seriously our responsibility to protect the natural habitats of the affected regions.

**Our vision...**

...defines our determination to make a positive contribution to sustainability, through our expertise in glass technology.

Making a difference to our world through glass technology.

**Our mission...**

...describes how we will achieve our business objective, contributing to energy conservation and generation by producing and supplying innovative products in a sustainable manner.

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

**Our values...**

...define the behaviors we value and intend to follow in all our dealings with our stakeholders.

**Our Code of Conduct...**

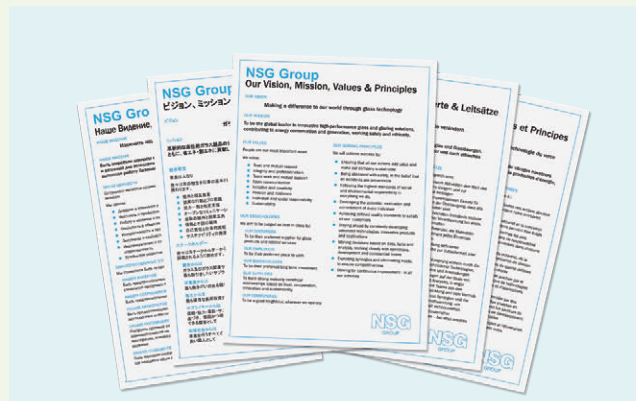
...sets out the standards we expect of everyone working in the NSG Group.

Our Code of Conduct reflects our values and principles, particularly the emphasis on safety, taking personal ownership for actions and communicating with openness and involvement.

The overriding basis of the Code is that we will carry out these activities in a safe, professional, legal and ethical manner and in a way that demonstrates corporate social responsibility and promotes sustainability. Wherever possible, the Code defines a fair and common sense approach to doing business, with some elements dictated by strict legal requirements.

**Our Group policies and procedures...**

...detail the procedures everyone in the Group must follow to achieve sound governance, tight controls, risk management and adherence to legal, ethical and sustainable principles.



**Our stakeholders**

We aim to be judged as best in class by:

**Our customers**

To be their preferred supplier for glass products and related services.

**Our employees**

To be their preferred place to work.

**Our shareholders**

To be their preferred long-term investment.

**Our suppliers**

To build strong mutually beneficial relationships based on trust, co-operation, innovation and sustainability.

**Our communities**

To be a good neighbor, wherever we operate.

# OUR APPROACH TO SUSTAINABILITY

## CONTINUED

### Our management approach

#### Environmental

We take our environmental responsibilities extremely seriously. All our operations are required to meet all legislative standards as a minimum, and where local requirements are not considered sufficient to address an issue, our own corporate standards are applied. We conduct regular environmental audits designed to achieve continuous improvement, and to maintain and raise standards.

Our Group Environmental Policy defines our approach on environmental matters. In particular, it outlines our management of both current activity and the legacy of past and inherited liability. It reinforces our commitment to using good scientific principles to try to predict and assess our impacts on the environment.

We acknowledge that our activities will inevitably affect the local and global environment but we have taken steps to minimize any adverse effects and have put in place systems to try to ensure that we manage such impacts in a controlled manner. Principal among the tools we use is our environmental management system, which is certified to ISO 14001 for the vast majority of our glass manufacturing and automotive manufacturing sites.

# 70%

We now have 81 ISO14001 certified sites around the world, representing 70 percent of our business by turnover.

We are committed to reporting on our performance, both good and bad. Environmental data is collected under the broad headings of energy, emissions to air, water usage, recycling and waste. The data collected is based primarily on the core environmental performance indicator set of the Global Reporting Initiative (GRI). In addition to the collection of environmental emissions and resource usage data, the Airsweb™ system also incorporates an incident reporting system. The most senior executive with responsibility for environmental aspects is the Group Director of Sustainability.

#### Society

We believe we have a responsibility to be a good steward of the environment and a responsible corporate citizen in the communities in which we operate. We monitor carefully the impact of our operations on the local communities in which we operate. We work hard to minimize potentially negative effects, such as pollution, noise and traffic. We operate programs that assess and manage the impacts of our operations on communities, in entry, operational and exit stages.

In addition to our business investments, helping to sustain local operations, we also invest in the communities in which we operate.

We aim to help through direct cash donations to charities and other projects or through in-kind resources – to improve the health of the community or tackle specific social issues. We also encourage our people to play a part in developing our community relationships. This can take the form of matching contributions raised by employees or allowing individuals time to make personal contributions of time and effort in local projects. The most senior position with responsibility for society aspects is the Group Director of Sustainability.

#### Human rights

Our Code of Conduct defines our expectations for all employees. It reflects our values and principles, particularly the emphasis on safety, taking personal ownership for actions and communicating with openness and involvement. The overriding basis of the Code is that we will carry out these activities in a safe, professional, legal and ethical manner and in a way that demonstrates corporate social responsibility.

The Code acknowledges internationally proclaimed human rights and these are also reflected in our overall employment policies and standards, providing our employees with reassurance on how they will be treated. Our equal opportunity and diversity policy aims to prohibit discrimination based on race, color, creed, religion, age, gender, sexual orientation, national origin, disability, union membership, political affiliation or any other status protected by law. This policy operates in all employment-related decisions. The most senior executive with responsibility for human rights aspects is the Chief Human Resources Officer.

#### Labor practice

Our management philosophy values people as 'the most important asset of our company'.

Our HR strategy aims to ensure we have the right people where they are needed and that we maximise our talent management around the world.

Safety and quality underpin everything we do, with the principle of 'open communication' central to our employment policies. Our human resources strategy aims to ensure we have the right people where they are needed and that we maximize our talent management around the world.

We operate as an integrated international Group, with a multinational management and 80 percent of our employees working outside Japan. We reflect diversity in our workforce and believe that the range of nationalities, skills, qualifications and experience available in our many operations are a positive benefit to our business. Our management style is to put the best person in each job, regardless of nationality or region.

To attract, motivate, develop and retain high-performing employees, our approach on rewards and retention includes market-based competitive pay and market-based competitive benefit offerings for eligible full- and part-time employees.

We have identified specific challenges in attracting and retaining talent, particularly in emerging markets, and we are already putting in place policies to address these. We work to create a culture that allows employees the opportunity to work without fear of intimidation, reprisal or harassment. We have systems in place to permit employees to raise any concerns in a confidential and timely manner. The most senior executive with responsibility for labor aspects is the Chief Human Resources Officer.

We value the health and safety of all our employees above all other considerations and aim to ensure that we provide a working environment that allows our people to reach their full potential. Our safety programs emphasize the importance of appropriate safe behavior and of individuals taking personal responsibility. We regard all injuries at work as unnecessary and avoidable. No matter how minor, each one must be reported and investigated.

Details of our progress on safety performance are shown in the Health and safety section of this Report.

### 2014 NSG Safety & Environmental Awards

The NSG Safety and Environmental Awards aim to increase awareness and reward individuals or teams for outstanding EHS project initiatives. Many of the best ideas for environmental, health and safety initiatives come from employees. These include ways of reducing health and safety risks, minimizing pollution, saving energy and reducing, recycling or reusing waste, water or raw materials. Judging was undertaken by a panel of senior managers and EHS experts.

Details of the 2014 winning projects can be seen on pages 22 and 29.



### Product responsibility

We are committed to the safety of our products and to ensuring they can be effectively handled, fitted and used by our customers. Our product risk-review procedures are designed to identify risks and to provide advice to users on safe handling. We communicate these risks through safety data sheets, labels and Glazing and Handling Guidelines.

Every R&D project developing new products and processes is required to have an Environmental Impact Assessment completed early on to highlight any positive or potentially negative implications, so that the project can be managed accordingly. We aim for a cradle-to-cradle life cycle management approach, incorporating environmental health and protection into every step of the life cycle of our products.

Our formal project management processes include thorough intellectual property searches, so that our customers can be very confident that the new products and processes we develop can be used freely without fear of infringing third-party patents.

The most senior executives accountable for product responsibility are the heads of the strategic business units.

### NSG achieves EcoVadis silver CSR rating

EcoVadis operates an independent, external platform allowing companies to assess and benchmark their environmental and social performance on a global basis.

The process assesses company policies, implemented procedures and published reports with regards to environmental, labor practices & human rights, fair business practices and sustainable procurement issues. The assessment is conducted by CSR experts of EcoVadis on the basis of company answers to a survey which is dynamically adapted to country, sector and size, using scorecards covering 150 industry categories and 21 CSR criteria. The rating is based on supporting documentation, public and stakeholder (NGOs, trade unions, press) information.

NSG Group used this assessment tool to gain a picture of the Group's CSR performance and understand areas for improvement. We were rated as **Silver** regarding our approach to CSR management.



## CORPORATE GOVERNANCE

CORPORATE GOVERNANCE IS A KEY ELEMENT IN THE SUSTAINABILITY ACTIVITIES OF THE NSG GROUP. WE ARE COMMITTED TO EFFECTIVE AND TRANSPARENT ENGAGEMENT WITH ALL OUR STAKEHOLDERS.

We believe that good corporate governance contributes to sustainable development by enhancing the performance of companies and increasing their access to outside sources of capital. We aim to maintain high levels of accountability and transparency, disclosing business goals and guidelines that clearly demonstrate a responsible management approach to all our stakeholders.

### Our governance structure

The NSG Group is governed by its Board of Directors, which is appointed by resolution at the General Meeting of Shareholders. The Board comprises the Chairman of the NSG Group, four directors concurrently serving as executive officers and four independent external directors. In the fiscal year 2014, the Board of Directors met ten times.

The Board of Directors oversees the Group's economic, social and environmental performance and compliance with internal and internationally agreed standards, codes of conduct and principles.

### Company with Committees

The adoption of the 'Company with Committees' model has brought the NSG Group into line with a number of leading Japanese corporations and with best practice. It has introduced additional safeguards for shareholders, increased transparency and enhanced corporate governance, with the role of the independent external directors strengthened.

There are three Board committees (Nomination, Audit and Compensation) and four independent external directors.

The Nomination Committee decides the details of the agenda items to be submitted to the General Meeting of Shareholders concerning the appointment and removal of directors. Chaired by an independent external director, Seiichi Asaka, the Committee consists of six members, including four independent external directors.

The Audit Committee, chaired by an independent external director, Sumitaka Fujita, comprises four independent external directors. It conducts audits of the execution of duties by directors and executive officers and ensures that adequate risk management processes are followed. It also decides the details of agenda items to be submitted to the General Meeting of Shareholders concerning the appointment and removal of independent auditors.

The Compensation Committee makes decisions on compensation of individual directors and executive officers. The Committee is chaired by an independent external director, Hiroshi Komiya, and comprises six members, including four independent external directors.

### Adoption of IFRS

We adopted International Financial Reporting Standards (IFRS) for our consolidated financial statements with effect from 1 April 2011. Enabling the whole Group to use the same accounting language has clear benefits for the Company's internal decision-making processes and further enhances our corporate governance structure. Beginning with the financial year to 31 March 2012, the Group's results are now reported in IFRS. This has increased the amount of financial information we publish, prompting our decision to divide the content of our annual reporting between the Annual Report and an Annual Financial Statements document; both can be downloaded in English from our website.

### Risk management

The scope of our operations introduces potential risks to our business activities, requiring effective risk management. These include the effects of changes in debt market prices, foreign currency exchange rates, credit risks, energy prices, liquidity interest rates and business disruption. Our enterprise risk management process enables the impact and likelihood of key risks to be assessed in a standard format. The information is used to assess the cumulative risk exposure of the Group and promote effective global risk responses, thus strengthening our overall risk management structure.

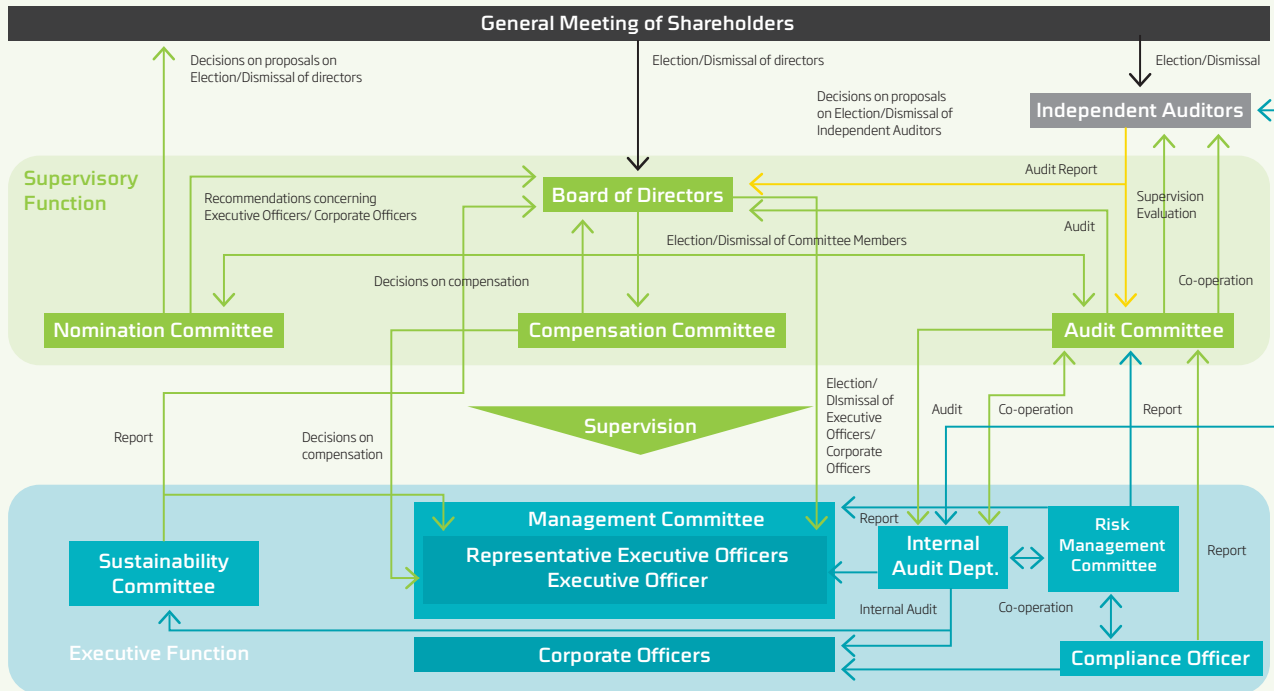
### Ethics and compliance

Our Code of Conduct sets out the values on which the NSG Group has been built and on which the Group and its member companies must depend for future success.

NSG is committed to compliance with all relevant laws, including anti-corruption laws in its Code of Conduct. It defines the conduct expected of the Group and its employees across all areas of our business and applies to relationships with stakeholders.

Alan Graham is Group Chief Ethics and Compliance Officer. His responsibilities include the development, implementation and maintenance of an integrated internal ethics and compliance management and control system as well as the creation and review of relevant Group policies and procedures. Central Ethics and Compliance regularly reports to the Audit and Management Committees.

# Open Management System



As at 30 June 2014

NSG Group conducts a continuous risk-based assessment to determine which employees face risks related to Bribery, Corruption and Competition laws. Over 65 percent of NSG Group's non-shop floor workforce is required to complete annual compliance training, via a third-party vendor, covering Bribery/Corruption and Competition Law through the Group's Ethics and Compliance Education Center. All are required to be familiar with the Compliance program policies, manuals and procedures. Key Compliance Contacts have been identified in each SBU and Group Function and are responsible for ensuring that the Key Roles in their area of responsibility are kept informed of program updates and are meeting the program requirements.

Central Ethics and Compliance has partnered with Group Internal Audit to include both ABAC and Competition Law minimum controls in any site audit. Relationships with lobbyists are covered by the Group's ABAC program as it relates to third parties. Public policy development and lobbying information is found in the Group's Code of Conduct and on the nsg.com website.

Our 'Reporting of Concerns' policy and procedures allow employees to voice any corporate governance issues through an external vendor using a reporting line and web portal with anonymity where legally allowed. Posters have been distributed at all locations.

A process has been formalized on the action taken to escalate concerns through the proper channels. Since the 2012 implementation, there have been 63 reports of concerns via the Reporting of Concerns system and of that, 18 reports were made in our fiscal year 2014. Each was reviewed and investigated when appropriate. The necessary measures were taken to address all confirmed cases of non-compliance.

## Global compliance culture assessment

In line with best practice, we conducted a compliance culture risk assessment with 1,232 employees in 23 countries focusing on two major compliance programs – Bribery/Corruption and Competition Law.

Results of the Governance, Culture and Leadership Assessment have been analyzed in a report issued to NSG senior management. The need for increased management communication on the expectations of ethical behavior and meeting compliance requirements was highlighted as an area of opportunity.

92%

of employees understand the Group's stand on compliance with the laws.

80%

of employees would address colleagues acting in a way in which management would disapprove.

88%

of employees understand how to apply compliance program requirements to their day to day role.

## BUSINESS OVERVIEW

WE OPERATE IN THREE BUSINESS SECTORS: ARCHITECTURAL, SUPPLYING GLASS FOR THE WORLD'S BUILDINGS AND FOR SOLAR ENERGY APPLICATIONS; AUTOMOTIVE, PRODUCING GLASS AND GLAZING SYSTEMS FOR VEHICLES WORLDWIDE; AND TECHNICAL GLASS, OPERATING IN THE DISPLAY, OPTICAL ELECTRONICS AND GLASS FIBER SECTORS.

## Architectural

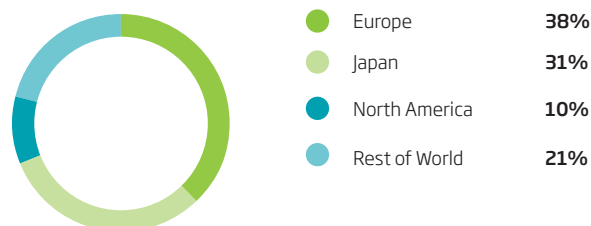
A leader in float glass technology and coatings

# 40%

Contribution to Group sales\*

### Sales by region

Financial Year 2014



8,800 employees in 21 countries

### Main products

- Thermal insulation glass
- Fire protection glazing
- Solar control glass
- Glass for solar energy
- Noise control glazing
- Safety and security glazing

Proportion of Group CO<sub>2</sub> emissions 62%



\*All figures for financial year ending 31st March 2014

## Automotive

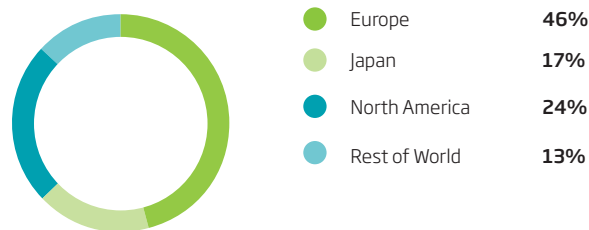
Supplying all major vehicle manufacturers and the after markets

# 50%

Contribution to Group sales\*

### Sales by region

Financial Year 2014



15,100 employees in 16 countries

### Main products

- Solar control glass
- Glazing systems
- Laminated glass
- Toughened glass
- Security glazing
- Lightweight glazing

Proportion of Group CO<sub>2</sub> emissions 33%



## Technical glass

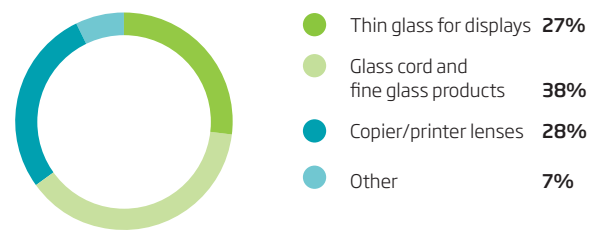
World leader in thin display glass and optical devices for electronics

# 10%

Contribution to Group sales\*

### Sales by sector

Financial Year 2014



2,000 employees in 5 countries

### Main products

- Displays and touch panels
- Copier/printer lenses
- Glass cord
- Battery separators
- Anti-corrosion coatings
- Fine crystal

Proportion of Group CO<sub>2</sub> emissions 5%



## ARCHITECTURAL

OUR PRODUCTS ARE AT THE HEART OF MODERN ARCHITECTURE, ENGINEERING AND CONSTRUCTION. THEY PLAY A BENEFICIAL ROLE IN ADDRESSING SOME OF THE MAJOR ENVIRONMENTAL CHALLENGES OF BUILDINGS.

### Sustainability and energy efficiency in buildings

On average, buildings account for almost 50 percent of the energy consumed in developed economies. The correct choice of glass can help to reduce the capital outlay, running costs and associated carbon emissions of buildings.

Our products play a vital role in addressing global building energy efficiency challenges and reducing CO<sub>2</sub> emissions. They also offer advanced functionality and create safer buildings for communities including increasing natural lighting, energy generation, fire protection, noise attenuation, safety and security, privacy, decoration and self-cleaning properties.

A study undertaken by TNO for Glass for Europe concluded that up to 170 million tonnes of CO<sub>2</sub> could be saved annually by 2020 if all Europe's buildings were fitted with solar control or low-e insulating glass units.

### Thermal insulation and solar control

The use of glass allows a bright and comfortable environment to be maintained inside a building. Advances in glass and coating technology have made windows an essential contributor to energy conservation and comfort by managing a building's light and heat transfer.

In cold climates, low-emissivity (low-e) coated glasses like Pilkington **Energy Advantage™** reflect heat back into the building and reduce heat loss through the window, while allowing high levels of valuable free passive solar energy to heat buildings without significant loss in natural light.

In hot climates, the reliance on air conditioning is mitigated through the use of advanced solar control coated glass that transmits the majority of the sun's visible light into buildings, while reflecting up to 75 percent of the solar heat and reducing glare.

To maximize energy efficiency all year round, products like Pilkington **Solar-E™** or Pilkington **Eclipse Advantage™** offer the best energy efficiency by providing both low-e and solar control benefits.



Pictured: Hosssa Office in Gdynia, Poland  
Pilkington **Eclipse™ Arctic Blue**

Photo Credit: Wojciech Kryński



## Vacuum glazing



Pictured: Redhouse Old Town Hall , Grade II listed building, UK

A vacuum glazing unit offers excellent thermal and acoustic performance using an insulation gap of only 0.2mm.

Pilkington **Spacia™** was the world's first commercially available vacuum glazing, offering the thermal performance of conventional double glazing in the same thickness as single glazing. Pilkington **Spacia™** Cool achieves a U-value of 0.9W/m<sup>2</sup>K and has lower embodied energy than standard IGUs due to not requiring noble gas insulators.

Sales are developing worldwide, particularly for use in historic buildings, in which the original frames can be retained so conserving the aesthetics of the architecture.

## Fire protection glass

Buildings that are vulnerable to fire are fundamentally unsustainable. Fire damage can affect lives and communities, through destruction of jobs and public assets.

Combining critical fire safety requirements such as thermal insulation and integrity with transparency and the ability to bring light into buildings presents significant technical challenges.

Products like Pilkington **Pyrostop®** and Pilkington **Pyrodur®** are used in a variety of building, marine and rail transport applications around the world. These offer a proprietary clear intumescent interlayer technology that not only protects against flames and smoke but also against the heat from a fire.



Pictured: Demonstration of NSG fire protection technologies

## Glass for photovoltaics



Pictured: ALM Brand building incorporating BIPV panels **Pilkington Eclipse Advantage™**, **Pilkington Optifloat™**, **Pilkington Optiwhite™**

During its life cycle, a solar panel can generate over 15 times the energy used in its manufacture. NSG's glass is an integral part of modules produced by leading companies in the solar energy industry.

As a technology leader in glass coatings and low-iron compositions, our products are helping our customers to manufacture increasingly efficient modules. Our anti-reflective coatings help maximize solar energy transmittance and NSG **TEC™**, a Transparent Conductive Oxide (TCO), is part of the system that generates an electrical current.

The new façade at ALM Brand proudly boasts the first Pilkington **Planar™** panels to incorporate Building Integrated PhotoVoltaics (BIPV). The 84 point-fixed BIPV panels, which cover just 10 per cent of the new façade, are expected to generate 41.5kW of electricity, or 5% of the overall building energy needs.

## AUTOMOTIVE

AS A WORLD LEADER IN VEHICLE GLAZING, WE AIM TO PROVIDE OPPORTUNITIES FOR VEHICLE MANUFACTURERS TO ADDRESS SUSTAINABILITY ISSUES, SUCH AS CO<sub>2</sub> REDUCTION, SOLAR CONTROL, VEHICLE WEIGHT, AERODYNAMICS AND RECYCLING.

The global automotive industry is increasingly addressing the sustainability agenda with CO<sub>2</sub> reduction a major focus. The shift to high efficiency combustion engines, electric vehicles and plug-in hybrids requires advanced glazing solutions for solar energy control and weight reduction.

As a world leader in automotive glazing, we are meeting these challenges by developing value-added technologies to produce high-performance solar control glazings. Our aim is to provide further opportunities for vehicle manufacturers to meet their sustainability challenges. We aim to reduce energy used during the manufacture of products and to increase their contribution to sustainability during their lifetime.

We are working with established vehicle manufacturers and new entrants who are developing new vehicles that are greener by design. Glass in vehicles offers more properties than simple transparency, so when designing vehicles for reduced mass in the components, consideration needs to be given to acoustics, stiffness, sealing, camera safety systems and solar control. We have supplied glass used in automotive photovoltaic roof systems that can actively supply power to the vehicle, helping reduce reliance on conventional energy sources.

### Lightweight glazing

The NSG Group is focused on the introduction of lightweight glass and glazing technology.

The importance of environmentally friendly vehicles is growing as consumers are demanding ever more energy-efficient models. Lighter weight designs are an essential part of reducing vehicle CO<sub>2</sub> emissions and improving their energy efficiency. Our in-house developments for glass-shaping technology make it possible for vehicle manufacturers to reduce the mass of glass components by up to 25 percent.

The NSG Group is supplying Citroën with the first 2.85mm backlight for its new C4 Cactus, the glass is processed using the Group's advanced press bending technology.

Working with Toyota, NSG recently showcased an extremely lightweight 2.0mm/1.0mm windshield prototype at the 43rd Tokyo Motor Show that meets industry quality standards.



Pictured: Citroën C4 Cactus and Toyota i-Road

## Solar control glazing



Our vehicle-glazing products provide advanced solar control properties by absorbing or reflecting infra-red energy from the sun.

Approximately 30 percent of the heat loading on a car's interior comes through the windshield. Control of heat energy entering vehicles directly impacts air-conditioning usage leading to additional energy consumption and CO<sub>2</sub> output. Pilkington's EZ-KOOL® line of products filters up to 99% of UV rays and are recommended by The Skin Cancer Foundation as an effective UV protectant.

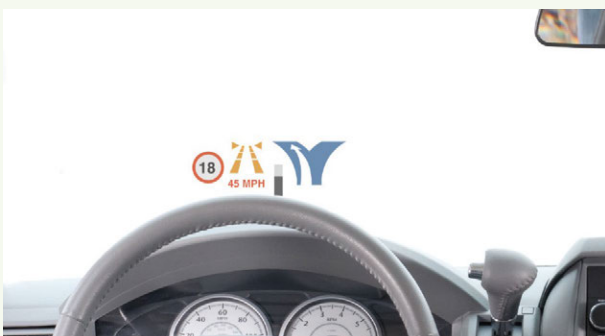
## Aftermarket glass replacement

A vehicle's windshield is an essential piece of safety equipment that we take for granted until it is damaged.

Chipped or cracked windshields reduce visibility and can lead to loss of structural integrity over time. The NSG Group's Automotive Glass Replacement (AGR) services provide an extensive range of OEM quality replacement glazings to auto glass replacement professionals throughout the world ensuring consumer glazings can be replaced quickly and to the same standard as the original.



## HUD and camera systems



Enhanced vehicle connectivity uses the glazing as a key component in camera safety systems and Head-Up Displays (HUD).

Vehicle connectivity aims to improve safety and comfort through technologies that connect the occupant to the vehicle and the vehicle to other devices or to external vehicles and traffic infrastructure. NSG are market leaders in Head-Up Display (HUD) windshields, allowing important information to be displayed in the driver's line of sight whilst our antenna design technologies support the development of the next generation of communication systems.

## TECHNICAL GLASS

OUR TECHNICAL GLASS PRODUCTS CONTRIBUTING TO ENERGY CONSERVATION AND SUSTAINABILITY INCLUDE GLASS FOR DISPLAYS, LED PRINT HEADS FOR OFFICE EQUIPMENT, BATTERY SEPARATOR TECHNOLOGY FOR ELECTRIC AND HYBRID VEHICLES, AND GLASS FIBER FOR TIMING BELTS AND PAINTS.

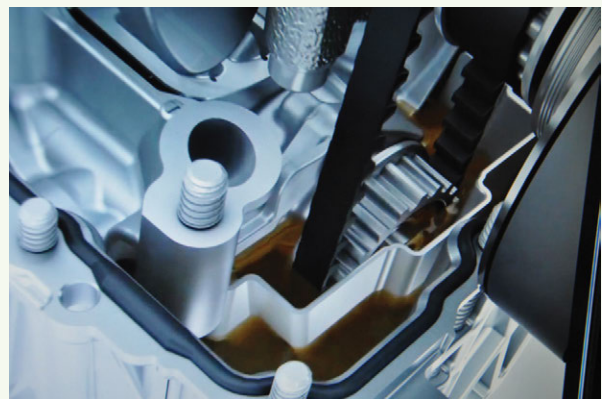
The NSG Group is a world leader in the development of advanced glass products in a variety of fields. Glass as a high-tech material offers many opportunities, being light, strong, fire retardant, non-conductive and resistant to chemicals. Our patented products are used in transmission belts to improve fuel consumption, low power LED printers and coatings to protect the longevity of our buildings and equipment. Our expertise in the manufacture of ultra-thin float glass is allowing the development of the next generation of touch-screen devices.

### Glass cord engine timing belts

The Group's advanced glass cord technology is enabling the automotive industry to develop the next generation of energy-efficient vehicles.

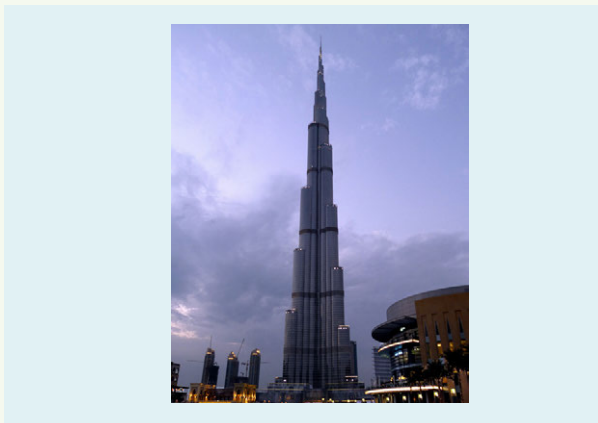
The technology is primarily used in engine timing belts and independent testing has highlighted improved fuel efficiency leading to 1.45 g/km lower CO<sub>2</sub> emissions compared to timing chain systems. The technology is also used in vehicles with advanced Electric Power Assisted Steering (EPAS) systems which when compared to hydraulic systems also reduce fuel consumption and CO<sub>2</sub> emissions.

NGF's HTS (High Tensile Strength) glass cords significantly improve belt flexibility and stretch resistance. This advanced technology has been successfully incorporated into innovative 'Belt in Oil' systems that further improve engine refinement. The system delivers the quietness and more efficient running of a belt but with the durability of a conventional timing chain. Furthermore, the belt is capable of remaining in service for the life of the engine.



Pictured: Belt in oil shown as part of "Beat the Chain" campaign

### Anti-corrosion coatings



Pictured: Burj Khalifa - Dubai

Glass Flake products are used in protective coatings, polymer reinforcement, heat resistance, cosmetic and decorative applications.

Microglas® Glasflake™ is used in anti-corrosion coatings to produce a virtually impenetrable layer to water and chemicals, extending the life of the protective coatings to 25 years. The technology is used to protect buildings and structures such as bridges, offshore wind farms and platforms that need to operate for many years under exceptionally harsh conditions.

The soaring spire of the world's tallest building, the Burj Khalifa in Dubai, is protected by a glass flake reinforced polyester coating supplied by NGF customer Jotun.

Photo credit: Hans Schwarzkopf

## Display and touch panels

We are a world-leading supplier of ultra-thin glass for small LCD applications, helping to reduce power consumption in the display market.

Our Ultra Fine Flat Glass (UFF) is produced in thicknesses as low as 0.3 to 1.1mm. These products are increasingly being used in the growing touch-panel market, particularly in mobile phones, tablets, computers and now expanding into use in vehicles. This technology helps reduce the need for additional peripheral equipment, allowing people to have a more natural interface with technology.



## LED print heads



NSG, with the printer and scanner manufacturer Fuji Xerox, are jointly developing a new generation of Light Emitting Diode (LED) print heads to reduce power consumption in office equipment.

Using our proprietary SELFOC® Lens Array (SLA®) technology, the new print head provides an image quality equal to or surpassing more conventional laser scanning units but with the added advantages of miniaturization, low power consumption and low-noise operation. This allows optical systems to be designed more compactly and manufactured at low cost.

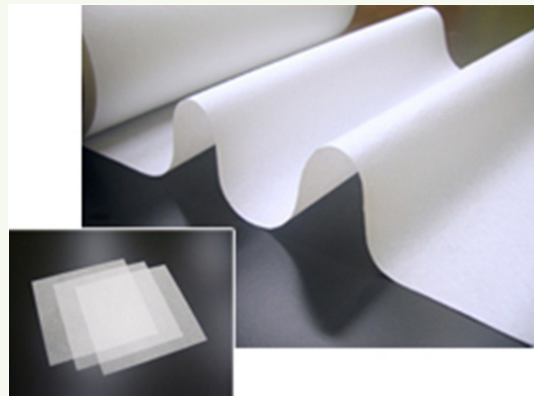
Photo credit: Courtesy of Fuji Xerox

## Battery technology

NSG is leading development of advanced glass products for use in battery separators.

The Idling Stop and Start (ISS) system installed on modern cars to cut fuel consumption when idling uses Absorbed Glass Mat (AGM) separators to greatly increase the efficiency of the batteries.

Our R&D is focused on continuing to improve the capacity, stability, power and safety margins of customers' products. Our Super Glass Paper (SGP) technology with a 30µm thickness and >85% porosity is supporting the development of the next generation of lithium ion batteries and fuel cells.



Pictured: Super Glass paper

## ENVIRONMENTAL POLICIES AND MANAGEMENT

WE TAKE OUR ENVIRONMENTAL RESPONSIBILITIES EXTREMELY SERIOUSLY. WE REQUIRE ALL OPERATIONS TO MEET LOCAL LEGAL STANDARDS BUT APPLY OUR OWN CORPORATE STANDARDS WHERE THESE ARE STRICTER THAN THE LAW.

Our Group Environmental Policy defines our approach on environmental matters. In particular, it outlines our management of both current activity and the legacy of past and inherited liability. It reinforces our commitment to using good scientific principles to try to predict and assess our impacts on the environment, both positive and negative.

### Our Environmental Policy

Given the nature of our business, we acknowledge that our activities will inevitably have an environmental impact, but we have taken steps to minimize the adverse nature of any impact and have put in place systems to try to ensure that we manage such impacts in a controlled manner. The use of many of our products will lead to positive environmental impacts.

Principal among the tools we use is our environmental management system, which is certified to ISO 14001 for the vast majority of our glass manufacturing and automotive manufacturing sites.

We are committed to reporting on our performance, both good and bad. Environmental performance is monitored and reported for manufacturing operations that are under the direct control of NSG Group. We continue to work with regulatory authorities worldwide on issues relating to historical industrial activity on and around Group premises.

### Data collection

Environmental and safety performance data is collected across the Group using an online electronic data reporting system known as Airsweb™. This database is multilingual and accessed over the corporate intranet, by sites under NSG operational control, allowing monthly updating of relevant information.

Environmental data is collected under the broad headings of energy, emissions to air, water usage, recycling and waste. The data collected is based primarily on the core environmental performance indicator set of the Global Reporting Initiative (GRI).

In addition to the collection of environmental emissions and resource usage data, the Airsweb™ system also incorporates an incident reporting system. This allows the timely reporting and recording of incident data, both safety and environmental, as well as provision for tracking the progress or remedial actions and communication of learning points.

We are in a strong position to help mitigate the effects of climate change by producing products that conserve energy in buildings and vehicles.

### Monitoring performance

Supplementing the routine monitoring of our business, we also maintain a number of central registers used to guide our strategic development and maintain a high level of corporate governance in the sustainability field. For example, a register of all furnaces, their associated permits, relevant legislation and abatement capabilities is maintained and used to support the assessment of any proposed changes in operation or design.

To ensure a consistent and innovative approach, we operate a number of multidisciplinary design panels whose task is to ensure full assessment and review of proposed changes. Our stage gate process ensures that an appropriate level of information and resource is applied to an issue at set points within the development of a project or proposal. This ensures the most efficient use of our resources and encourages innovation.

For glass-manufacturing plants we have defined our strategic approach to abatement in order to ensure that across the world we hold fast to our principles, even in parts of the world where legislative controls are less well developed.

### Certification

We aim to certify our manufacturing facilities to the internationally recognized ISO 14001 environmental standard and now have 81 certified sites around the world, representing 70 percent of our business by turnover.

Our Automotive business was one of the first in the automotive industry to achieve a corporate certificate for environmental management. A single ISO 14001 certificate from TÜV SÜD Management Service GmbH covers central functions and the vast majority of our Automotive plants worldwide.

NSG's San Salvo plant in Italy achieved ISO 50001 certification of its Energy Management System for glass melting and automotive glass processing in October 2014. This is in addition to our already certified German glass-melting and processing sites.



Our Italian glass-melting and automotive-processing sites have recently been certified to the ISO 50001 energy management system standard.

### Environmental Product Declarations

An Environmental Product Declaration, EPD®, is a verified and registered document that communicates transparent and comparable information about the life-cycle environmental impact of products.

In May 2014 the German Institute of Building and Environment (IBU) awarded EPDs for Pilkington Pyrostop® and Pilkington Pyrodur® fire-resistant glass, according to ISO 14025 and EN 15804. The Ecoprofile results allow architects and planners to access reliable environmental information and complete detailed sustainability assessments of buildings.

Pilkington Germany AG now has the authorization to mark both fire resistant product lines with the IBU logo in monolithic format or insulating glass. The declarations are IBU listed and can be ordered upon request.



Environmental Product Declarations have been completed for NSG fire-resistant glazing.

## ENERGY USAGE

WE WORK CONTINUOUSLY TO MINIMIZE ENERGY INPUT INTO ALL OUR PROCESSES, SO THAT THE USAGE OF GLASS CONTRIBUTES NET BENEFIT TO SUSTAINABILITY.

### Our energy usage

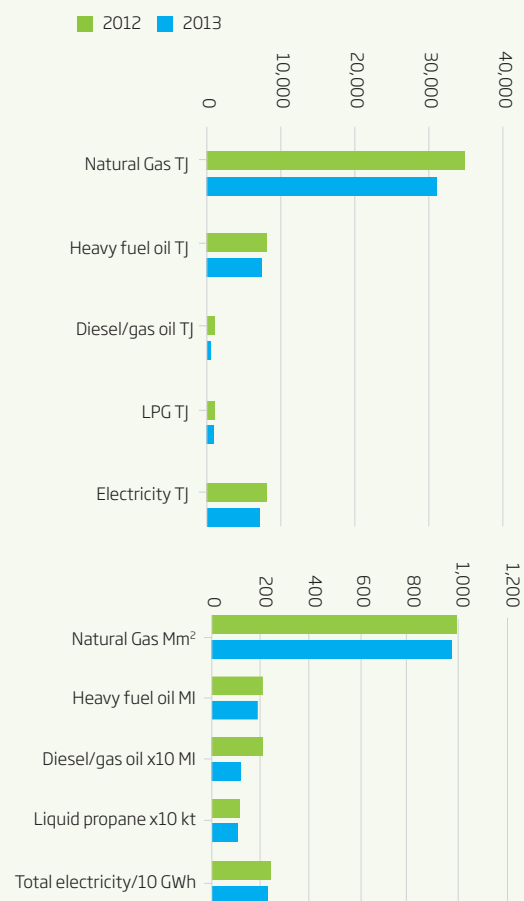
For both environmental and financial reasons, we use natural gas as the fuel of choice for glass melting. In 2013, we reduced consumption by 10 percent compared to 2012.

The quantity of heavy fuel oil is gradually being substituted by natural gas and is more often used as a back up. In 2013, we reduced heavy fuel oil consumption by 7 percent compared to 2012.

Diesel oil and liquid petroleum gas are used as back-up fuels and to power small engines, furnaces and boilers. In 2013, our consumption of diesel oil was 15.6 million liters (down 23 percent on 2012) and that of liquid propane was 11,400 tonnes (no change on 2012).

During 2013, we consumed 8.1 PJ (2.3 TWh) of delivered electricity. The total energy used by the NSG Group in 2013 was 48.59 PJ (13.50 TWh). This represents an 8 percent reduction on 2012 data.

### NSG Group energy usage



### 2014 NSG Environmental Award winner

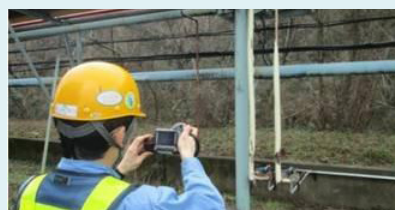
The winner of the NSG Group Environmental Award 2014 is a team from **Maizuru** in Japan.

The winning **'Steam Management Project'** for fuel and CO<sub>2</sub> reduction is an excellent example of a complex project that leads to a significant fuel, cost and CO<sub>2</sub> reduction.

The optimization of the fuel-fired boilers, the increased output of the float plant's waste-heat boilers and the minimized consumption of steam resulted in a 60 percent reduction of fuel consumption and a two percent CO<sub>2</sub> reduction.

The judging panel was impressed by the strong commitment of the local utility & maintenance team that was essential for a successful delivery of the project. Overall, the judges concluded that the project conveyed the true spirit of the Environmental Award and was a very worthy winner.

In total the judging panel received 45 applications for the Award. All projects addressed key environmental issues, such as energy, hazardous materials, packaging and waste. The selection criteria included reduction in environmental impact, wide employee involvement and transferability. The judging panel felt that all of the winning projects have an ability to take the Company beyond country environmental law requirements, leading to a better overall performance.



Pictured: Operator uses thermal camera to assess effectiveness of steam pipe insulation



## Initiatives to reduce energy usage

### Management systems

Investment in energy management systems includes the achievement of ISO 50001 certification across all operations in Germany and recently Italy, with installation of sub-metering hardware and software. A high level of transparency in energy consumption enables a sophisticated energy-planning process with improvement activities, target setting and frequent reviews.

### Employee awareness

We have continued our efforts with an ongoing program of work across all sites to increase energy awareness. This program involves a number of teams within the manufacturing organization with the objective of delivering significant improvements in the energy efficiency of our operations and includes the development of a Group-wide database of energy-saving projects.

### Operational energy efficiency projects

Led by Manufacturing Excellence and assisted by other Group central functions, NSG sites have identified 95 zero-investment energy-optimization opportunities, resulting in annual CO<sub>2</sub> savings of 68 kt.

Major projects include furnace and annealing lehr energy optimization. Savings for each site have been monitored and result in total savings of 59kt CO<sub>2</sub>, 54GWh electricity and 200GWh fossil fuel in 12 months.

Installation of waste heat recovery processes resulted in reductions of electricity and natural gas consumption and saves 4kt CO<sub>2</sub> /year.

3kt CO<sub>2</sub> /year have been saved due to the installation of electricity sub-metering equipment and energy-efficient lighting at multiple sites.

Investment in plastic boxes to collect glass from downstream processing sites for re-melting on our furnaces has saved 3kt CO<sub>2</sub>.

### Renewable on-site energy generation and alternative fuels

The use of a waste derived biofuel oil instead of heavy fuel oil in a glass-melting furnace has cut CO<sub>2</sub> emissions by 8kt per year. Our Rossford technical center in North America produces about 7 percent of its own electricity with on-site photovoltaic generation. We have installed photovoltaic panels on the roof of our German Weiherhammer plant.

### Partnership with suppliers

We continue to partner with key suppliers to develop projects to reduce energy consumption in our manufacturing sites. Close collaboration with leaders in specific technologies is enabling us to implement optimum solutions to specific energy management challenges. Collaborative projects have also been implemented to address compressor inefficiency, to make better use of waste heat generated in our glass-making processes and to reduce peaks in electricity demand.

### UK supplier partnership



A partnership between Pilkington United Kingdom Limited and an energy solutions provider is supporting several energy management projects across UK production sites. The partnership involves a collaborative approach to technical energy-management financing solutions.

Collaboration on a series of in-depth energy audits and investigations across UK manufacturing sites identified multiple energy-efficiency projects and significant energy reduction has already been achieved with a new intelligent warehouse lighting system and specification of new energy-efficient variable-speed drives.



### Innovation in cullet recycling

Our Watson Street plant has recently invested in plastic boxes to travel on floatliners with customer glass deliveries. The returned customer cullet is diverted from landfill and when re-melted, reduces energy consumption and raw material decomposition: saving 3,000 tonnes CO<sub>2</sub> emissions per year.



## MINIMIZING ENVIRONMENTAL IMPACT

GLASS MANUFACTURE IS AN ENERGY INTENSIVE PROCESS, INVOLVING THE MELTING OF RAW MATERIALS AT HIGH TEMPERATURES. PRINCIPAL PROCESS EMISSIONS ARE TO AIR DUE TO THE COMBUSTION OF FUEL AND DECOMPOSITION OF CARBONATE RAW MATERIALS.

### Emissions to air

Our environmental impact analysis of the float glass and automotive glazing production processes reveals that the significant emissions are carbon dioxide, oxides of nitrogen and sulphur and, to a far more limited extent, particulate matter.

These arise from fuel combustion and decomposition of carbonate raw materials. The fuels we use all contain sulphur compounds as contaminants. Natural gas, our preferred fuel, contains less sulphur than oil. Heavy fuel oil contains the highest levels of sulphur of all our fuels, especially that readily available in Japan. Our furnaces in Japan are therefore fitted with efficient emission gas-cleaning equipment. The combustion of such fuels can produce a mixture of sulphur oxides (SOx).

Most sulphate arising from soda lime glass manufacture is released as sodium sulphate, which is of low toxicity. Nitrogen compounds released arise from the combustion air in which the fuel is burnt. At the high temperatures used in glass-making, the nitrogen in combustion air is oxidized to a mixture of nitrogen oxides (NOx).

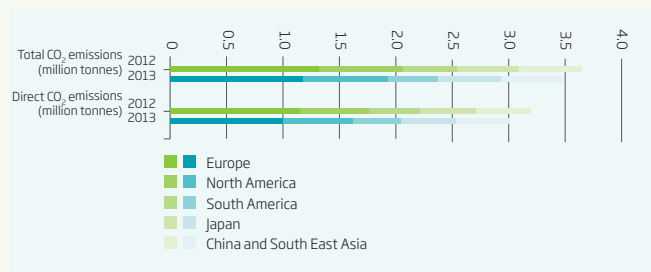


### Monitoring and reducing carbon emissions

In 2013, the NSG Group was responsible for the direct and indirect emission of 4.2 million tonnes of CO<sub>2</sub>. This represents a 7 percent decrease on 2012. Our direct emissions were 3.2 million tonnes (a 9 percent decrease on 2012). Direct emissions occur from our furnaces and from fuel used in bending and toughening furnaces in Automotive and Architectural Glass. In Europe, externally verified, direct 2013 CO<sub>2</sub> emissions from the Emission Trading Scheme were reduced by 21 percent compared to 2012 due to energy efficiency projects and site closures.

In the operation of our float plants, heavy oil to natural gas conversion has helped to reduce carbon emissions by around 50 percent over the past 40 years and a combination of design and operational innovations has made further progress.

### NSG Group glass-melting carbon emissions



### Recycled glass cullet to improve efficiency and reduce emissions

Glass for recycling is a valuable resource. Wherever quality allows, we recycle any glass off-cuts or cullet within our own glass-melting lines. Glass from our downstream operations and from our customers represents a potentially useful resource to us. We gain a double benefit from the use of such cullet. Its use to make glass reduces the requirement for raw materials and avoids disposing of what would otherwise be a waste material and closes the recycling loop. Ten percent cullet use saves 3 percent furnace energy and leads to reductions in CO<sub>2</sub> emissions.

In 2013, we sent 407,000 tonnes of glass for recycling and bought in 125,000 tonnes to supplement cullet from our own internal recycling. 11,000 tonnes of glass could not be successfully recycled so was sent for disposal.

One of our sites has recently manufactured glass using 100 percent cullet. Cullet return projects are ongoing to try to minimize the need for virgin raw materials.

## Waste

The glass manufacturing process itself produces very little waste material. All trimmed glass is recycled back into the melting process and waste is limited to maintenance waste, occasional off-specification raw material that cannot be blended and packaging waste.

In a win-win situation, Pilkington San Salvo has managed to reduce raw material requirements whilst also saving on waste disposal costs. Technical experts at the NSG Technical Centre have helped the Italian furnace operators to develop a method of recycling selenium-containing dust collected by the pollution abatement equipment. Previously, this was disposed of in landfill but now it can be used in the furnace to reduce the use of virgin raw materials.

Technologists from the Online Coating research group at NSG's European Technical Centre have developed a method to optimize the production and reuse of products formed by the waste gas treatment plant of the online coating process at Greengate. The optimization has reduced the consumption of raw materials and improved plant operating conditions while simultaneously increasing the saleability of the byproduct. The optimization project maintained a focus on chimney emission regulations, ensuring the safe discharge of neutralised gasses which adhere to environmental limits. The NSG group operates similar coating facilities in Europe, Asia and North America where these benefits will be extended.

If glass is produced that cannot be remelted on-site, it is sent, where practicable, for external recycling. We use the waste hierarchy to guide our disposal options, and landfill is the least favored option. We disposed of 34,000 tonnes of non-glass waste (an 8 percent reduction on 2012), of which 1,803 tonnes of hazardous (59 percent increase on previous year) and 19,200 tonnes of non-hazardous waste (10 percent reduction) were sent to landfill. We generated 5,335 tonnes of hazardous waste in 2012 (an 18 percent reduction on 2012).

In Automotive, all supplied materials are registered in the global IMDS (International Material Data System) to ensure we have complete visibility of material content to identify hazardous materials and opportunities for recycling. This data is shared openly with our automotive customers, to support their own recycling efforts. Glass typically constitutes around 3 percent of the composition of an average car. We are actively involved in the elimination of harmful materials in glass, ink, solder and other components in automotive glass products.

PVB is used to manufacture laminated glass. PVB trims from the edges of the laminated glass are returned to PVB suppliers to be recycled in their manufacturing processes. In 2013, around 2,000 tonnes of PVB trim was returned to our suppliers or other recyclers to be reused.

## Water management

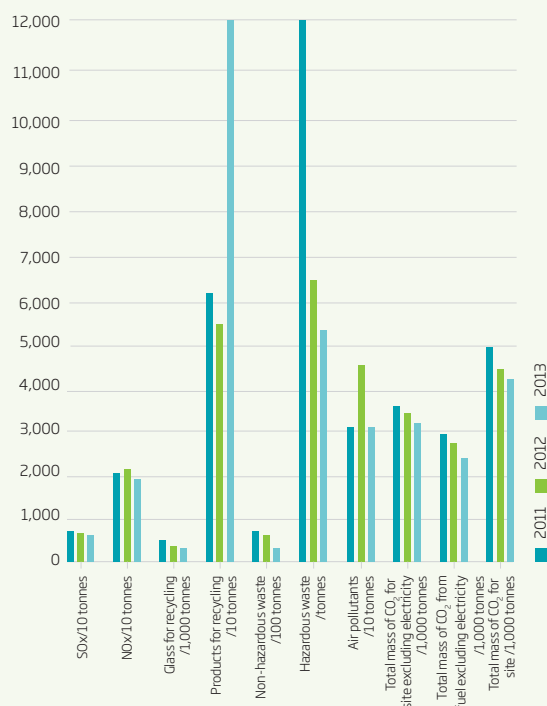
In glass-making, water is used for cooling, but most of our plants operate with closed loop systems and so only require top up. Water is also used for washing glass in plants but there the need is for very high purity, so water is treated and then reused. We seek to minimize our water consumption by working with suppliers to recycle water and to install advanced water treatment facilities. This not only reduces the consumption of water itself but also the chemicals used in the treatment of the water.

Across the Group water consumption can vary considerably according to process and product demands as well as water quality. Approximately 2 m<sup>3</sup> are required to manufacture one tonne of float glass and approximately 90 liters are required to process each square meter of automotive product. We used a total of 18.9 million cubic meters of water in 2013. This was a decrease of 6 percent on 2012 data.

## Timber

In Europe, much of our glass is transported on steel stillages without packaging, utilizing specialist 'Floatliner' vehicles. We use a significant quantity of wooden packaging in our operations. Although much of the timber we use comes from sustainable forestry, we cannot yet guarantee this worldwide and this remains an area for improvement. We also work with our suppliers to design reusable wooden packaging.

## Principal emissions from NSG Group during 2013



## EMPLOYEES

OUR MANAGEMENT PHILOSOPHY VALUES PEOPLE AS 'THE MOST IMPORTANT ASSET OF OUR COMPANY'. SAFETY, QUALITY AND ENVIRONMENTAL RESPONSIBILITY UNDERPIN EVERYTHING WE DO, WITH THE PRINCIPLE OF OPEN COMMUNICATION BEING CENTRAL TO OUR EMPLOYMENT POLICIES.

### NSG Code of Conduct

Our Code of Conduct reflects our values and principles and defines for all employees what is expected of them. It particularly emphasises safety, respecting human rights, taking personal ownership for actions and communicating with openness and involvement.

The overriding basis of the Code is that we will carry out our business activities in a safe, professional, legal and ethical manner and in a way that demonstrates corporate social responsibility and sustainability. Wherever possible, the Code defines a fair and common sense approach to doing business, with some elements dictated by strict legal requirements.

The Code acknowledges internationally proclaimed human rights and these are also reflected in our overall employment policies and standards and provide our employees with reassurance on how they will be treated. Our equal opportunity and diversity policy aims to prohibit discrimination based on race, color, creed, religion and beliefs, age, gender, sexual orientation, national origin, disability, union membership, political affiliation, or any other status protected by law. This policy operates in all employment related decisions. The most senior executive with responsibility for human rights aspects is the Chief Human Resources Officer.

### Employee engagement

We operate comprehensive communication and briefing systems within all our businesses, which includes effective mechanisms for two-way communication. Everyone receives regular updates on Group and local business objectives, targets, results and best practice at central and business unit level, including monthly briefings from the SBU heads. The Group's employee magazine MADO is produced three times a year and is available to employees in their native language. In addition to the international edition of MADO, the countries with major operations also receive a regional MADO. We operate formal mechanisms to brief and consult unions and employee representatives on group operations and future plans, as appropriate to local circumstances and requirements.

NSG Group's 2014 employee survey was globally rolled out in September 2014 and achieved a 90% response rate. The survey upholds the value we place on open communication and giving all employees an opportunity to provide feedback on their experience of working for the Group. It is a real opportunity for employees to voice their concerns and influence NSG Group policies. The management team at each level of the organization will develop action plans to improve highlighted areas that people have identified as priorities to improve their satisfaction and motivation at work. Further details will be provided in next year's Sustainability Report.

### Talent management

It is through the competence and effort of our people throughout the world that the NSG Group achieves its success.

We are committed to maximizing the talent in our organization to create flexible, skilled and motivated people who are focused on the achievement of our business objectives. Our high-potential employees are our future senior managers and executives who will formulate our future strategy and business plans and we need to ensure that we support them with appropriate learning and development initiatives in leadership and management. Throughout 2013 we continued to focus on the implementation and alignment of our Talent Management Processes to ensure that our talent is engaged, identified and developed, set challenging and stretching performance management objectives, appears on relevant succession plans and we have managed career and development plans in place for them.

### Talent management life cycle



## NSG management development programs

### Executive Development 2 (ED2) program

This program aims to give managers an insight into the leadership changes and capabilities required to make the transition from an operational management role to a senior strategic management role. We partner with the leading international business school, INSEAD, to deliver the program and ensure that delegates receive the latest thinking and research on strategy development and global leadership.

In November 2013, 24 delegates from around the world attended the Part 1 program in Cranage, UK. A key part of the program is applying the academic learning to real NSG business challenges and ED2 incorporates project work to embed learning. Delegates work in groups as consultants to research and present recommendations on real business and strategic challenges currently faced by NSG. This gives them the opportunity to both try out program learning and find out in some depth about other SBUs' or Functions' operations outside of their own career experience. Four teams each chose a business challenge to work on as an Action Learning Project (ALP). In May 2014 the delegates met up again for ED 2 Part II at the Group's Head Office in Tokyo, where they delivered the results of their work to senior executives.

### Joint SBU commercial leadership program

This is a unique program for the NSG Group's Sales and Commercial management teams which was piloted in the AGR SBU in 2013. Following on from this success the plan is to run these as Joint SBU program in every region throughout 2014.

The program combines leading-edge commercial and business acumen skills together with leadership development and is specifically designed to focus on customer requirements in fast-changing markets. The key objective is to equip commercial managers with the tools and skills to enable them to foresee and react quickly to fast-changing market demands and then achieving maximum value for the business through applying effective commercial strategies.

Tailored to reflect the key drivers and challenges facing our SBUs in each region, the program has been designed by external consultants who deliver the program in close cooperation with senior commercial managers to ensure the program is relevant to our business, customers and market conditions.

"Many customers already respect the quality of our products and value the expertise of our commercial team, but we need to ensure that we always turn these strengths into a strong case for the customer to buy from us," explained Tim Ferwerda, Regional Director AGR Europe. "Understanding our customers' position and proposing solutions that work for them is critical to making this happen."

As part of the week's program delegates are set business projects that reflect the challenges that each SBU is facing in the region and they work in teams to apply the training to developing solutions. Each team then presents project proposals back to a senior management audience, who then decide whether to approve the projects for future investment and development.

## NSG Group female manager distribution

(As at 31 March 2014)

Asia	3.4%
Europe	19.5%
North America	18.0%
South America	6.1%
NSG Group	12.0%

## NSG Group employee distribution graph

(As at 31 March 2014)



In FY2014:

- 6.2% of employees left the company by voluntary resignation
- Each NSG employee received 2.6 training days
- The non-authorized absence sickness rate was 2.7%

We have around 27,000 people working in 28 countries and speaking over 25 languages.



Delegates working on an innovation challenge during the Japanese Commercial Leadership Program.

## HEALTH AND SAFETY

OUR SAFETY PROGRAMS EMPHASIZE THE IMPORTANCE OF INDIVIDUALS TAKING PERSONAL RESPONSIBILITY AND OF APPROPRIATE SAFE BEHAVIOR, WITH MANAGERS TAKING THE LEAD THROUGH THEIR COMMITMENT TO OUR KEY SAFETY LEADERSHIP BEHAVIORS.

### Safety performance

Over the past year, we had 131 significant injuries (60 of them resulting in time lost from work). The SIR for FY2014 of 0.39 represents a 19 percent improvement in safety performance compared to FY2013 on a like-for-like basis, excluding a subsidiary disposed in FY2014

With our continued focus on the following high risk activities the NSG Group has not experienced a fatal injury in calendar years 2013 and 2014.

- Vehicle and pedestrian safety
- Machinery safety: guarding, frequent access and isolation
- Contractor control, including permits
- Materials handling: moving glass, load security, grabs, trolleys and pallets
- Driving

### Safety organization and strategy

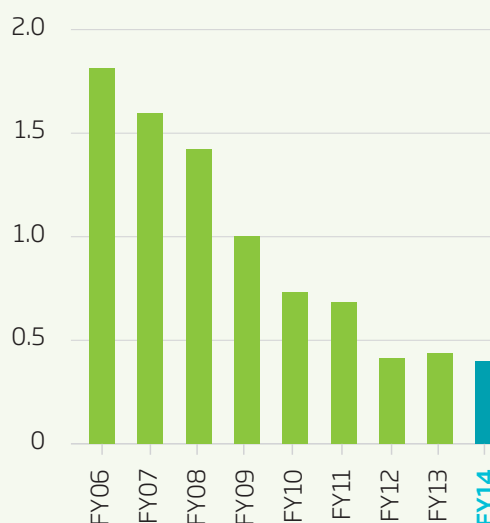
The NSG Group Sustainability Director, reports to the Chief Operating Officer. A safety update is provided each month and there is a more detailed safety review every six months with the senior operations team comprising the heads of the four SBUs and the heads of the Group functions. These reviews were held in Germany in March 2014 and Poland in September 2014.

### Moving safety to the next level

The safety strategy remains the same, with a focus on improving the effectiveness of our safety tools and programs. To help us to move safety to the next level the following initiatives have taken place:

- Independent audits of our safety tools to drive a more consistent approach, develop our safety skills and to improve our shared learning. These audits were cross regions and cross sites within a region for maximum impact.
- Further improve our level of proactive employee involvement as a means of continuing to change our safety culture.
- Further develop our first-line supervisors to improve our overall level of safety leadership.

### Significant injury rate (SIR)



Data revised due to disposal of subsidiary in FY2014.



Weierhammer (Germany) 'Listen to me!' project.

A safety project of the Weierhammer plant won the silver medal at the 2014 Safety Award from the Accident Insurance Association in Germany.

This project addresses issues of noise in the workplace and elsewhere. The award panel especially praised the creative ideas of this project - delivered by apprentices. The team made an induction video and stage performance during the NSG Group Safety Day to increase the overall awareness of risks relating to noise. AKIRA fotografie - [www.akirafotografie.de](http://www.akirafotografie.de)

## NSG Safety Day

The NSG Safety Day took place on 16 October 2014 and continued to be a successful global event. All sites organised health-related activities and employees were given the opportunity to improve their first aid, fire fighting and emergency response skills.

Senior managers attended sites to demonstrate their personal commitment and the opportunity was taken to celebrate safety success.



CEO Keiji Yoshikawa visits Shelbyville plant, North America on Safety Day.

### 2014 NSG Safety Award winner

A joint team from Cebrace and Caçapava plants in Brazil has won the 2014 NSG Safety Award.

The 'Safer stacking of pallets with a camera system' project features a system of spotlights, cameras and displays mounted on forklift trucks for stacking loaded glass pallets. The system gives the driver clearer visibility to see if pallets are in the correct position, minimizing the risk of tilting pallets. There were three aspects of the project that especially impressed the judging panel – the project addressed a major risk activity, reliability and feasibility of retrofitting the system to existing forklift trucks, as well as developing, testing and proving the system with contributions from employees who actually use the equipment.

In total the judging panel received 183 applications. They were encouraged to see how major safety challenges had been met. The judges focused on significant risk reduction, wider employee involvement, transferability and the innovativeness of the overall project.



Chmielow plant in Poland wins an H&S award for a pedestrian safety project.

NSG's newest automotive OE plant in Chmielow, Poland has received a top H&S award for its work on employee safety. As part of the Group's safety program, the plant's pedestrian safety project has been recognised by the Polish H&S Organization. It was awarded a commendation in the technological and organizational solutions category in the Workplace Environment Improvement Competition.



San Salvo employees accept national Italian Safety Award for Primo plant.

Primo Plant has been awarded an important Italian safety recognition. The competition was established by the National Industry Association, National H&S Insurance Company and an accreditation body, ACCREDIA. 150 Italian companies participated and were audited on safety improvements. Winners demonstrated improved safety activity and investment KPIs over 3 years.

## CUSTOMERS

HIGH QUALITY AND SERVICE STANDARDS ARE KEY FEATURES IN BUILDING RELATIONSHIPS WITH OUR INDUSTRY CUSTOMERS AND END-CONSUMERS. WE ARE COMMITTED TO THE SAFE USE OF OUR PRODUCTS, ENSURING THEY CAN BE EFFECTIVELY HANDLED, FITTED AND USED BY OUR CUSTOMERS.

We aim to be the most efficient, most reliable, most responsive and most sustainable supplier of choice of our customers. Our objective is to produce a wide range of effective, innovative and sustainable products in all our business and our R&D effort is focused on product and process development to support this objective.

Most efficient means having the lowest delivered unit cost of what we supply and using the minimum resources and energy to produce and process them.

Most reliable means that, having committed to a customer order, we deliver what they ordered, with the promised quality, when they expect it, in full, on time, every time, without quality issues or paperwork mistakes.

Most responsive means that when our customers contact us by whatever method, they get an answer immediately. In other words, they know where they stand with us.

To be the most sustainable supplier means ensuring that we set high standards and adhere to them throughout the supply chain, from our own suppliers, through manufacturing, transport and delivery. We aim to achieve an economic performance that ensures the long-term viability of the Company.

### Product responsibility

We aim to provide customers with products and services that offer social, environmental and safety benefits. Our training and support helps our customers to identify and mitigate risks or to raise market awareness of sustainability issues. We are committed to the safety of our products and to ensuring they can be effectively handled, fitted and used by our customers. This includes the safe handling of sheet glass or the correct fitment of windshields in vehicles to maintain quality and strength.



Based on the success of ekoglass in Argentina, the NSG Group launched the same initiative in Brazil to raise awareness of the benefits in using insulated glazing. It aims to make a step change in the energy and acoustic efficiency of the glazing products supplied to consumers and to make important improvements to the manufacturing base.

### Highest quality

Quality is a key feature in building successful relationships with our industry customers and end customers. It is also a key factor in sustainability, because high quality can reduce waste throughout the supply chain, while improving production efficiencies. Quality encompasses design, development, manufacture, delivery, assembly and price of glass, as well as customer support. In the NSG Group, the achievement of high quality is supported by the use of rigorous quality management systems and standards.

In the Architectural Glass business, the Group has ISO 9000:2000 quality management certification in Europe, Japan, North America and South America.

Our European Architectural Glass business has been a leading player in the development of new glass product standards for the European building industry. These standards have provided a route for glass manufacturers to meet the European Construction Products Directive and apply to virtually all NSG Group products used in buildings.

Malaysian Sheet Glass were awarded Toyota's 2014 UMWT - SPLD Service Parts Supplier Performance Award in recognition of outstanding performance in Quality Assurance and on-time delivery.





## Product innovation

The NSG Group is a global leader in manufacturing excellence and innovation, notably in the areas of glass melting, glass forming by the float process, online coating and complex shaping technology, especially for automotive windshields and backlights. The Group invested ¥7,880 million in R&D in FY2014.

The Group owns or controls approximately 4,000 patents and patent applications, predominantly in the fields of float glass production and processing and automotive glazing and also in the information technology field, and has access under license to patents held by third parties.

The Group has also been active in selective licensing of its patents and technology, in the areas of online coating, encapsulation (of automotive glazing) and rain sensors for automotive glazing.

Pilkington UK Ltd has won the Glass and Glazing Industry G14 Commercial Project of the Year Award for the Stonehenge Visitor Centre.

The idea behind the glass pavilion was to connect the interior of the building with the striking landscape that surrounds it on all sides.

The architect wanted the interior to be both visible from outside to entice people in while, more importantly, allowing those inside a view out that was as bright and naturally coloured as possible.

The glazing we provided gives the appearance of an almost free-standing, delicate wall of glass, while in fact the system has a great deal of structural strength.

The use of Pilkington glazing allows the maximum amount of energy and light to enter the building and help to heat the space, while at the same time minimising the amount of heat loss. The result is that the sweeping views and light filled pavilion enjoyed by those inside the centre do not come at the expense of energy-efficiency.



Stonehenge Visitor Centre – a world heritage site

NGF EUROPE Limited has been honoured with a Queen's Award for Enterprise in the 2014 Innovation Category in recognition of the design and manufacture of small filament diameter glass cords which are changing the way automotive engineers design vehicles.

When coated in rubber latex in a novel chemical-dipping process these glass cords are uniquely oil resistant and so capable of reinforcing timing belts which run in oil. This application significantly reduces noise and carbon dioxide emissions and increases the fuel economy of automobile engines. The award recognises the achievements of the R&D team and the company's commitment to technical development, manufacturing excellence and its successful commercialization.



NGF EUROPE receive the prestigious Queen's Award for Enterprise in the Innovation category from the Queen's representative.

NSG Group's vacuum double-glazing glass, SPACIA 21® clear thermal shield unit, has won an energy conservation prize awarded by Japan's Energy Conservation Center. The glass was awarded the Chairman's Prize in the Product category & Business Model category Energy Conservation Grand Prize. This award recognizes outstanding developments in energy-saving product performance and the promotion of energy-saving awareness.



SPACIA 21® wins energy conservation grand prize.

## SUPPLIERS

WE PURCHASE MATERIALS, GOODS AND SERVICES FROM OVER 20,000 SUPPLIERS WORLDWIDE. OUR SUPPLIER CODE OF CONDUCT AND RELATED EVALUATIONS HELP ENSURE THAT OUR SUPPLIERS UNDERSTAND AND COMPLY WITH OUR STANDARDS.

As part of our Sustainable Procurement Program, we operate a Supplier Code of Conduct. It outlines behaviors, processes and procedures – in short, the standards we expect from our suppliers. Engagement with suppliers may be via appropriate account managers and the Procurement function has the responsibility to ensure that suitable engagement arrangements are in place and communicated.

Our manufacturing processes use materials, products and services procured from around 20,000 local, regional and global suppliers. Our suppliers are therefore crucial to the achievement of our sustainability objectives. To manufacture and supply superior quality glass products to our customers, we aim to build strong relationships with suppliers that are based on a framework of trust, co-operation and sustainability.

### Our Supplier Code of Conduct

The wide range of issues addressed in the Code reflect the many and diverse activities in which our suppliers are involved. Wherever possible, the Code defines a fair and common-sense approach to doing business, while incorporating all relevant legal requirements. The content of the Code also takes into account our values and principles, particularly the emphasis on safety, taking personal ownership for our actions and communicating with openness and involvement. It is the responsibility of all of our suppliers to follow the principles of this Code to ensure compliance with our requirements.

### Supplier sustainability evaluation

Between 2011 and December 2015 we plan to evaluate over 300 suppliers against our Supplier Code of Conduct. In order to meet this challenge and to carry out additional due diligence on our suppliers of high environmental impact, NSG has engaged in the services of an external service provider.

### The standards we expect

We expect our suppliers to achieve and maintain high standards throughout the supply chain, but particularly with regards to the following:

**Ethical behavior** – Our suppliers must accept personal responsibility for behaving professionally, ethically and with integrity and fairness.

**Social behavior – human considerations in the workplace** – All our suppliers must conform to the relevant International Labor Organization Labor Standards as a minimum requirement.

**Environmental behavior** – Our suppliers must recognize the crucial importance of their role in reducing environmental impact. They must play their part in creating a prosperous and sustainable future by continually seeking to achieve best practice in environmental protection.

**Evaluation** – Key elements of the Code now form part of our supplier audits. We have a supplier development team of 15 engineers, covering all regions. This team is responsible for improving performance where necessary against these standards.

We expect our suppliers to uphold our standards in dealing with their own suppliers, contractors and sub-contractors and to be able to provide evidence of this if requested.

### Impact on the environment

In 2010, we began to identify suppliers that have a particularly high impact on the environment. Our aim is to ensure that our suppliers minimize their negative impacts and work positively on environmental initiatives. The scope includes wooden packaging, batch materials, waste-management contractors and chemicals. We expect that suppliers in these categories have a recognized environmental certification such as ISO 14001 or equivalent.

In the case of wooden packaging we look for a recognized chain of custody in regard to the wood supply.

Currently, over 60% in these categories fully meet our requirements. Those who do not will undergo further evaluation and development. Any suppliers unwilling to accept this may be phased out.

### Working with suppliers to save energy

Our procurement activities and projects demonstrate our commitment to sustainability. Good practice is shared through Global Procurement Category teams and spread throughout the Group. We leverage our Global Procurement function to achieve this spread of good practice effectively and efficiently. We are working with key suppliers to develop projects to reduce energy consumption in our manufacturing sites. Close collaboration with leaders in specific technologies is enabling us to implement optimum solutions to specific energy management challenges. For example, in our sites in Italy and the UK, new efficient lighting systems have been installed in place of old outdated lamps, leading to a halving of electricity consumption and a significant reduction in ongoing maintenance. Collaborative projects have also been implemented to address compressor inefficiency, to make better use of waste heat generated in our glass-making processes and to reduce peaks in electricity demand.

### Communication and co-operation

In line with our Sustainability Policy, we communicate with and work constructively with our suppliers and governments, regulatory agencies, the scientific community and other relevant stakeholders, to develop and encourage business and community practices that make progress towards the common aim of sustainable development.

### Conflict minerals

NSG Group supports the goals and objectives of the Dodd-Frank Wall Street Reform and Consumer Protection Act's Section 1502, which aims to prevent the use of conflict minerals that directly or indirectly finance or benefit armed groups in The Democratic Republic of the Congo (DRC) or an adjoining country as defined in the Act.

Identifying suppliers who provide materials that could potentially include these minerals is now a very important part of our procedures and due diligence is being completed via an online questionnaire.



## COMMUNITIES

THE LOCAL COMMUNITIES THROUGHOUT THE WORLD IN WHICH THE NSG GROUP OPERATES ARE THE FOUNDATION OF OUR BUSINESS AND THE LIVES OF EMPLOYEES. WITHOUT A RELATIONSHIP OF MUTUAL BENEFIT WITH THESE COMMUNITIES, THE GROUP AS A WHOLE COULD NOT SUSTAIN ITS OPERATION.

We have around 27,000 permanent employees, with principal operations in 29 countries throughout Europe, Japan, North and South America, China and South and South East Asia. We do this in over 500 separate facilities worldwide – some large and some small. Each has an impact on the community in which it is based, by providing employment, investment and other benefits, but also having an impact on the environment.

The effects of necessary investments on our communities are generally beneficial, bringing additional employment and economic benefits. For every investment we make, an impact assessment is conducted to ensure we understand and manage the likely effects on the community, the environment and the local economy.

As a responsible and often prominent member of the communities in which we operate, we believe it is important to be involved actively by leveraging our core business and management resources to help to address local issues.

### Aims and objectives

We want our operations to function in healthy, thriving communities and to be seen as a good neighbor to those communities.

We know that if we want to operate effectively and to be able to expand or change when the time is right, we need the goodwill that comes from being an active supporter of the community.

In addition to our business investments, helping to sustain local operations, we also invest in the communities in which we operate. We aim to help – through direct cash donations to charities and other projects or through in-kind resources – to improve the health of the community or tackle specific social issues. We operate programs that assess and manage the impacts of our operations on communities, including entering, operating and exiting.

We also involve our staff in providing a lead in developing our relationships with the communities in which we operate. This can take the form of matching contributions raised by staff or allowing staff time to make personal contributions of time and effort in local projects.

In FY2014, we made contributions worth around ¥64 million to our local communities. Our grants helped the arts, medicine, welfare, job creation and urban renewal.

### Local community action initiatives

#### North America Automotive inspires young engineers



Our Shelbyville plant helped to encourage local youngsters into engineering careers during Engineering Day at the local High School.

Engineering and HR employees helped to assess final-year students' science projects and demonstrated the beneficial use of automotive glazing products to younger students.

There is a problem with a shortage of students going into science and engineering and this event is part of an ongoing strategy launched a year ago by the city and county authorities, partnered with businesses and local colleges, to encourage youngsters into engineering careers.

**Volunteering in Japanese community activities**



Japanese employees volunteer in an annual cleaning initiative in Aikawa Mizube Park in Tarui-cho.

**Employees participate in supporting disadvantaged children.**



Tarui plant employees organize plastic bottle cap collection to provide support for disadvantaged children around the world.

**Site familiarization with VASA's local community**



Creative activities were organized for 4-11 year old children of VASA's employees in Argentina. The main objective is to familiarize the children with the place where their parents work.

**Open Doors initiative for local communities**



Our San Salvo plant runs an 'Open Doors' initiative and organizes three family visits per year.

**Sponsoring educational awards**



NSG sponsored the Sustainable School Award at the St Helens Reporter Education Awards 2014. This category recognizes schools that have developed environmental awareness and sustainable development education across all the curriculum areas and the life of the school.

**Organizing community road safety initiatives**



As a part of Safety Day activities we liaised with the police and organized a 'Staying Visible' educational campaign for two kindergartens located near our plants in Sandomierz and Chmielów, Poland. Police talked about road safety and how to behave when approached by a stranger.

## SHAREHOLDERS

WE AIM TO KEEP OUR SHAREHOLDERS INFORMED THROUGH A FOCUSED INTERNATIONAL INVESTOR RELATIONS PROGRAM. THIS ENCOMPASSES REGULAR COMMUNICATIONS THROUGHOUT THE FINANCIAL YEAR, THROUGH MEETINGS, PUBLICATIONS, PLANT VISITS AND OUR WEBSITES.

In communicating with our shareholders, investors, the financial community regulatory authorities and the media, our aim is to report in a transparent, timely and accurate manner.

Our overriding objective is to provide as much information as possible to help our shareholders and potential shareholders understand our strategy and performance, to enable them to take investment decisions.

Annual and Interim reports are produced in both Japanese and English and widely distributed to stakeholders who may have an interest in our performance. These documents are also made available on our websites.

The CEO makes regular reports to the Board on investor relations and on specific discussions with major shareholders. The Board receives copies of all research published on the Group. Shareholders have an opportunity at the General Meeting of Shareholders to ask questions of the Chairman and the Board.

Our Investor Relations (IR) Policy reflects our aims to be open and fair and to comply with corporate ethics. The NSG Group is listed on the Tokyo Stock Exchange (TSE) and we disclose information in line with the TSE 'Rules on Timely Disclosure of Corporate Information by Issuers of Listed Securities'.

Where information does not fall under the category of timely disclosure rules, our policy is to communicate it swiftly and fairly, once it has been determined that the disclosure of such information is beneficial to investors.

### Communicating our strategy

Our profit improvement programs are well advanced and since our initial announcement in February 2012 we have introduced additional measures and accelerated restructuring activities.

We are looking carefully at all aspects of our current asset base. We have been quick to take action to adjust our capacity to demand, through temporary and permanent closures of plants.

### Long-term strategic vision

In May 2014, we announced that our new strategic vision is to transform the Group into a '**VA Glass Company**'. 'VA' comes from 'value-added' and 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 float glass business, moving from a traditional business model towards one increasingly focused on VA

Through this shift in focus, to become more of a 'VA Glass Company' the Group aims to become a more profitable and financially stronger business, with a lighter asset base, while reducing the cyclical nature of the business at the same time.

### Medium-term plan

The period through to FY2018 is critical to the establishment of the Group as a '**VA Glass Company**' the priority being to enhance our financial and operational performance while we shift to selling more value-added products as described in our new long-term vision. Operational performance will focus on our shift to selling a greater proportion of value-added products, fully utilizing our existing capacity and consolidating our reputation for manufacturing excellence.

We are executing our strategy through a market-facing regionally organized business, based on three business areas: Architectural, Automotive and Technical Glass. A good balance between regional and global organizational structures will drive efficiency and allow us to react quickly to market developments. In parallel, we are strengthening our market-driven culture, creating a passion for revenue growth, to fully utilize our assets.

We are aiming to lower the break-even point of our business by reducing overheads, improving manufacturing efficiency and controlling our input cost through best-in-class procurement and shared services. We aim to ensure that we spend our limited resources wisely and generate capacity at much lower capital costs.

We believe that 'people are our most important asset' and that effective use of our people is the main driver to surmount the current challenges we face. We are determined that we will not lose sight of our core values and principles, with safety and quality remaining top priorities. We aim to be a sustainable company, believing that good management of our people, our resources, our communities and our environment also makes good business sense.

## Communicating our performance

We report our results on a quarterly basis. We hold year-end financial results briefings for securities analysts and investors in Japan, with further communications in the intervening quarters. The CEO, COO and CFO personally present and discuss financial results, charting our progress against our strategy and the future outlook for the Group. Supplementing this, the CFO and IR team give background briefings to analysts and investors following the release of financial results. From time to time we arrange plant visits to enable analysts to see our operations at first hand.

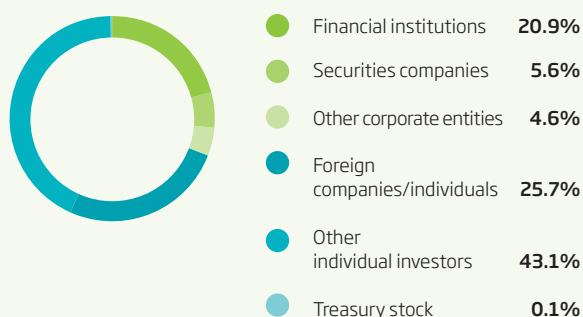
Over the past years, we have increased our focus on non-financial aspects of our performance relating to sustainability. This Sustainability Report is an important channel for communicating our progress. It is made available to shareholders in both English and Japanese versions, with additional data available on our website.

## Shareholder composition

The acquisition of Pilkington plc in 2006 transformed NSG from a regional Japanese glass company to an international group headquartered in Tokyo. Following the acquisition, the proportion of non-resident foreign corporations and foreign individuals owning NSG Group shares rose, but has since dropped back, with a higher proportion of individual shareholders now based in Japan.

Nevertheless, as an international group based in Japan, we have expanded our global IR effort to meet the requirements of shareholders and potential investors around the world. Most of our publications are produced in both Japanese and English. Details can be found on page 45 of this Report and on our website. We organize 'road shows' for analysts, investors and potential investors outside Japan, when appropriate

## Distribution of NSG Group shareholders (as at 30 September 2014)



## GRI INDEX

AS A GLOBAL BUSINESS, WE HAVE CHOSEN TO ASSESS OUR PERFORMANCE AGAINST THE GRI (GLOBAL REPORTING INITIATIVE). THE GRI AIMS TO PROMOTE COMMON CONVENTIONS AND TO ENABLE COMPARABILITY - SUCH AS CURRENTLY EXIST IN FINANCIAL REPORTING - IN CORPORATE REPORTING ON ECONOMIC, ENVIRONMENTAL, AND SOCIAL PERFORMANCE.

We believe the GRI approach is consistent with our aim to make steady incremental progress on improving our sustainability performance and its criteria are a good match with our own sustainability objectives.

We have self-declared our reporting to be Application Level B (Self-declared). We intend to be able to report further progress in our 2014 Sustainability Report, to be published in early 2015. We report our financial, social and environmental performance via three main channels:

- NSG Group Annual Report (AR)
- NSG Group Sustainability Report (SR)
- NSG corporate website, [www.nsg.com](http://www.nsg.com) (Web)

GRI Indicator	Criteria	Where to find this information
<b>1</b>	<b>Strategy and analysis</b>	
1.1	Statement from the most senior decision-maker of the organization about the relevance of sustainability to the organization and its strategy.	SR Page 2
1.2	Description of key impacts, risks and opportunities	Pages 8-9, 15 & Web
<b>2</b>	<b>Organization profile</b>	
2.1	Name of organization.	Page 40
2.2	Primary brands, products and services.	Pages 12-13
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	Page 3 & AR
2.4	Location of organization's headquarters.	Page 40
2.5	Number of countries where the organization operates, and names of countries.	Page 3
2.6	Nature of ownership and legal form.	AR
2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	Pages 3
2.8	Scale of the reporting organization.	AR
2.9	Significant changes during the reporting period regarding size, structure, or ownership.	AR
2.10	Awards received in the reporting period.	Page 28-31
<b>3</b>	<b>Report parameters</b>	
3.1	Reporting period.	Page 42
3.2	Date of most recent previous report.	IBC
3.3	Reporting cycle.	IBC
3.4	Contact point for questions regarding the report or its contents.	Page 40
3.5	Process for defining report content, including: determining materiality; prioritizing topics within the report; and identifying stakeholders the organization expects to use the report.	IBC
3.6	Boundary of the report.	IBC
3.7	State any specific limitations on the scope or boundary of the report.	IBC
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	AR
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement.	Not applicable
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	IBC
3.12	Table identifying the location of the Standard Disclosures in the report. Identify the page numbers or web links where the following can be found.	Pages 38-39
3.13	Policy and current practice with regard to seeking external assurance for the report.	Self declared at GRI Application Level B. No external assurance was pursued for this reporting period.
<b>4</b>	<b>Governance</b>	
4.1	Governance structure of the organization.	Pages 10-11
4.2	Indicate whether the Chair of the highest governance body is also an executive officer.	Page 10



GRI Indicator	Criteria	Where to find this information
4.3	For organizations that have a unitary Board structure, state the number of members of the highest governance body that are independent and/or non-executive members. State how the organization defines 'independent' and 'non-executive'.	Pages 10-11
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	Pages 10-11
4.5	Linkage between compensation for members of the board, senior managers and executives and the organization's performance.	Web
4.6	Processes in place for the Board to ensure conflicts of interest are avoided.	Pages 10-11
4.7	Process for determining the qualifications and expertise of the members of the Board for guiding the organization's strategy on economic, environmental, and social topics.	Web
4.8	Statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	Pages 7-9
4.9	Board procedures for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	Pages 10-11 & Web
4.10	Processes for evaluating the Board's own performance.	Web
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization.	Web
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	Pages 1-2
4.13	Memberships in associations or advocacy organizations.	Page 7
4.14	List of stakeholder groups engaged by the organization.	Pages 7, 26-37
4.15	Basis for identification and selection of stakeholders with whom to engage.	Page 7
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	Pages 26-37
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	Pages 26
<b>Economic</b>		
Disclosure on management approach.		AR
<b>Economic performance</b>		
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	AR
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	Page 7
<b>Environment</b>		
Disclosure on management approach.		Page 8
<b>Materials</b>		
EN1	Materials used by weight or volume.	Pages 22 & Web
EN2	Percentage of materials that are recycled input materials.	Pages 24 & Web
EN3	Direct energy consumption by primary energy source.	Page 22
EN4	Indirect energy consumption by primary source.	Page 22
EN5	Energy saved due to conservation and efficiency improvements.	Pages 22-23
<b>Water</b>		
EN8	Total water withdrawal by source.	Page 25
<b>Emissions, effluents and waste</b>		
EN16	Total direct and indirect greenhouse gas emissions by weight.	Page 24
EN17	Other relevant indirect greenhouse gases by weight.	Page 24
EN19	Emissions of ozone-depleting substances by weight.	Web
EN20	NOx, SOx, and other significant air emissions by type and weight.	Pages 24-25
EN22	Total weight of waste by type and disposal method.	Page 25
EN23	Total number and volume of significant spills.	Web
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	Pages 14-19
<b>Compliance</b>		

GRI Indicator	Criteria	Where to find this information
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	Web
<b>Product responsibility</b>		
Disclosure on management approach.		Page 9
<b>Customer health and safety</b>		
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	Web
<b>Product and service labeling</b>		
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.	Web
<b>Customer satisfaction</b>		
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	Web
<b>Marketing communications</b>		
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	Web
<b>Labor practices and decent work</b>		
Disclosure on management approach.		Page 8
<b>Employment</b>		
LA1	Total workforce by employment type, employment contract, and region.	Page 27
LA2	Total number and rate of employee turnover by age group, gender, and region.	Page 27
<b>Labor/Management relations</b>		
LA4	Percentage of employees covered by collective bargaining agreements.	Web
LA5	Minimum notice periods regarding operational changes, including whether it is specified in collective agreements.	Web
<b>Occupational health and safety</b>		
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region. Training and education.	Pages 27-28 & Web
LA10	Average hours of training per year per employee by employee category.	Page 27
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	Pages 26-27
LA12	Percentage of employees receiving regular performance and career development reviews.	Pages 5
<b>Human rights</b>		
Disclosure on management approach.		Page 8
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening.	Web
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.	Page 32
<b>Society</b>		
Disclosure on management approach.		Page 8
<b>Community</b>		
SO1	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	Pages 34-35
<b>Public policy</b>		
SO5	Public policy positions and participation in public policy development and lobbying.	Page 11
<b>Anti-competitive behavior</b>		
SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes.	AR
<b>Compliance</b>		
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	AR

## FURTHER INFORMATION

WE PRODUCE A REGULAR FLOW OF PUBLICATIONS INTENDED TO PROVIDE CURRENT AND POTENTIAL INVESTORS WITH AS MUCH INFORMATION AS POSSIBLE ABOUT THE GROUP, THE INDUSTRIES IN WHICH WE OPERATE AND THE ORGANIZATION, STRATEGY, TARGETS AND PROGRESS OF THE GROUP.

### Publications

The range of these publications is shown below.



#### Annual Report

In order to obtain a full understanding of the performance of the Group, this document should be consulted.



#### To Our Shareholders

Published twice a year, in June and December, designed to keep shareholders informed of progress against our strategy. Editions in both English and Japanese.



#### The Way we do Business

Produced for Group employees in all of the languages in which the Group operates, summarizing the main points of the Group's Code of Conduct.

### Company information

(as at 31 March 2014)

**Company name:** Nippon Sheet Glass Co., Ltd.

**Unified global brand:** NSG Group

**Head office:** 5-27, Mita 3-Chome, Minato-ku, Tokyo 108-6321 Japan

**Established:** 22 November 1918

**Paid-in capital:** ¥116,449 million

**Total assets:** ¥925,175 million

**Net sales:** ¥606,095 million (consolidated)

**Employees:** 27,079

**NSG Group companies:** 233

**Web:** [www.nsg.com](http://www.nsg.com)

### Websites

#### NSG Group corporate website

(English)

[www.nsg.com](http://www.nsg.com)

#### NSG Group corporate website

(Japanese)

[www.nsg.co.jp](http://www.nsg.co.jp)

#### Commercial website

(Architectural and Automotive)

[www.pilkington.com](http://www.pilkington.com)

#### Sustainability contact

[www.nsg.com/en/contact-us](http://www.nsg.com/en/contact-us)

## APPROACH TO REPORTING

This Report forms part of our non-financial performance communications and reflects Group, regional and site-level reporting. Unless otherwise stated, the Report covers those businesses over which the NSG Group has management control. Data relating to the environmental performance of Group operations covers 31 float and five rolled-glass sites. Joint venture sites where we do not have operational control are excluded. All Architectural, Automotive and Technical Glass downstream processing are also included in the reporting. Safety statistics shown cover our 'workforce' (employees and permanent contractors).

Our environmental and social performance is of interest to our stakeholders and important to our business success and we have been reporting on these matters since 2002, in successive environmental, social activity or CSR reports.

We published our first Sustainability Report in 2009, when we decided to widen our reporting to cover all aspects of sustainability. In June 2009, we published our Group Sustainability Policy, setting our sustainability agenda, and in December 2009 established a Group Sustainability Committee to direct, coordinate and monitor our efforts to improve our approach to sustainability.

In 2010, the Board agreed specific sustainability targets for the Group. These are shown on page 5 of this Report, along with an account of our progress towards them.

In 2012, Shiro Kobayashi was appointed as the Group's director of sustainability. Shiro chairs the Sustainability Committee, which is leading our efforts to ensure that the principles of sustainable development are embedded in all of the Group's activities. We will report further on our progress in our 2015 Sustainability Report, which will be published in early 2016.

This Sustainability Report has been prepared in accordance with the Global Reporting Initiative (GRI) G3 Sustainability Reporting Guidelines, which provide a globally recognized framework for reporting on an organization's economic, social and environmental performance and responsiveness. We have self-declared our performance at Application Level B.

To keep the size of the printed report to a minimum, we have included additional information, charts and tables covering our performance in the Sustainability section of our website. The printed report can also be downloaded from our website at [www.nsg.com/sustainability](http://www.nsg.com/sustainability).

For detailed GRI and UNGC index, please visit [www.nsg.com/sustainability](http://www.nsg.com/sustainability).



This report is printed on Revive uncoated, a 100% recycled paper made from post-consumer collected waste. Revive uncoated is manufactured to the certified environmental management system ISO 14001.

Published by NSG Group  
Designed by Jones and Palmer