



# **NSG Group Information 2024**

Nippon Sheet Glass Co., Ltd.

## NSG Group Information

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# What is NSG Group?

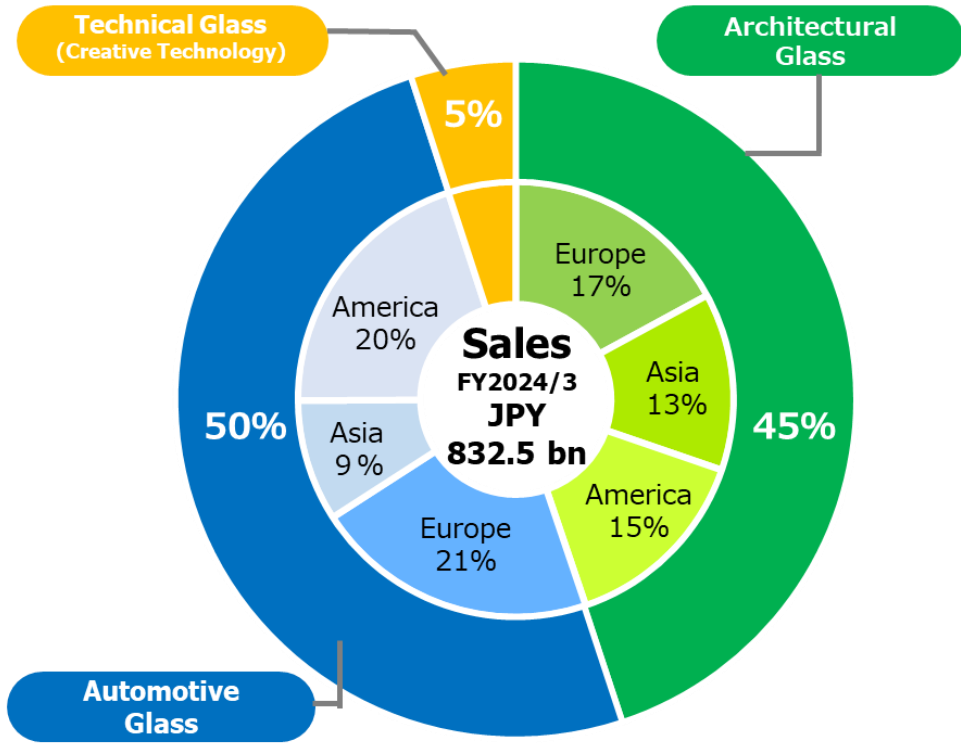
**NSG Group is one of the world's largest glass manufacturers, with a strong passion for glass and a history of innovation, working with colleagues who share our aspirations.**

<b>Tradition</b>	Over 100 years of passion for glass.
<b>Business Description</b>	Focusing on 'glass', we are developing three businesses: architectural glass, automotive glass, and creative technology.
<b>Global Network</b>	With major manufacturing bases in Europe, North America, South America and Asia, products are sold in over 100 countries worldwide.
<b>Innovation</b>	Aiming to achieve a society capable of sustainable growth through a variety of world-first products and innovations
<b>One Team</b>	Mutual respect and cooperation, a culture of diversity, and coexistence with society

## Our Vision



# Business Overview



### Architectural Glass

**Leading supplier for architectural glazing and thin film solar panels**

**Products**

- Building glass & glazing
- Glass for solar panels
- High value-added glass for industry

**Business Direction**

Due to changes in people's lifestyles and society, we are creating a large number of high-value-added products that meet the needs of diversifying glass products.

In addition, we are working to achieve carbon neutrality by 2050, and we are also promoting the development of products for renewable energy and biological protection by utilizing our unique online coating technology, which is one of our strengths.



Courtesy of First Solar Inc.




### Automotive Glass

**Key supplier globally in new vehicle (OE) and automotive aftermarket (AGR)**

**Products**

- Glazing for new vehicles
- Glazing for replacement markets

**Business Direction**

We provide safer, more comfortable, and environmentally friendly glass products with our unique technologies and flexible solutions that go beyond the conventional realm of automotive glass and address the "CASE" concept.

Having pioneered the development of a manufacturing method (APBL) suitable for the production of high-precision windshields required for ADAS and HUD, we have established a global production system. Looking ahead to the shift to EVs, we are also developing products that meet growing needs, such as IR (infrared) cut glass and variable tinted glass that conserves energy.




### Technical Glass (Creative Technology)

**Unique 'Number One' and 'Only One' niche products**

**Products**

- Thin sheet glass
- Optoelectronic products
- Special glass fiber products

**Business Direction**

With a top share in the fields of ICT, mobility, high-performance materials, and design and art, we have many niche top product lineups. Through co-creation with our customers, we will further develop applications through the development of unique materials that contribute to the evolution of products.

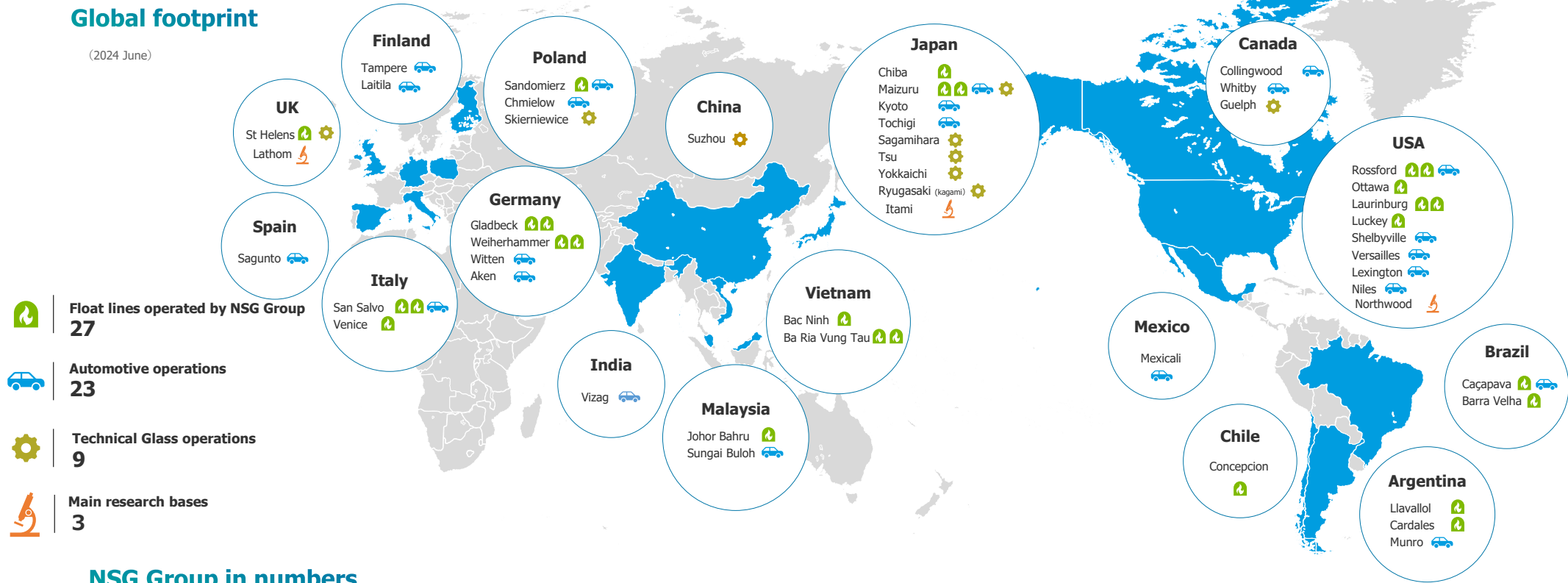




# Manufacturing and Research Bases

## Global footprint

(2024 June)

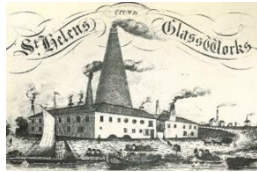


- Float lines operated by NSG Group**  
**27**
- Automotive operations**  
**23**
- Technical Glass operations**  
**9**
- Main research bases**  
**3**

## NSG Group in numbers

Sales <b>JPY832.5 bn</b> <small>(FY2024/3)</small>	Operating Profit <b>JPY35.9 bn</b> <small>(FY2024/3)</small>	Net Assets <b>JPY1,007.6 bn</b> <small>(FY2024/3)</small>	Employees <b>25,300</b> <small>(March 2024)</small>	Float lines <b>27</b> <small>(March 2024)</small>	Foundation <b>1918</b>	Sales in over <b>100 countries</b>
Female managers ratio Actual results <b>14.4%</b> → <b>16.0%</b> <small>(December 2022) (March 2024)</small>	Research grants through NSG Foundation <b>1,485 PJs</b> <small>(Cum above JPY 1.8bn : 2024 May Cumulative)</small>	Online-coating glass share <b>No.1</b> <small>(9 float lines)</small>		Lenses for multi function share <b>No.1</b>		

# History



In 1826, the **St. Helens Crown Glass Company**, Pilkington's predecessor, was founded in England.

The world's first glass technology from the NSG Group

## 1826-1940s Foundation & Expansion

- 1918** America Japan Sheet Glass Co Ltd established in Osaka
- 1931 Company name changed to Nippon Sheet Glass Co., Ltd.
- 1936 Yokkaichi site opened

- 1942 First patent on coated glass technology
- 1946 The first production plant for insulated glass was operating

## 1950s -1960s Capacity Expansion and Start of Automotive Glass

- 1950 Listing on stock exchanges in Japan
- 1951/1964 Maizuru / Chiba sites opened
- 1965 First float glass production in Asia at Maizuru site

## 1952 **Invention of float glass**

## 1970s-1990s Overseas Expansion & Diversification

- 1971 First overseas investment made in Malaysia
- 1978-79 Ultra Fine Float™ / glass fiber business launched
- 1995 Overseas investment expanded including China and Vietnam

- 1970s Development of a wire-heated windshield for Rolls-Royce
- 1980s First online pyrolytic low-e coating  
Coated heated windshield for GE EV1  
Modular glazing with PU RIM

## 2000s Acquisition of Pilkington & Globalization

- 2004 Headquarters moved from Osaka to Tokyo
- 2006 Acquisition of Pilkington, becoming global leader in flat glass
- 2008 "Company with committees" governance adopted

- 1997 First commercial vacuumed glass product, "Pilkington Spacia™"
- 1998 First oxy fired float line in the world in Rossford, OH

## 2010s- Shift to Value-added Business & Focus on Financial Stability

- 2018 Announcement of "Our Vision"
- 2020 Float lines for solar energy glass established in the US and expanded in Vietnam
- 2024 Announcement of Medium-Term Plan, "2030 Vision: Shift the Phase"

- 2001 First self-cleaning glass, "Pilkington Activ™"
- 2003 First high-performance solar control on-line coated clear glass
- 2005 Anti-reflective glass, "Pilkington OptiView™"

# Medium-Term Plan 2030 Vision: Shift the Phase

Focusing on our strengths, glass and related technologies, we aim to expand profits in high-value areas that contribute to the sustainable development of society.

## GOAL

**To shift our company's phase and become vital in advancing a sustainable society**

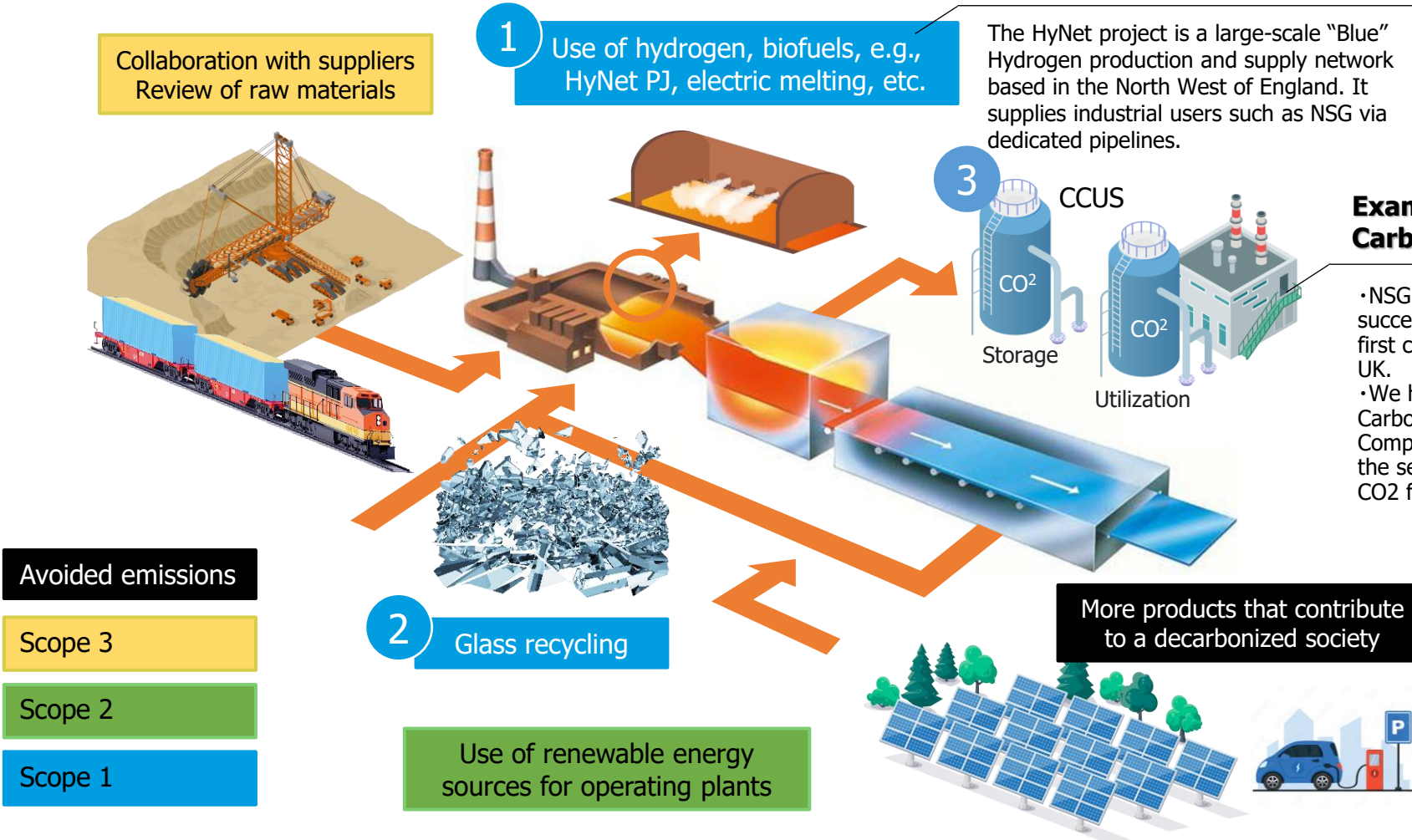
## Commitment

- We are committed to creating value that realizes a sustainable society for, and with, all our stakeholders.
- We are committed to developing and providing glass and its related technologies and services that play a crucial role in our customers' solutions.
- We are committed to deeply understanding our customers' potential needs and delivering solutions that are suitable for them by leveraging both tangible and intangible assets.
- We are committed to continuing to invest in our people, taking pride in a global, diverse team passionate about glass and brimming with talent.



# Decarbonization Initiatives

NSG Group aims to reduce CO<sub>2</sub> emissions by 30% by 2030 and achieve carbon neutrality by 2050.



- Avoided emissions
- Scope 3
- Scope 2
- Scope 1

### Examples of Recent Initiatives : HyNet Project

The HyNet project is a large-scale “Blue” Hydrogen production and supply network based in the North West of England. It supplies industrial users such as NSG via dedicated pipelines.



### Examples of Recent Initiatives: Carbon Capture

- NSG has announced the successful launch of Europe's first carbon capture trial in the UK.
- We have initiated a field trial of Carbon Capture Solvent Compatibility Units (CCSCUs) for the separation and recovery of CO<sub>2</sub> from exhaust flue gases.



### Examples of Recent Initiatives: Pilkington Mirai™

Contributing to the decarbonization of buildings with Pilkington Mirai™, a low-carbon glass that reduces carbon footprint by 50%.





# Supply Chain Initiatives

NSG Group is working with its suppliers to achieve a sustainable society.

## The Supplier Code of Conduct

The Supplier Code of Conduct sets out the minimum standards and behaviors we expect from our suppliers of goods & services in areas of ESG. We expect all new suppliers and existing contracted suppliers to have signed agreement to the Code.



## Sustainable Supply Chain Charter

In September 2023, the Supply Chain Charter was launched to enhance and accelerate actions beyond the Code of Conduct to deliver the Group's sustainability objectives.

This Charter sets out the eight areas that we have identified as the most critical in terms of environmental and social impact.



## External evaluation in FY2024/3

**CDP Supplier Engagement Leader**  
 We have been recognized by CDP in their most recent evaluation for CY2024 as a Leader in Supplier Engagement.

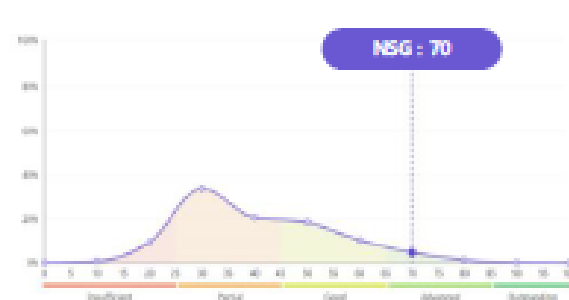
This places us among the top 500 companies worldwide (out of a total of more than 13,000+ companies assessed), including 105 from Japan.



## Sustainable Procurement Pledge

NSG Group has also taken the step in FY2023/3 to join the League of Champions within the Sustainable Procurement Pledge (SPP) organization. This network of individuals and companies is driving the agenda on Sustainable Procurement and Supply Chains.

Sustainable Procurement Score Distribution



# DEI Initiatives

NSG Group is committed to fostering an inclusive and diverse culture where everyone can be their best.

## NSG Group DEI strategy

**We will create and develop an organization where each and every one of us will shine brightly like glass.**

### Diversity

Recognize individual differences, respect each other, and create value

### Equity

Providing suitable opportunities for each individual to demonstrate their strengths

### Inclusion

Everyone feels safe to voice their opinions, discuss, and lead decisions

## Statement of Intent

### Having an Inclusive Culture and Environment:

We give everyone an equal opportunity to contribute to their full potential and harness the richness of ideas.

### Having a Diverse Workforce:

Any differences in individuals' backgrounds, experiences, preferences and beliefs are recognized, respected and valued for their variety of perspectives.



In commemoration of International Women's Day, an Italian site was lit up in purple.



NSG Group and Pilkington UK win big on Diverse Talent, Decarbonization and product Development at the Glass Focus Awards 2024



Promoting diversity in the tech industry with the "Skills City Program"



Upskilling women in our workforce so they are empowered and encouraged to grow and develop for future roles within the business.

**We will promote the four 'Fs'**  
**Flat, Frank, Fast, and Fun communication**  
**within the organization as part of our corporate culture.**

# Board of Directors (As of 27 June 2024)

NSG Group adopts a “Company with Three Committees” governance structure, and has in place, as statutory corporate organizations, Board of Directors and Nomination Audit and Compensation Committees, and an office of Executive Officer. Currently, the Chairperson of the Board as well as chairpersons of all three Committee are all appointed from among the Independent External Directors.

Independent External Director  
Chairperson of the Board  
Chairperson of  
Nomination Committee

**Hiroshi Ishihara**

Director



Independent External Director  
Chairperson of Compensation  
Committee

**Jörg Raupach  
Sumiya**

Director



Independent External Director  
Chairperson of Audit Committee

**Kunihito Minakawa**

Director



Independent External Director

**Shinji Asatsuma**

Director



Independent External Director

**Eriko Sakurai**

Director



Director  
Representative Executive Officer  
President and CEO

**Munehiro Hosonuma**

Director



# Executive Officers (As of 27 June 2024)

Director,  
Representative Executive  
Officer  
President and CEO



**Munehiro Hosonuma**

Representative  
Executive Officer

Executive Officer,  
Chairperson of the  
Company



**Shigeki Mori**

Executive Officer,  
Chairperson of the  
Company

Management team with diverse members from various backgrounds, including international, gender, and age, etc.

Head of Architectural Glass

**Leopoldo Garces Castiella**

Senior Executive  
Officer



CAO, and Company  
Secretary

**Koichi Hiyoshi**

Senior Executive  
Officer



Head of Creative  
Technology

**Hisashi Okamoto**

Senior Executive  
Officer



Chief Financial  
Officer

**Akihito Okochi**

Senior Executive  
Officer



Head of Automotive

**Rob Purcell**

Senior Executive  
Officer



Chief Technology Officer

**Mike Greenall**

Executive  
Officer



Chief Human  
Resources Officer

**Denise Haylor**

Executive  
Officer



Chief Risk Officer (CRO)  
and Assistant CFO

**Masaki Kambayashi**

Executive  
Officer



Chief Legal Officer,  
Chief Ethics &  
Compliance Officer

**Michael Kiefer**

Executive  
Officer



Sustainability Director

**Shiro Kobayashi**

Executive  
Officer



Chief Strategy Officer

**Yohei Nakatsuji**

Executive  
Officer



Finance Director

**Iain Smith**

Executive  
Officer



# Social Action Programs

As a responsible and important member of the local communities in which we operate, NSG Group believes it is important to make a positive contribution to the development of our local communities.

## NSG Foundation

NSG Foundation(Nippon Sheet Glass Foundation for Materials Science and Engineering) aim to contributing to the promotion of R&D activities on inorganic materials through research grants, which amounts above JPY1,880 million for 1,485 projects cumulatively (As of May 2024)



(公財) 日本板硝子材料工学助成会 研究助成金贈呈式

## Contributing to Society through the Sumitomo Group

As a member of the Sumitomo Group, we support projects in the fields of basic science, the environment, art and culture, and international exchange through the Sumitomo Foundation, and we also support events such as the "A Brief Message from the Heart" Letter Contest and the "Speech Contest of the Schools for the Blind" through the Sumitomo Group Public Affairs Committee, which are linked to the spirit of "People to People".



## Community Support Activities in Brazil

The Group company in Brazil is supporting the social project "Banho Solidário Sampa", which provides homeless people in São Paulo, Brazil with warm baths, clean clothes and other daily necessities.



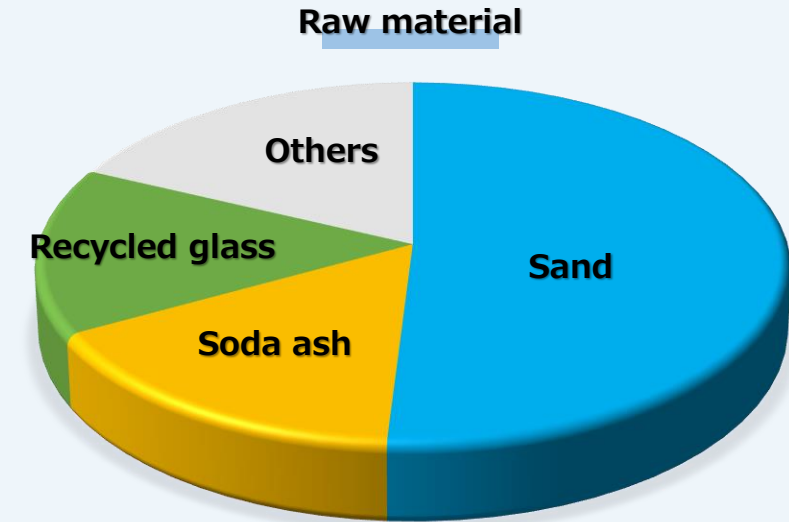
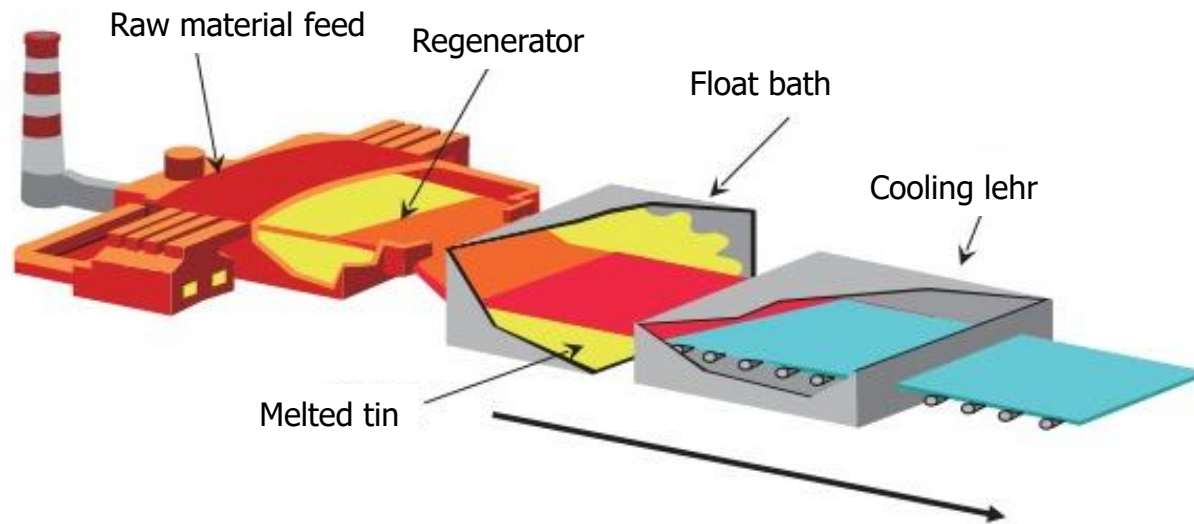
## Bee Project Charity Activities in UK

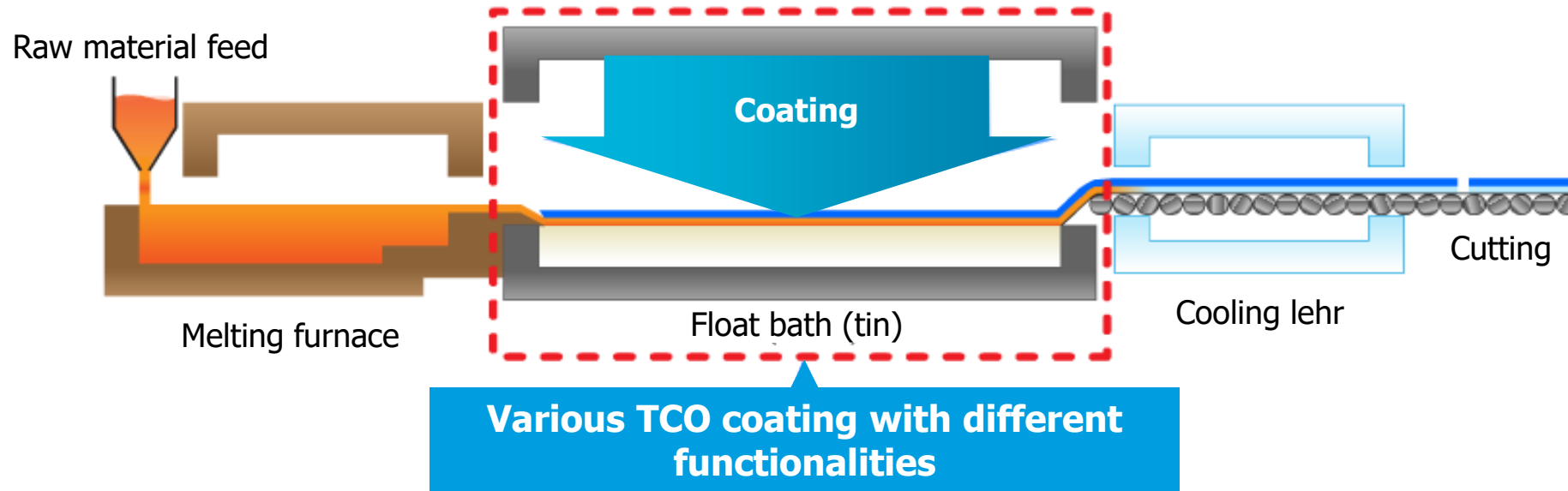
Honeybees are kept at the Lathom and NGFE sites in the UK, and the honey is sold locally, with the profits donated to local charities every year. This activity also helps to protect the environment and increase biodiversity around the sites, which are rich in nature and popular with the bees.



## What is “Float glass” ?

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





## Characteristics of Online Coatings

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



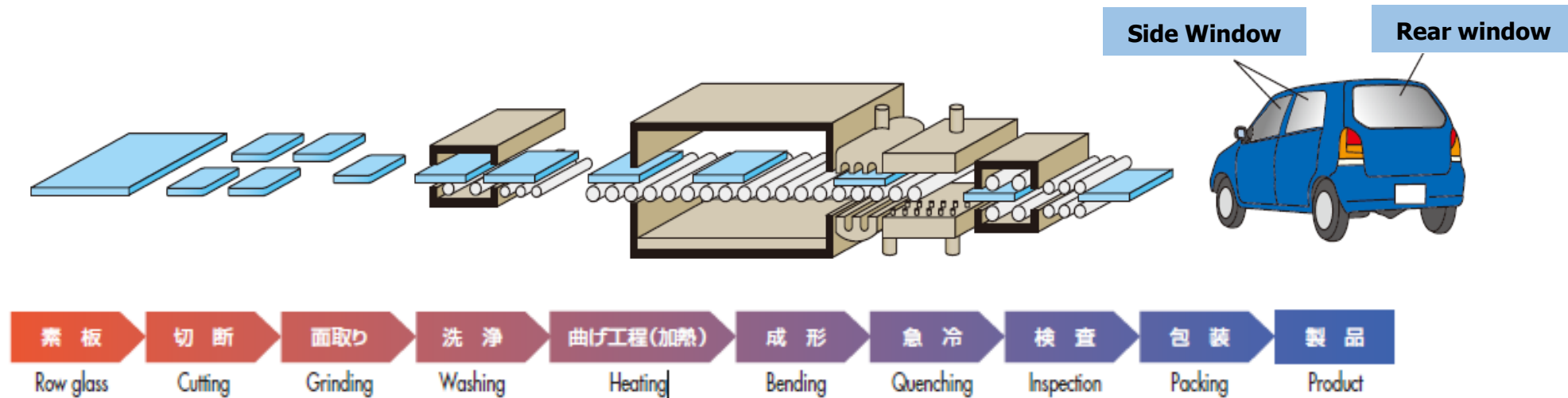
## What is “Toughening glass”?

Flat glass is placed in a tempering oven, and heated to between 650 and 700°C, which is near the glass softening temperature.

Then the glass is quenched by blowing air evenly on both sides, causing the surface to harden first, with the inside cooling and shrinking later. The result is the formation of a stable compressive stress layer at the surface, and the glass is 3 to 5 times more resistant to impact than ordinary glass.

This glass is mainly used for the side and rear windows of automobiles.

### Main uses for toughening glass





## What is “Laminated Glass” ?

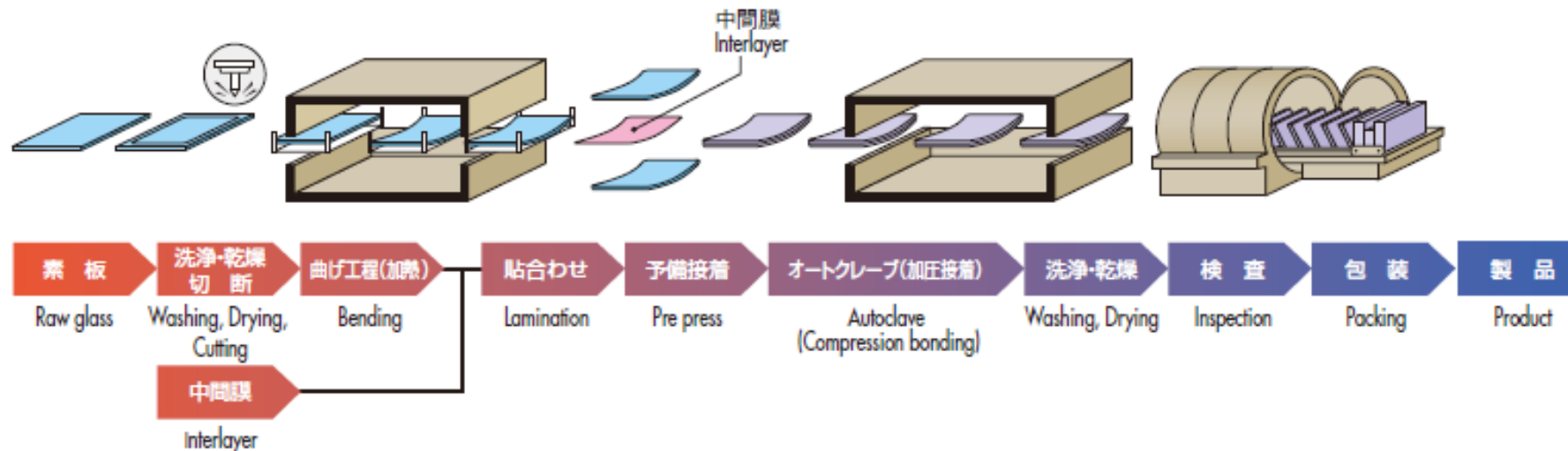
Laminated glass consists of two pieces of glass with a sandwich of transparent plastic interlayer.

This is then placed into an air-pressure autoclave and treated at high temperature and pressure.

Some special products are made with 3 or more sheets of glass.  
This glass is mainly used for the front windows of automobiles.

### Main uses for laminated glass

#### Windshield





\ NSG Badger /

