

Introducing Nova Marine Glass, a minority owned U.S. Company

A comprehensive look at our
services and sustainability efforts



TUTTOTONDO
GROUP



Agenda

- Our Company
- Quality certifications
- Project References
- Glass – Industry Data
- Sustainability and Future Commitments

Our Company

An overview of our company and
expertise

Company Background

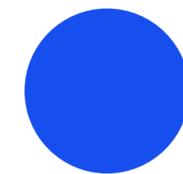
NOVA MARINE GLASS LLC, part of TUTTOTONDO Group, specializes in serving the cruise ship industry by engineering, manufacturing, installing and certifying highly customized glass products.

The Company was born in 2023 with the idea to create a US based glazing manufacturing and services reference for the marine industry.

Key Factors

- Group expertise and market share.
- Manufacturing expertise.
- Marine service expertise.

Products and Services



Our offerings and capabilities

Product Offerings

- Structural glass: windows, portholes, windbreakers.
- Decorative glass: stairs, railings, doors, partitions, tabletops.
- Mirrors.





Service Offerings

- Any type of installation.
- Cleaning and restoration.
- Resealing.



Manufacturing Plant

- Located in Miami, FL, providing tailor-made glass solutions.
- Equipped with state-of-the-art machinery ensuring high-quality standards.
- Includes straight polishing machine, cutting table, drilling machine, laminating oven, and bent oven.
- Dedicated team of certified glass artisans.
- Expertise and skill at every stage of production and installation.





Quality Certifications

- ISO 9001 & 14001: Enhances quality and operational efficiency.
- Improved quality control and increased customer satisfaction.
- Operational and environmental efficiency.
- Enhanced employee engagement and continuous improvement.
- Better risk management and regulatory compliance.



QUALITY CERTIFICATIONS – ISO 614 (TO BE EXPANDED HIGHLIGHTING COLLABORATION WITH RINA)



ISO 614, specifically related to marine glazing, outlines standards for the performance and characteristics of glass products used in marine environments. The benefits of adhering to ISO 614 for marine glazing include the following:

- **Enhanced Safety:** ISO 614 sets rigorous standards for impact resistance, which helps ensure that marine glazing can withstand harsh conditions, including impacts from waves, debris, and significant forces encountered at sea. This enhances the safety of passengers and crew aboard vessels.
- **Quality Assurance:** Adhering to ISO 614 indicates that the manufacturer has systems and processes in place for quality control. This gives confidence to shipbuilders, owners, and operators regarding the reliability and performance of the glazing products.
- **Reduced Maintenance Costs:** High-quality marine glazing that meets ISO 614 standards minimizes the need for repair and maintenance, resulting in cost savings over time.
- **Market Differentiation:** Companies certified to ISO 614 can differentiate themselves in the marketplace, showcasing their commitment to quality and safety, which can attract customers and partnerships in the maritime industry.
- **Environmental Impact:** Using high-performance, durable materials in marine glazing can lead to a reduced environmental impact by minimizing waste and enhancing energy efficiency.

PROJECTS REFERENCES

Carnival Cruise Line

- CCL Elation Dry Dock January 2023, Freeport – Bahamas (Water park structural mod, various windows restoration and decorative glass)
- CCL Pride Dry Dock May 2023, Cadiz – Spain (Water park structural mod, various windows and decorative glass)
- CCL Paradise Dry Dock October 2023, Freeport – Bahamas (Water park structural mod, various windows and decorative glass)
- CCL Freedom Dry Dock October 2023, Cadiz – Spain (Water park structural mod, various windows and decorative glass)
- CCL Sunrise Dry Dock February 2024, Cadiz – Spain (Water park structural mod, resealing, various windows and decorative glass)
- CCL Glory Dry Dock April 2024, Cadiz – Spain (Water park structural mod, various windows and decorative glass)
- CCL Legend Dry Dock May 2024 Marseille – France (Water park structural mod, antique mirrors, various windows and decorative glass)
- CCL Splendor August 2024 Singapore – Singapore (Water park structural mod, various windows and decorative glass)
- CCL Radiance Sept 2024, Victoria – Canada (Water park structural mod, various windows and decorative glass)

Princess Cruise Lines

- Caribbean Princess
- Island Princess

Oceania Cruises

- Oceania Insignia- Supply and Installation

Virgin Voyages

- Scarlet Lady- Supply and Installation
- Valiant Lady – Supply and Installation

Silversea Cruises

- Silver Wind- Supply and Installation
- Silver Nova- Supply and Installation

Royal Caribbean Cruises

- Freedom of the Seas- Supply and Installation
- Enchantment of the Seas- Supply and Installation
- Radiance of the Seas- Supply and Installation

Disney Cruise Line

- Disney Magic, 2022/2023/2024 (Various Glass Replacement in Service and Dry Dock)
- Disney Wonder, 2022/2023/2024 (Various Glass Replacement in Service and Dry Dock)
- Disney Wish, 2022/2023/2024 (Various Glass Replacement in Service and Dry Dock)
- Disney Dream, 2022/2023/2024 (Various Glass Replacement in Service and Dry Dock)
- Disney Fantasy, 2022/2023/2024 (Various Glass Replacement in Service and Dry Dock)



Glass — Industry Data

Glass covers approx. 25% of total vessel surface

Vessel type:

- Guest capacity: 4,300
- Crew: 1,600
- Ton: 180,000

Public areas:

- IGUs 1,900sqm
- Balustrades 300sqm (tempered/laminated)
- Windscreens 3,250sqm (tempered/laminated)

Glass – Industry Data

Cabins

- IGUs 3,500sqm
- Balcony balaustrades (tempered/laminated) 2,600sqm

IGUs total sqm: 5,400

Tempered/laminated total sqm: 6,150

Total glass value is approx. 30M\$

- Glass value 24M\$ ($\approx 80\%$)
- Labor value 6M\$ ($\approx 20\%$)

Sustainability and Future Commitments

Our dedication to sustainable
practices and innovation

CLIA and its cruise line members have identified the SDGs to which the industry is contributing and can make a difference. These SDGs, referenced throughout this report, include Climate Action, Sustainable Cities and Communities, Good Health and Well-Being, Life Below Water, Life on Land and more

<p>3 GOOD HEALTH AND WELL-BEING</p>	<p>GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages.</p>	<p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<p>DECENT WORK AND ECONOMIC GROWTH Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.</p>	<p>13 CLIMATE ACTION</p>
<p>5 GENDER EQUALITY</p>	<p>GENDER EQUALITY Achieve gender equality and empower all women and girls.</p>	<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	<p>RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns.</p>	<p>14 LIFE BELOW WATER</p>
<p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all.</p>	<p>11 SUSTAINABLE CITIES AND COMMUNITIES</p>	<p>SUSTAINABLE CITIES AND COMMUNITIES Make cities and human settlements inclusive, safe, resilient and sustainable.</p>	<p>15 LIFE ON LAND</p>
<p>6 CLEAN WATER AND SANITATION</p>	<p>CLEAN WATER AND SANITATION Ensure availability and sustainable management of water and sanitation for all.</p>	<p>15 LIFE ON LAND</p>	<p>LIFE ON LAND Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.</p>	<p>14 LIFE BELOW WATER Conserve and sustainably use the oceans, seas and marine resources for sustainable development.</p>

Hull coatings increase fuel efficiency by nearly 10%

15% of CLIA-member ship entering service from 2023 through 2028 are equipped with battery storage and/or fuel cells to allow for hybrid power generation

EGCS technology installed on ships is designed to remove 98% of sulphur and well over 50% of particulate matter, with a 12% reduction in NOX

Using digital technology to be more energy efficient

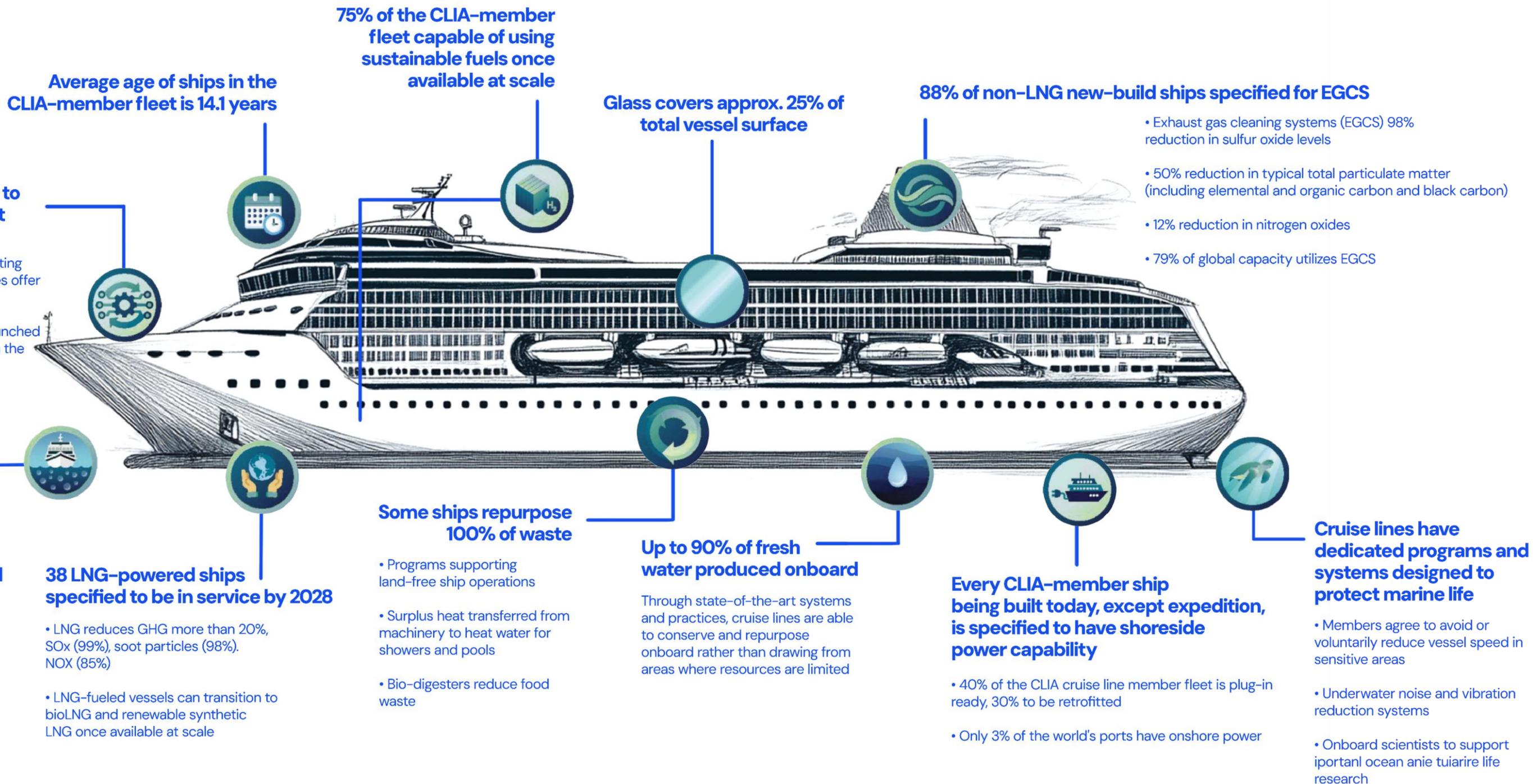
- From tracking the energy use of appliances in a ship's galley to routing ships optimally, digital technologies offer a new energy-saving tool.
- Efficiency tracking systems are currently in use on 171 CLIA-member ships, representing 60% of the global fleet, with many more systems planned.
- Each new class of ship that is launched is around 20% more efficient than the last.

Cruise lines are pursuing fuel flexibility, investing today in propulsion technologies with conversion capabilities for the future

- 41 ships with engines powered by fossil LNG will be in service by 2028—all easily adaptable for the use of bioLNG or synthetic LNG when these fuels become available at scale.
- 7 ships will launch between 2023 and 2028 that are either methanol ready on delivery or methanol capable, representing 15% of the order book.

Cruise lines are investing in shoreside electricity, which allows ship engines to be switched off at berth, reducing emissions by up to 98%, depending on the mix of energy sources

- Today, 120 ships, representing 46% of the CLIA-member fleet, are equipped to connect to shoreside electricity—3 48% increase from the prior year.
- By 2028, more than 210 ships with shoreside power capability, plus additional ships to be retrofitted with the capability.
- Only 2% of the world's ports currently have at least one cruise berth with onshore power



Sustainability in Production and Packaging

Recycled Glass Production

- Use Recycled Glass (Cullet): Incorporate cullet in your glass production process. This reduces the need for raw materials and lowers energy consumption since cullet melts at a lower temperature than raw materials.
- Energy Efficiency (already in process)
- Upgrade Equipment Technology: Invest in energy-efficient equipment

Eco-Friendly Packaging (already in process)

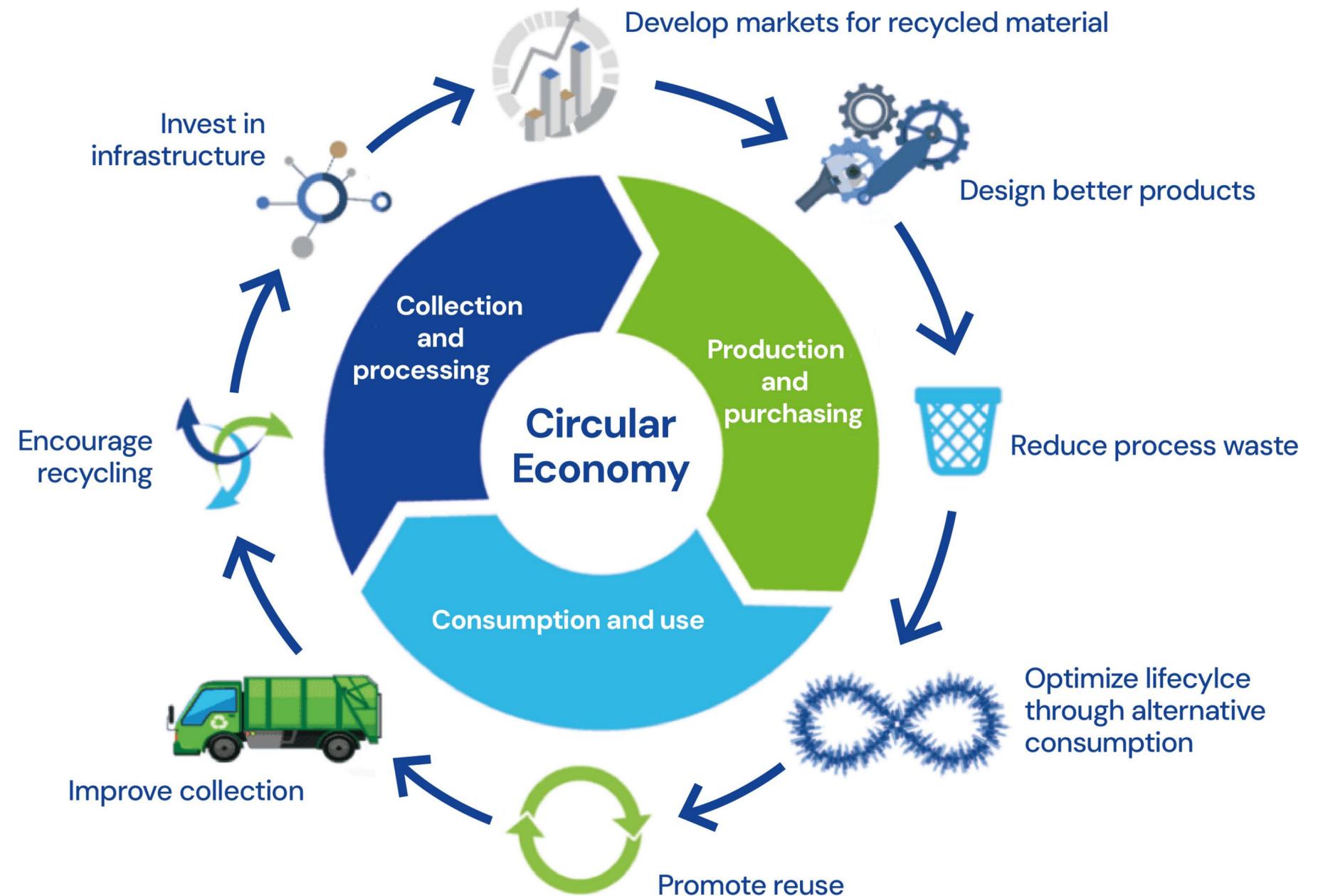
- Sustainable Packaging Materials: Use biodegradable or recyclable packaging materials. Consider minimalistic designs that reduce material usage.

Water Conservation (in process)

- Water Recycling: Implement systems that recycle and reuse water in the production process to reduce overall water consumption.

Community Engagement and Education

- Educational Programs: Partner with local schools or community groups to educate about the benefits of glass recycling and sustainable practices.



Solar Control Glazing

- Solar control glass reduces energy consumption and enhances indoor comfort.
 - Blocks substantial solar heat, lowering energy costs.
- Filters out up to 99% of harmful UV rays, protecting skin and interior furnishings.
- Contributes to environmental conservation by reducing carbon emissions.

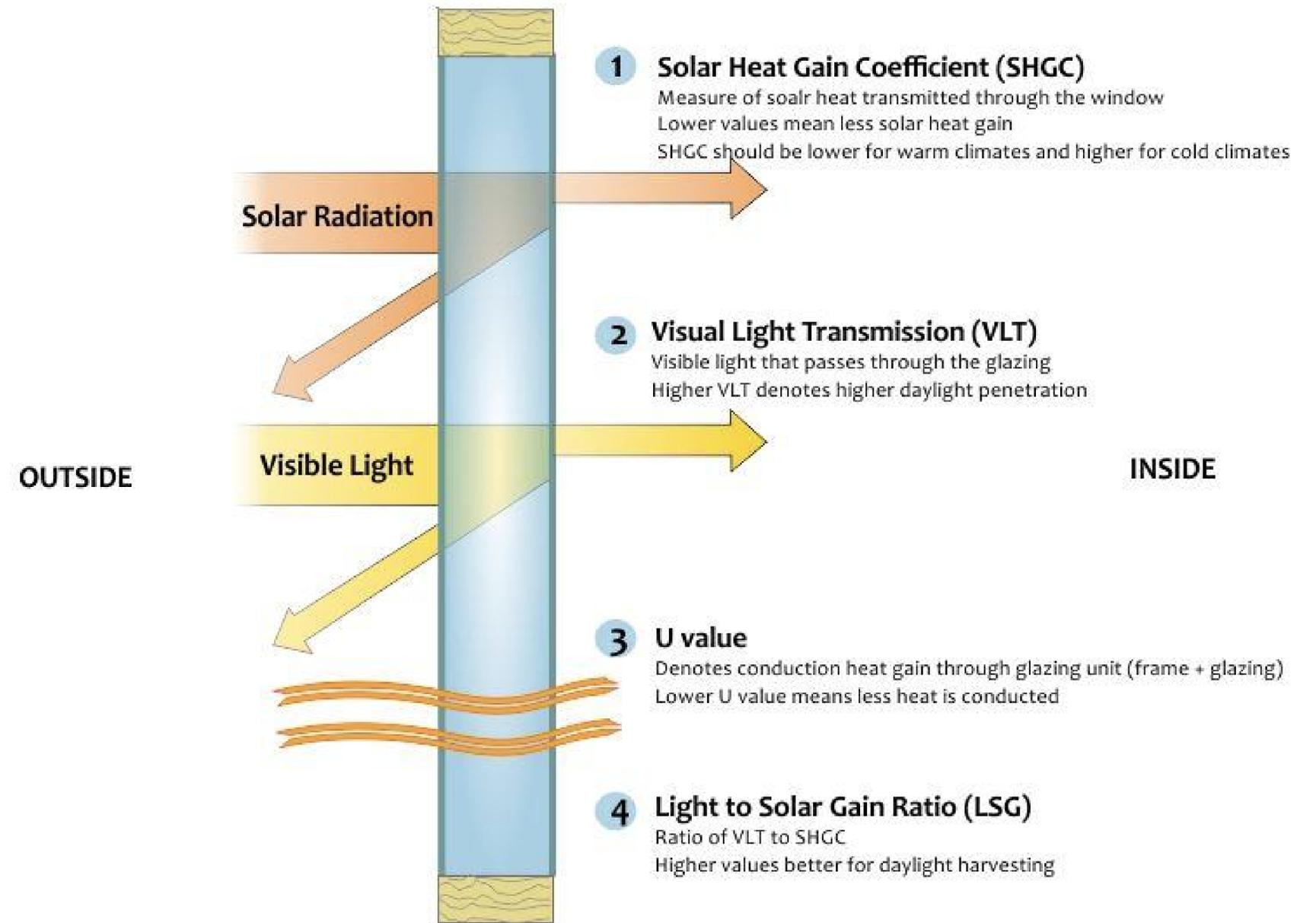
Solar control glazing

Solar Control Glass: An Unprecedented Innovation Championing Energy Efficiency

In the modern era of sustainable architectural design, solar control glass stands out as a revolutionary solution. It fundamentally alters our understanding of energy efficiency in construction. This innovative technology accomplishes more than just reducing energy consumption – it enhances indoor comfort, promotes healthier living conditions, and paves the way for a more sustainable future.

The Benefits of Solar Control Glass Energy Efficiency

Solar control glass significantly reduces the cooling load on air conditioning systems by blocking substantial solar heat, lowering energy consumption and utility costs. This makes it a cost-effective and energy-efficient solution for temperature regulation.



glazing properties relevant for daylight harvesting and energy efficiency

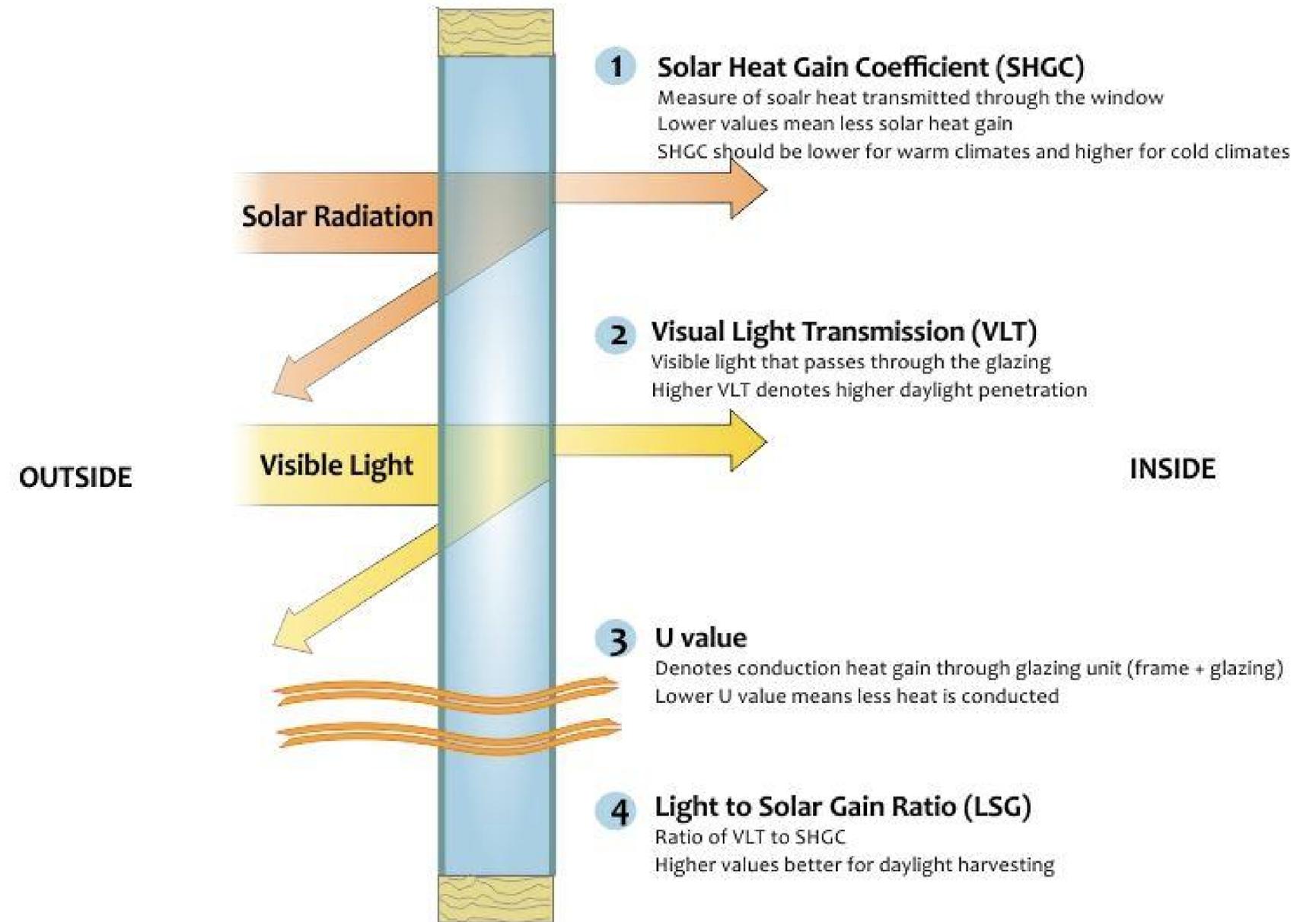
Solar control glazing

Comfort and UV Protection

- Solar control glass enhances occupant comfort by minimizing indoor heat gain and reducing glare. It maintains a comfortable indoor temperature by minimizing temperature fluctuations caused by direct sunlight, allowing occupants to enjoy natural light without feeling overheated.
- Additionally, it filters out up to 99% of harmful UV rays, protecting skin and preventing the fading of interior furnishings such as furniture, flooring, and artwork.

Environmental Impact

Solar control glass helps lower carbon emissions by optimizing energy usage and decreasing the need for HVAC systems. This contribution to sustainable building practices supports environmental conservation and helps combat climate change by reducing structures' overall carbon footprint.



glazing properties relevant for daylight harvesting and energy efficiency

Long-Term Commitment

- Personnel education and training focused on excellence and sustainable practices.
- Continuous investment in new products and technologies.
- Expanding our product variety.
- Increasing our raw material stock.

Thank you for your attention

Questions and discussion



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