

WEBINAR

Flat glass companies going into 2023: to invest or save?

Tuesday 22 November 2022

Oaklins

Agenda & Speakers



Moderator:
Valērija Lieģe
Oaklins Glass Processing & Finishing specialist

Oaklins introduction: M&A activity & key trends

Global glass industry indicators & available alternative energy solutions for float glass producers and processors

Bettina Heuter, Marketing Director, glasssglobal Group

Introduction to caleoglas: current market outlook & its influence on strategy

Ulrich Brahms, CEO, caleoglas

Insights on the North American glass market & leading indicators for 2023

Vidur Kapur, Associate Director, Oaklins TM Capital

Panel discussion & audience Q&A

Closing remarks

SPEAKERS:



BETTINA HEUTER
MARKETING DIRECTOR
GLASSGLOBAL GROUP



ULRICH BRAHMS
CEO
CALEOGLAS



VIDUR KAPUR
ASSOCIATE DIRECTOR
OAKLINS TM CAPITAL

The Oaklins proposition

A global team working seamlessly across borders

OUR SERVICES

M&A sell-side

M&A buy-side

Growth equity & ECM

Debt advisory

Corporate finance services

OUR STRENGTH

850 professionals

45 countries

70 offices

15 vertical markets with
deep industry expertise

OUR RESULTS

500+ live mandates

More than 6,500 deals closed

Over 50% cross-border
transactions

Global expertise & local commitment

 NCH Capital Inc. has sold  to  M&A SELL-SIDE Construction & Engineering Services/Private Equity	  has sold  to  M&A SELL-SIDE Construction & Engineering Services	  a portfolio company of  has been sold to  M&A SELL-SIDE Construction & Engineering Services/Private Equity	  has sold  to  M&A SELL-SIDE Construction & Engineering Services
  has been acquired by  M&A SELL-SIDE Construction & Engineering Services	  have been acquired by  M&A SELL-SIDE Construction & Engineering Services/Private Equity	  has sold  to  M&A SELL-SIDE Construction & Engineering Services	  has been acquired by   M&A SELL-SIDE Construction & Engineering Services/Private Equity

EUROPE AND MIDDLE EAST (36 OFFICES)

Austria
Belgium
Bulgaria
Croatia
Czech Republic
Denmark
Estonia
Finland
France
Germany

Ireland
Israel
Italy
Latvia
Lithuania
Netherlands
Norway
Poland
Portugal
Romania

Saudi Arabia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
United Kingdom

AMERICAS (18)

Argentina
Brazil
Canada
Chile
Colombia
Mexico
Peru
United States

ASIA PACIFIC (7)

Australia
China
India
Singapore
Thailand

AFRICA (2)

Morocco
South Africa

Oaklins' expertise in glass reaches beyond deals

Regular sector reports to C-level executives, owners & business development contacts

Databases of key players & for sharing deal experience

[illegible][illegible]

Online events & trade fairs to share insights and make contacts

glasstec
INTERNATIONAL TRADE FAIR FOR GLASS
PRODUCTION • PROCESSING • PRODUCTS

Oaklins

WEBINAR – 16 June 2022 at 16:00 CEST

**How green is my company
and how much will this
impact my valuation?**

GLASS PROCESSING AND FINISHING WEBINAR

**Flat glass companies going
into 2023: to invest or save?**

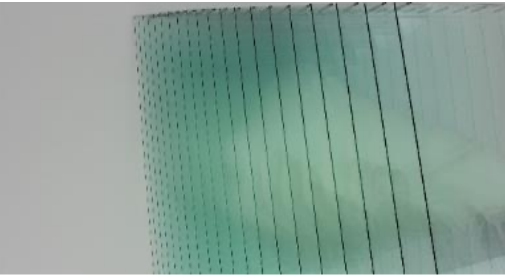
DATE: TUESDAY 22 NOVEMBER 2022 | TIME: 16:00 CET

Key trends in the glass processing & finishing industry



NEW CONSTRUCTION & RENOVATION

- Novel architectural trends like increased natural lighting in buildings and large windows will result in additional demand for glass with value-added properties such as smart glass and switchable glass
- In periods of uncertainty regarding new construction, renovation projects are often supported by public funds and drive the demand, especially for insulated glass



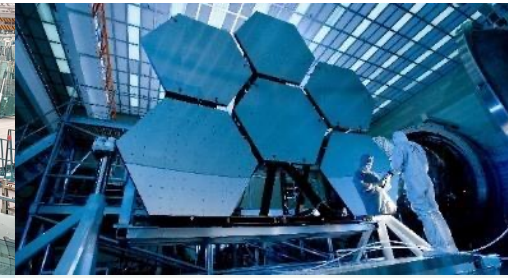
ENERGY EFFICIENCY

- Initiatives taken by regulatory bodies across the globe to reduce carbon footprint are driving the demand for energy-efficient glass, including such products as low emissivity (low-e) energy-efficient windows
- Controlling energy costs has become an increasingly major concern among building operators, leading to heightened interest in solar control glass



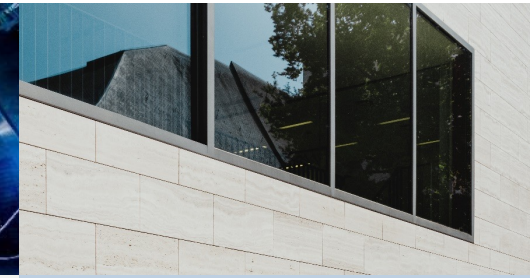
INCREASED AUTOMATION

- Automation has been highlighted as one of the most recent trends in the glass sector
- Manufacturers strive to increase productivity and cost transparency, as well as reduce operating costs
- The IoT concept will bring efficiencies to a new level in productivity, flexibility, quality and time-to-market



INNOVATION & VERSATILITY

- The use of value added coatings and other glass processing methods will transform the industry and increase the versatility of glass applications
- Increasing use of advanced coatings is leading to the emergence of high value-added and high-growth sub-sectors



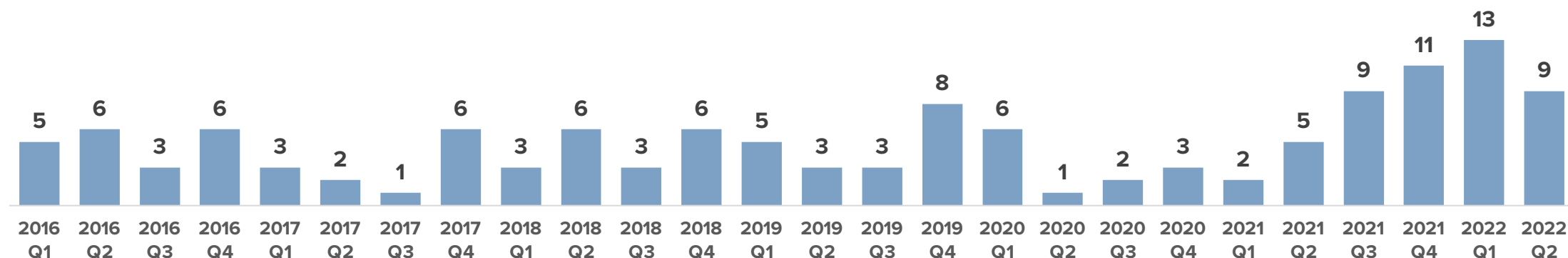
SUPPLY CHAIN MANAGEMENT

- Concerns regarding raw material and energy availability increases the probability of supply-chain bottlenecks
- Uncertainty about resources necessary for glass production pushes companies to more actively engage in supply chain management and price in the risks

M&A deals driven by PE and large strategic players

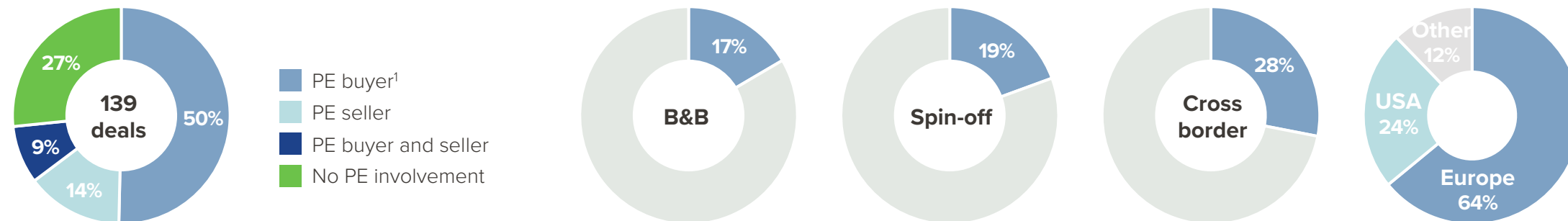
NUMBER OF M&A DEALS IN FLAT GLASS INDUSTRY

2016 – 2022


















DEAL SPLIT

2016 – 2022



Recent M&A transactions [1/2]

Date	Target	Buyer	Notes
11/2022	 	 	First investment of LA-based PE firm
10/2022	 	 	Investment of Canada-focused PE firm
10/2022	 	 	Exit of PE fund Soho Square Capital Partners. svt is backed by PE firm Ergon Capital
09/2022	 	Private investors	15 th divestment of Glassolutions unit in Europe by Saint-Gobain
08/2022	 	 	
07/2022	 	Undisclosed bidder	Fire sale of two glass plants to exit Russia
07/2022	 	Undisclosed bidder	
07/2022	 	   	PE consortium acquired an undisclosed stake from Nextstage, a PE firm.

Sources: Mergermarket, Pitchbook, Oaklins analysis

- In Europe, as part of their restructuring strategy, **Saint-Gobain has completed divestments of more than 20 Glassolutions processing sites** in 15 transactions in Sweden, Norway, Germany, the Netherlands, Belgium, Denmark, Estonia, Austria, Italy and France
- **Most divestments have been to PE-backed buyers**, including PE-backed vandaglas (three acquisitions in the Netherlands, Germany, and Austria) and caleoglas (several sites in Germany)
- **Important deals by strategics:** Cardinal Glass acquired AGC's North American architectural glass business and facility from Apogee Enterprises; Glas Trösch acquired Scheuten from VE Partners; and Tvitec acquired Spanish peer Cricursa

Recent M&A transactions [2/2]

Date	Target	Buyer	Notes
06/2022	 	   	Joint investment of two strategics to offer a new brand of IGU with integrated blinds
06/2022	 	 	Buy-and-build add-on by PE fund VE Partners
05/2022	  	  	14 th divestment of Glassolutions – two plants in Austria. 4 th acquisition by vandaglas
05/2022	 	 	Buy-and-build add-on by PE fund Livonia Partners
05/2022	 	 	PE fund acquired a minority stake
04/2022	 	 	Add-on investment by financial sponsor LongWater Opportunities
04/2022	 	 	13 th divestment of Glassolutions. Buy-and-build add-on by family fund DIK
04/2022	 	 	KPS Capital Partners, a PE, firm acquired from CRH, a strategic player

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Webinar: Flat glass companies going into 2023: to invest or save?

Bettina Heuter

22.November 2022

glasssglobal Group / the global glass competence



Business Segments

glasssglobal Community

www.glasssglobal.com is the leading portal for the international glass industry. Visitors use the portal as expert marketing channel, browse the portal to get updated information, execute researches or successfully trade equipment or glass.
www.glasssglobal.com

glasssglobal Trading

The Trading platform is an international business area for all companies active in purchase and sale, covering all technologies. The key segments are dedicated to glass production and processing equipment and float resp. container glass trade.
www.glasssglobal.com/trading

glasssglobal plants

Access to data from glass producers worldwide – display factories by furnace details, capacities, glass types, year of construction, IS-machines, etc. Glass market and product statistics.
plants.glasssglobal.com

glasssglobal Consulting

Our team of glass production and market experts prepares general and customized glass market studies, being leader in that topic, worldwide. Moreover, our team prepares marketing concepts, conducts price and competitor analyses, SWOT analyses and evaluation of investments, and develops sales strategies and bankable business plans e.g. for greenfield glass production plants.
www.glasssglobal.com/consulting

glasssglobal IT-Services

Professional realization of all elements in websites from presentations to calculations, from design to CRM. Our glass expert team supports industry-related design, keyword programming, search engine optimization and target oriented customer approach. www.ogis.de

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glassglobal - the global glass competence

GLASSGLOBAL DATABASE
Our database with actual 14,771 glass related companies covering glass manufacturing, processing, trading, consulting and associations.

GLASSGLOBAL TECHNOLOGY
Glass Technology is a special section at glassglobal.com to provide a thorough to well-regarded and renowned glass equipment and service suppliers.

WORLDWIDE PROJECTS
Get quick access to information about projects researched by us or made known to our team or released for publication at glassglobal.com.

GLASSGLOBAL PLANTS
glassglobal Plants is your gateway to the international glass producing industry. We have collected data from glass producers worldwide.

Updated worldwide glass market study 2022 available now for flat, container glass and tableware

We have updated our international studies on flat glass, container glass and tableware for 2022. This unique software provides a global overview about glass producers and technical details. Easy to use and clear tables summarize information and data about glass makers such as: Glass types, flat glass, container glass, tableware, production capacities in regions and countries, number of furnaces, furnace types, year of construction, glass types and sub-types, products, project information, special news and downloads. Further databases supplying demographic data and import and export data complete the market survey. Based on these data, prepare individual country profiles with information about local production capacities, local market sizes and expected demand in the future. Request your offer via [plants.glassglobal.com](#)

Updated Hollow glass study 2022 [Request more information](#)

Updated Float glass study 2022 [Request more information](#)

Further glass studies and reports 2022 [Request more information](#)

PUBLICATIONS

News [more](#)

NGA SUPPORTS RECYCLING EFFORTS ON AMERICA RECYCLES DAY AND BEYOND
Organized by the Environmental Protection Agency, America Recycles Day, held November 15, recognizes the importance and impact of recycling, which has added jobs and helped to protect our environment. [more](#)

Projects [more](#)

GLASS MAKER TO INVEST 60 MILLION EURO IN SOUTH AMERICAN GLASS MANUFACTURING EXPANSION
The company plans to expand its facility in Brazil. [more](#)

CONTAINER GLASS GROUP CONFIRMS GLASS PACKAGING FACTORY IN SOUTH AMERICA
The 2-furnace factory to be announced is designed to produce more than 300 thousand tons of glass per year, operating with two ovens - this corresponds to approx. 550 tons per day. [more](#)

PREMIUM

THE GLASSGLOBAL DIRECTORY

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Container Glass Coating

Welcome to glassglobal Plants

glassglobal Plants is your gateway to the international glass producing industry. We have collected data from glass producers worldwide including production capacities, the number of furnaces, furnace types, products, furnace suppliers and years of construction. Moreover, we have compiled financials from global players, production data, demographic data for countries as well as import and export data, and we have elaborated a forecast about future glass consumption in all global regions.

What's in it for you?

glassglobal Plants provides you with the access to these data. Find potential customers according to your personal selection within a minute, find companies to approach, display them on a map and contact them directly. Ask for your free guided tour using the red button in the login section and enjoy the ease of use of glassglobal Plants.

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Presentation (Content)

Presentation (Functions)

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Facts and Figures

Number of Companies and Groups	1.141
Locations	1.149
Number of Furnaces	2.194
Number of Countries	91
Total Capacity: Tons per day	569.395 tpd
Total Capacity: Tons per year	207.829.124 tpa

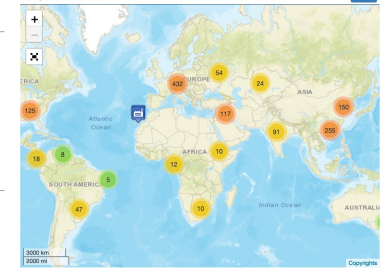
Glass Types

Glasstype	Capacity tpd	Capacity tpa	Furnaces
Flat	289.572	105.693.674	578
Container	258.350	94.297.750	1.195
Tableware	21.473	7.837.700	421

Testimonials from our Customers

Direct software to evaluate potential customers That
r.Olschewski, obiba AG Delete

Companies worldwide



- world's only platform as online market study
- glass factory details with capacities, machine details maps, and contacts
- extensive options to set up own market evaluations and statistics

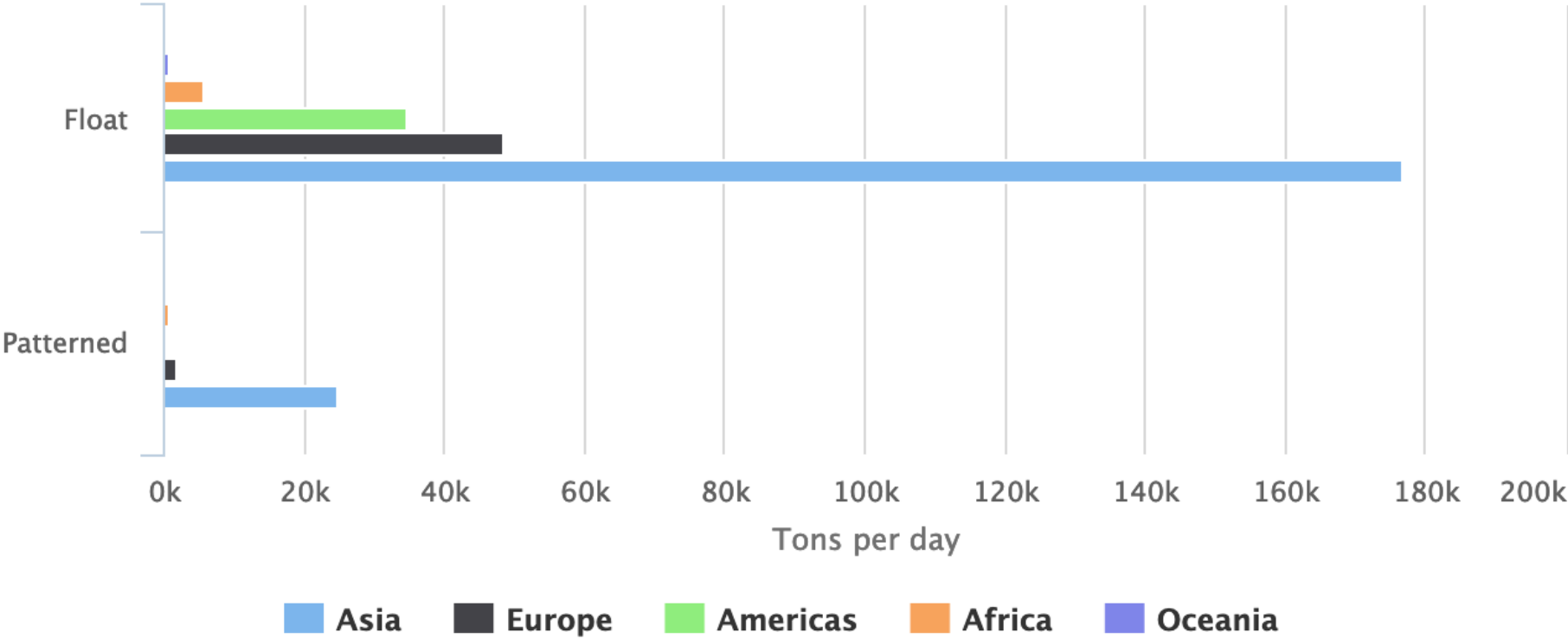
Flat Glass Production Capacity World Overview

- Over 580 flat glass furnaces (float and patterned)
- More than 320 production locations
- More than 107 million tons annual production capacity

Companies worldwide

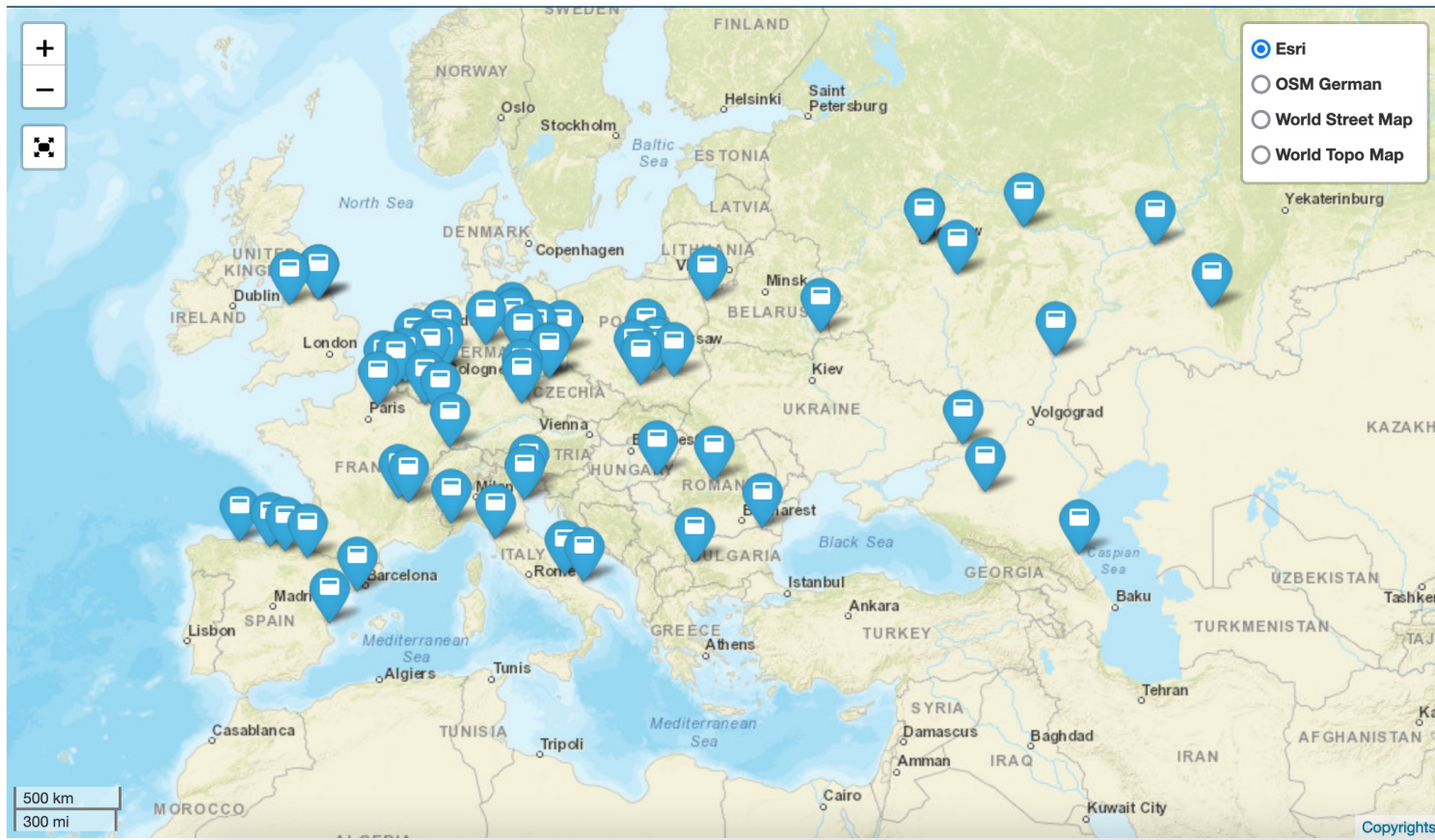


Flat Glass Production Capacity Global Share (2022) in TPD

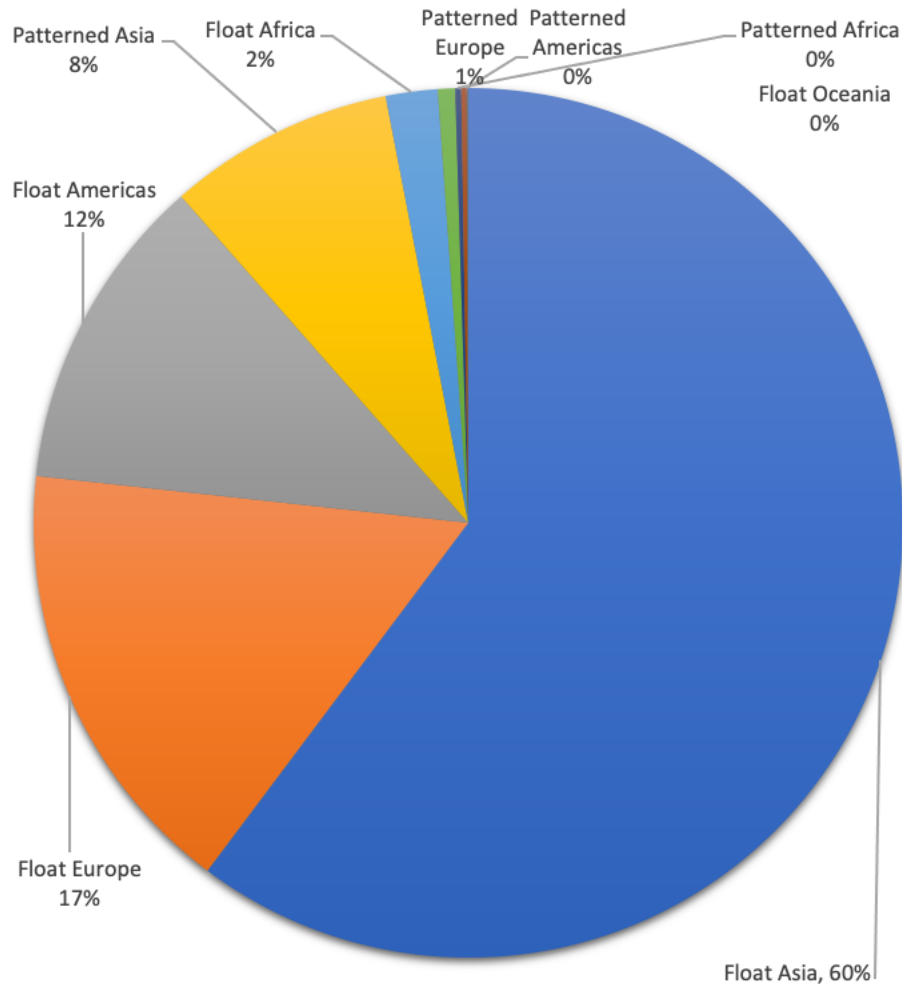


Float Glass Production Capacity European Overview

- **Approx. 80 float glass furnaces in over 60 production locations**
- **More than 18 million tons annual production capacity**



Flat Glass Production Capacity Global Share (2022) in %



Main glass types:

- Float Glass
- Patterned Glass (solar)

Possible breakdown:

By processing:

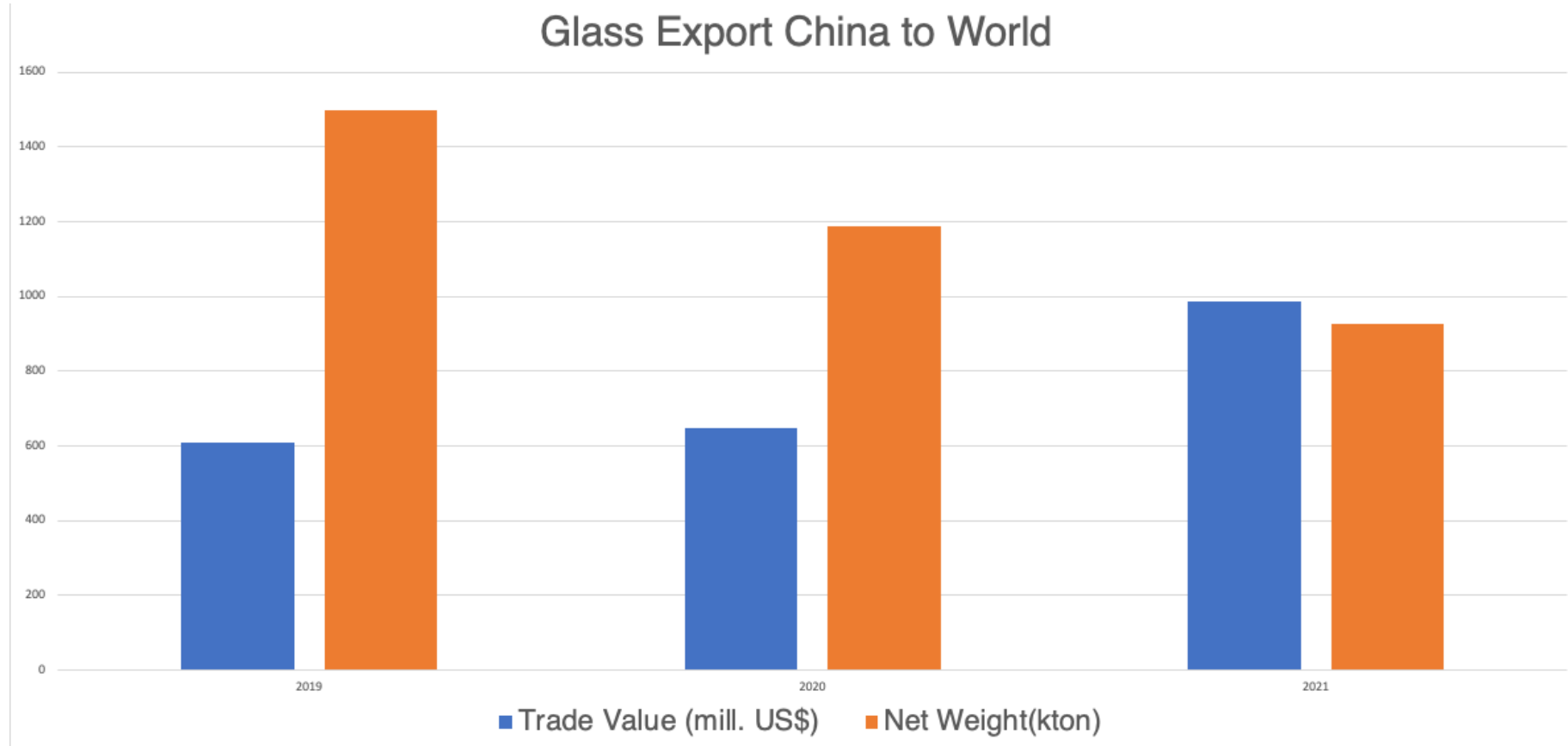
- Laminated Glass
- Tempered Glass
- Ceramic Glass
- Bent Glass

By application:

- Interior Building and Construction
- Exterior Building and Construction
- Marine and
- Transport (Automotive, Rail, etc.)

Main Exporter: China

Development of Float Glass Export Prices

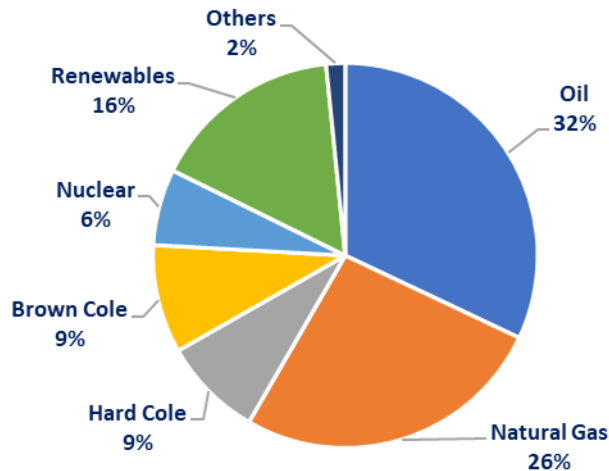


- Issues to secure the supply chain for energies, raw materials or equipment
- Green / Carbon Neutral Production = Higher requirements to production processes request change of energy carrier: Hydrogen will be used for heating and as a reducing agent and will hold a share of 9% of industrial heating energy demand by the end of 2050
- Air filtration systems to reduce pollution (CO2, Nox, Sox)
- Water recirculation systems
- Reduction of consumables such as oils, paper, packaging material
- Obstacles by politics or population
- Obstacles to recruit qualified staff
- Increase of overall cost for manpower
- Anti Dumping Taxes

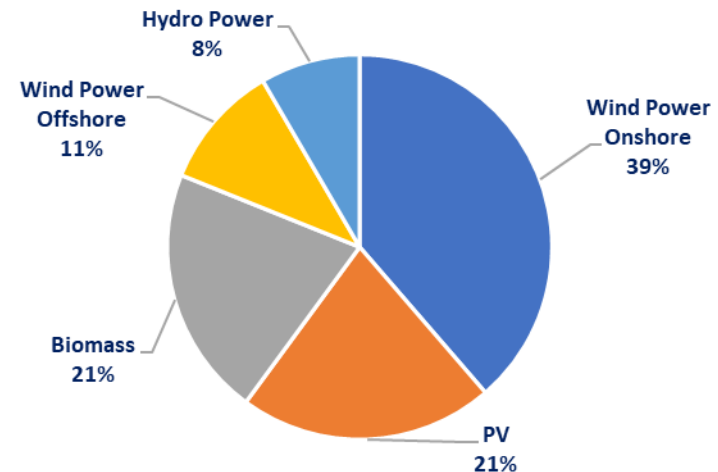
War in Ukraine: Economic impact on the energy supply in the EU

Using Germany as an example.

Primary energy consumption Germany 2021



Renewable energies share Germany 2021



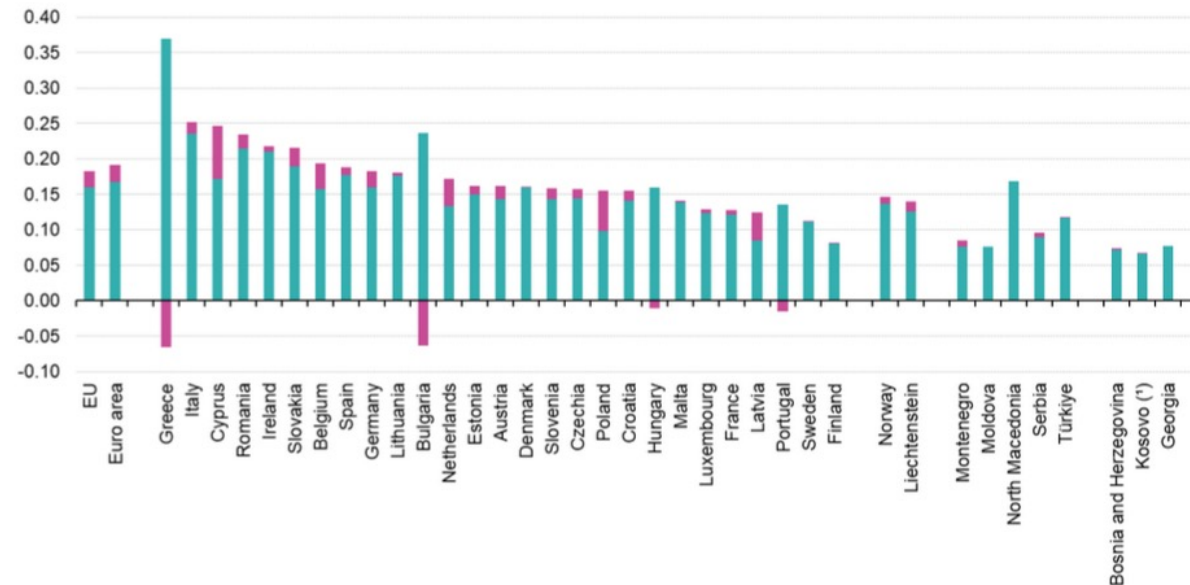
Total PV share of
primary energy
= 3.4%

Source: Arbeitsgemeinschaft Energiebilanzen, BDEW

War in Ukraine: Development of electricity prices for non-household consumers in EU

Highest in Greece (€0.3042 per kWh) and Italy (€0.2525 per kWh).
Lowest in Finland (€0.0808 per kWh) and Sweden (€0.1117 per kWh).
EU average price in the first semester of 2022 was €0.1833 per kWh.
Biggest increases in Greece (159.1 %) and Romania (136.6 %), followed by Denmark (101.9 %).

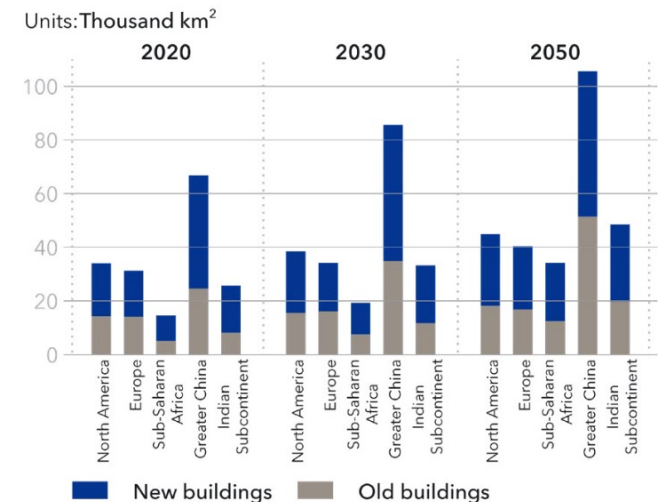
Electricity prices for non-household consumers, first half 2022
(€ per kWh)



View on Construction Industry

- Trends in total floor area of buildings- greatest growth in Greater China !
- In higher-income regions, where existing build quality is higher and population growth is slower, building stock renewal will be slower, resulting in a higher average age of buildings.
- The age distribution of buildings has implications regarding the ease and cost of adoption of new and more-efficient technologies and insulation. In higher-income parts of the world, where the building stock is older, governments should provide stronger incentives for energy efficiency as part of their emissions-reduction policies.

Floor area of old and new buildings in selected regions

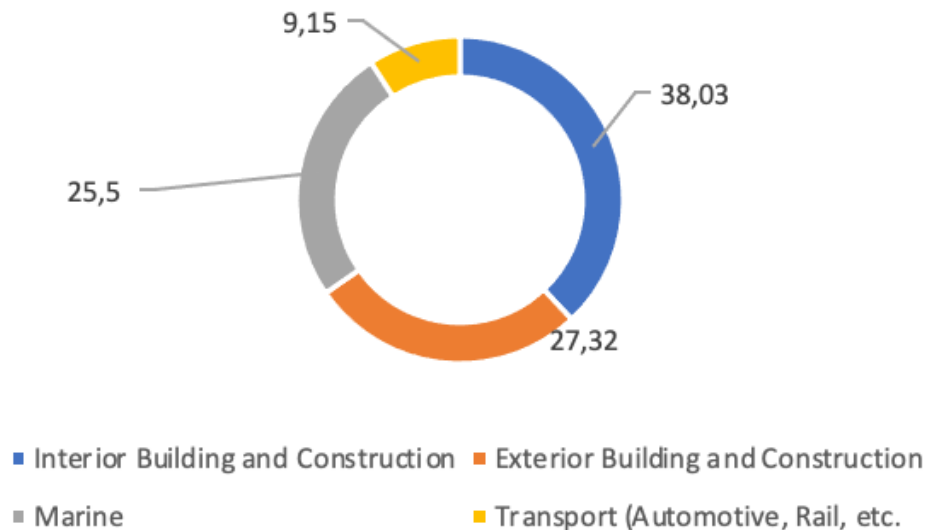


Picture: Courtesy of DNV Energy Transition Outlook

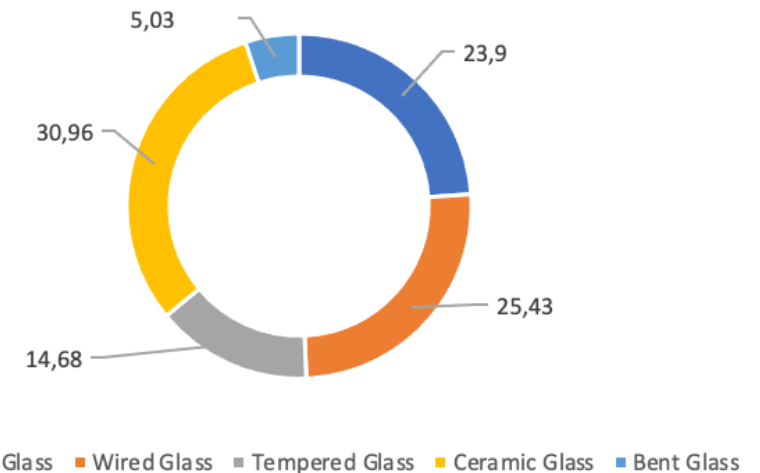
- Share of commercial buildings is expected to grow in regions with GDP growth outpacing population growth.
Main Drivers: China and the Indian Subcontinent
- By 2050, Greater China's total floor area will be about 105,000 km², which is equal to the current (2020) floor area across all other regions of the world.
- Buildings in Greater China will continue to consume about one-sixth of energy use in buildings globally.

View on special glass: Fire Rated Glass

Market Share by Application 2021



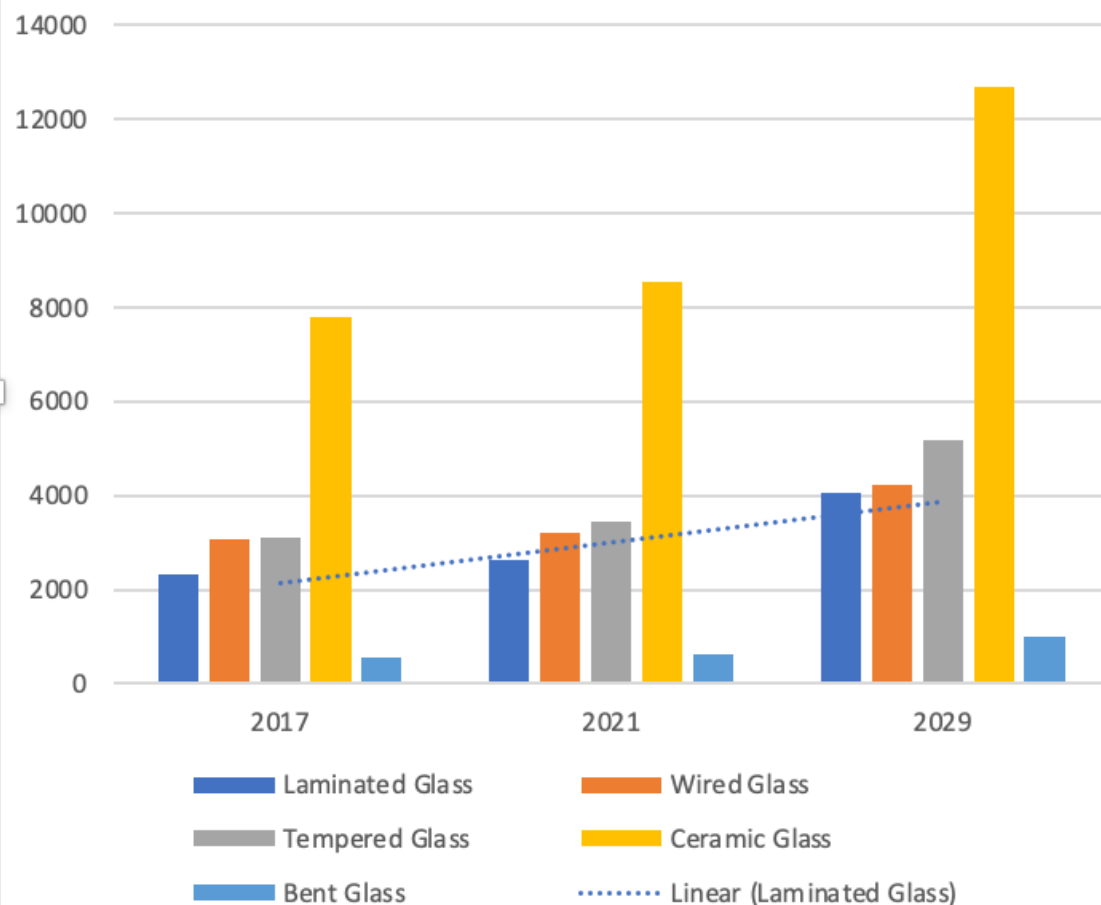
Market Share by Glass Type 2021



Main downstream application areas for Fire Rated Glass :
Interior Building and Construction
Exterior Building and Construction
Marine and Transport (Automotive, Rail, etc.)

Fire rated glass market size in (k Sqm) and growth until 2029

Table Global Fire Rated Glass Sales (K Sqm) and CAGR Comparison for Laminated Glass



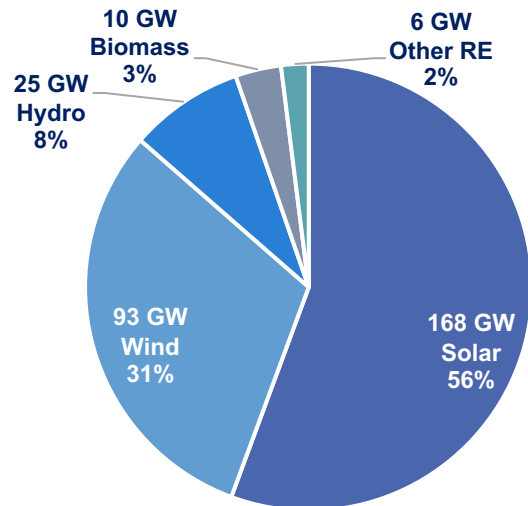
CAGR by glass types

Laminated glass 5,59%
Wired glass 3,55%
Tempered glass 5,3%
Ceramic glass 5,05%
Bent glass 5,61%
Overall average 4,95%

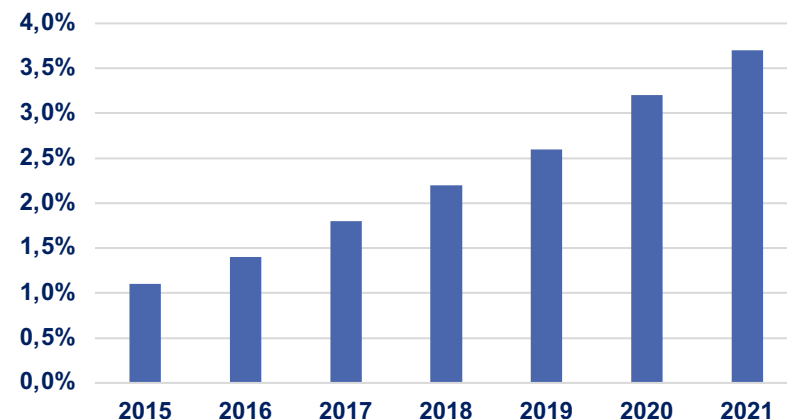
Installed PV capacities in 2021

In 2021, 168 GW of solar capacity were grid-connected globally, a 21% growth over the 139 GW added in 2020, establishing another global annual installation record. This brought the total operating solar fleet to 940 GW by the end of 2021.

Out of the over 300 GW of new global renewable power generating capacity, solar alone installed more capacity than all other renewables combined, with a share of 56%. At the same time, however, solar still meets only a small share of less than 4% of the global electricity demand, while over 70% is provided by non-renewable sources.



Solar as a Share of global Power

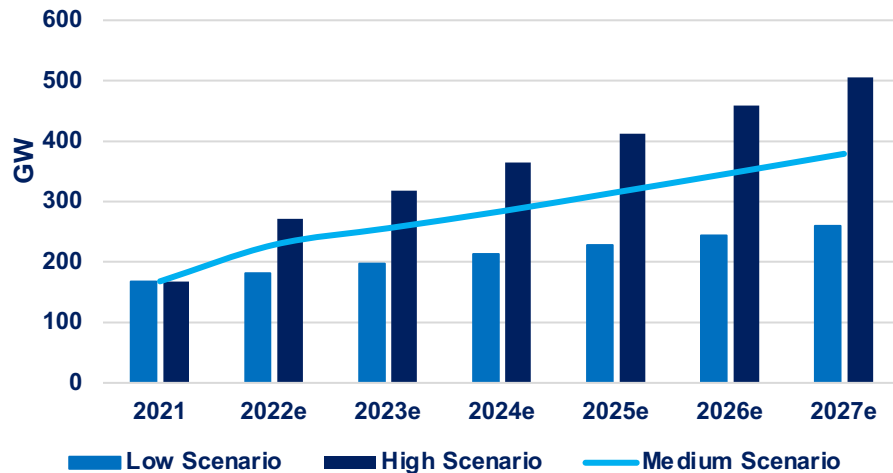


Source: Solar Power Europe

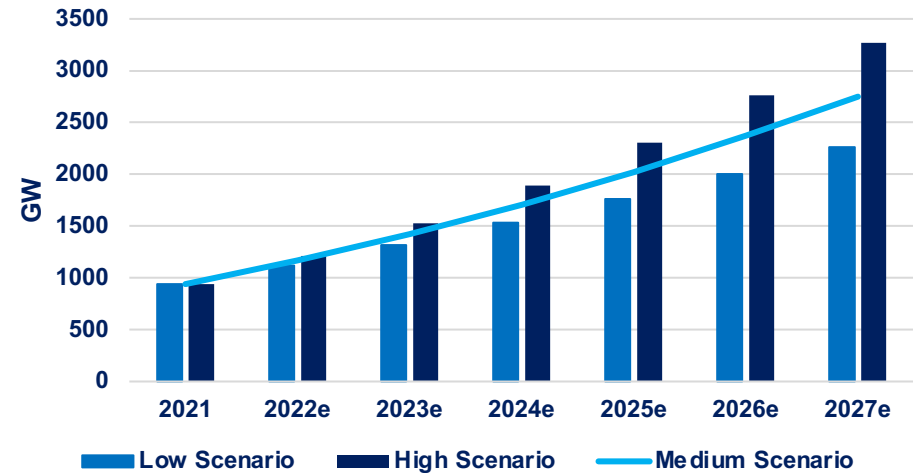
PV installations and forecast until 2027

The forecast consists of low, medium and high scenarios. The medium scenario anticipates the most likely development given the current state of play of the market.

Annual Global Solar Market Scenarios



Total Global Solar Market Scenarios



Source: Solar Power Europe

EU solar glass consumption forecast 2025

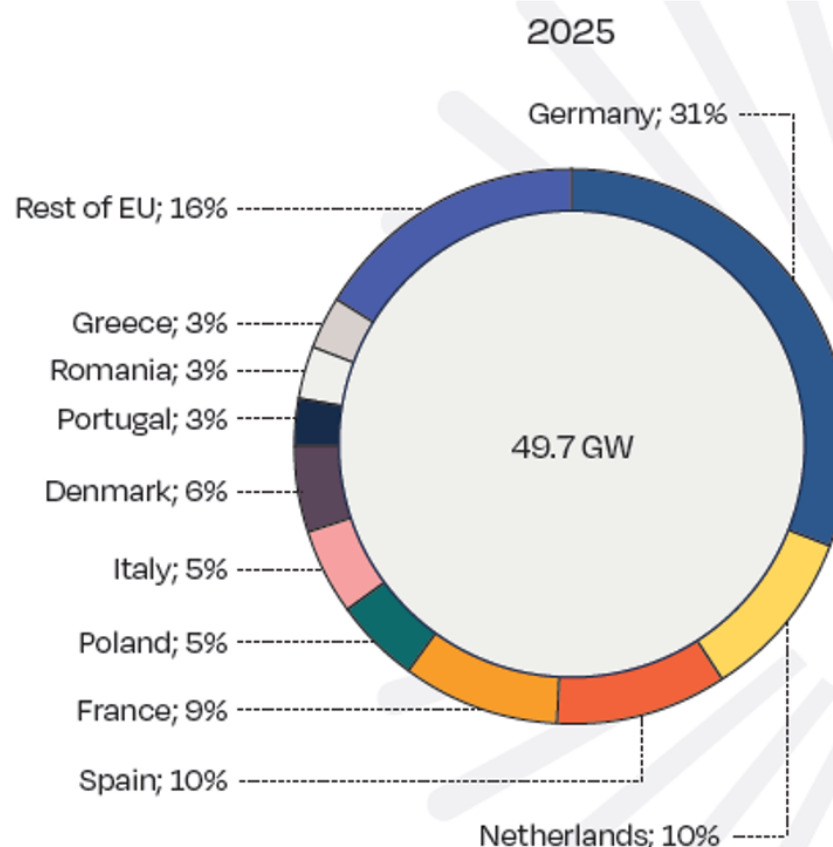
Calculation of needed solar glass in 2025:

49.7 GW in the EU correspond to almost 2 million tons of solar glass (approx. 5,450 tpd).

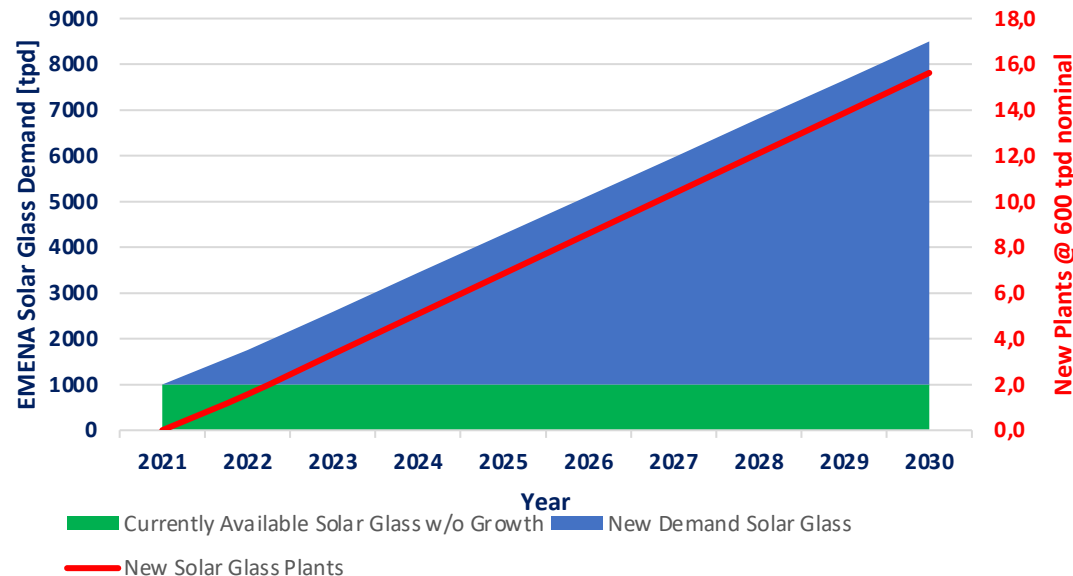
Thereof:

Germany	620,000 tons
Netherlands	200,000 tons
Spain	200,000 tons
France	180,000 tons
Poland	100,000 tons
Italy	100,000 tons
Denmark	120,000 tons
Portugal	60,000 tons
Romania	60,000 tons
Greece	60,000 tons
Rest of EU	320,000 tons

Source: Solar Power Europe



- To fulfil the 2030 targets of 45% renewable energies, the EU market requires 78 GW of new PV installations per year in average.
- The necessary annual solar glass for this quantity amounts to approx. 3.1 million tons or approx. 8,500 tpd.
- Based on this demand, approx. 15 rolled solar glass production plants of your considered size are necessary to fulfil the market needs.



There is no way around. Global warming is forcing mankind to emit less CO₂ in order to reduce the rise in temperatures. An important aspect here is the production of electricity from coal, natural gas and oil.

These need to be considered in the construction of buildings

Energies consumed shall be replaced by photovoltaic (PV), wind turbines, hydro power, biomass, geothermal energy and others. PV will play a crucial role here in the coming years.

PV module manufacturers and cell manufacturers are going to develop new products for commercial and residential use and also BIPV. Solar glass producers are going to follow this trend and build up new plants.

It is impossible for future demand to be covered by Chinese suppliers, who currently have by far the most production capacity. Local production capacities will be built up.

This creates new industries, attractive jobs and added value in countries that want and need to manage their own energy consumption and supply in the future and move away from fossil fuels.

- Market Research, surveys, studies, reports etc.
- Glass technology
- Glass market & overview
- Glass producers – profiles & analysis
- Evaluation of market segments
- Visualization of glass markets
- Visualization of glass production sites
- Market analysis, outlook and trends evaluation for different kinds of glass (float, solar, patterned, hollow, technical, tableware)
- Plant investment analysis
- Evaluation of Ebit and key company figures
- SWOT analysis

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caleoglas

Glass processing & finishing

caleo: We are passionate about glass

Where the name caleo has its origin

- **Caleo** means “to burn”
- We have a **burning passion** for glass helping you realize your projects



Emerged from former glass solutions plants of the Saint-Gobain-Group



Being close to our customers

Technically, personally – and geographically

8

Locations

1878

Glass Specialist
since 1878

450

Glass Experts

Headquarters located in Potsdam (nearby Berlin)

With Saint-Gobain, we continue to have a strong industrial Partner

We are a **CLIMAPLUSSECURIT** partner, one of the largest European associations of glass processing companies.

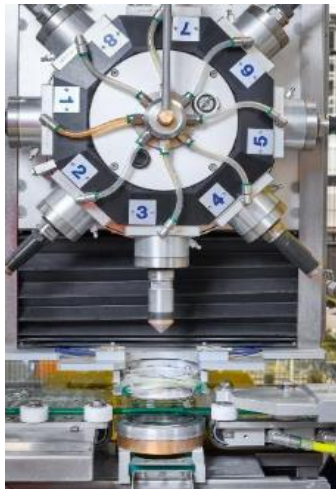
For us, the close partnership with Saint-Gobain means:

- guaranteed security of supply
- Made in Germany
- premium quality glass
- transparency with EPD (Environment Product Declaration) and certificates from renowned testing institutes.



Full-range glass processing & finishing

For the interior and exterior from individual pane to series



- Float, mirror, coated, pattern glass
- Toughened safety glass
- Laminated safety glass
- Insulating glass
- Fire-resistant glass
- Heat-soak
- Special products such as
 - walk-on glass *LITE-FLOOR*
 - Alarm glass
 - Lacquered glass
 - Screen printing
 - the electrically switchable glass *PRIVA-LITE*

Innovative PRIVA-LITE

Transparent or translucent: the electrically switchable PRIVA-LITE glass offers privacy with just one click



Transformation of caleoglas

From a large corporate group into a medium-sized structure



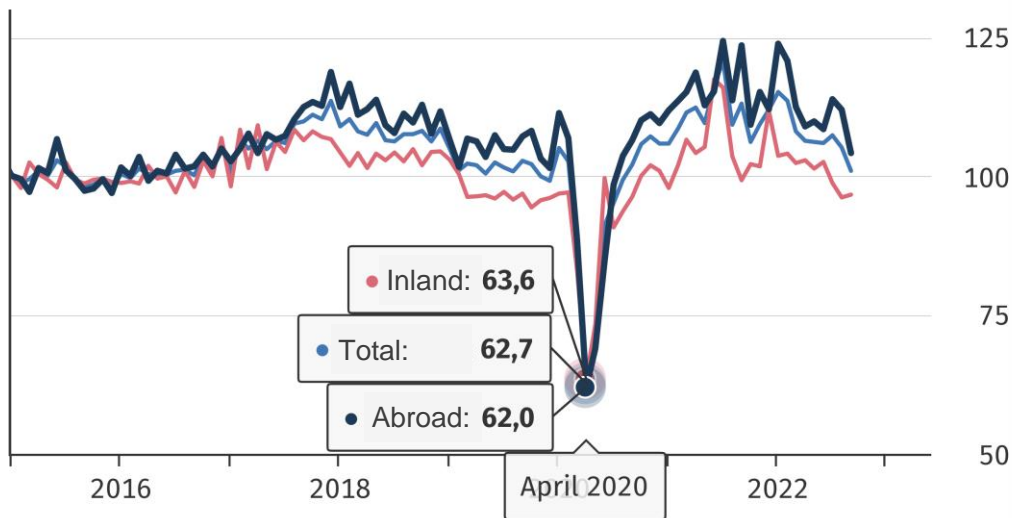
Covid and its economical influence in Germany

Despite economic consequences some industries have benefited



Order intake in the Manufacturing sector¹

related to 2015 = 100



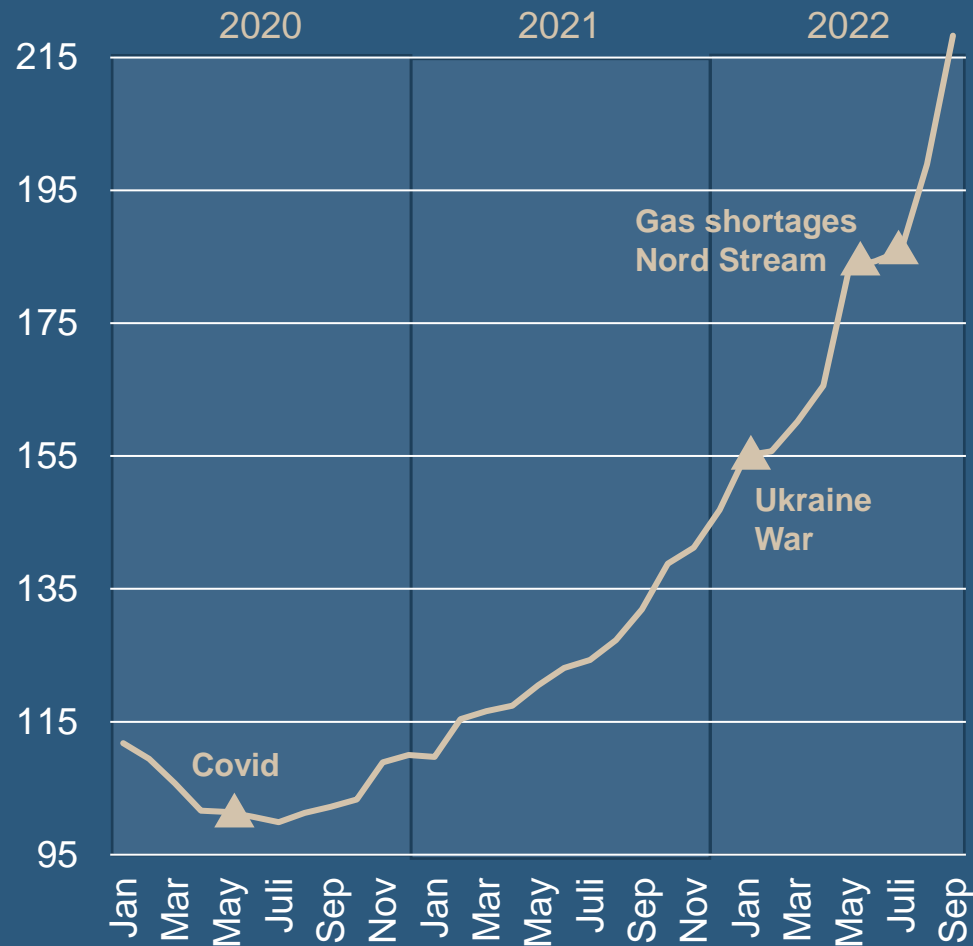
Consequences

- Significant drop during 1st lockdown
- Recovery during summer 2020
- Covid triggered supply-chain crises
 - Reduced availability of raw material, supply bottlenecks with increase in demand
- Price spiral in raw material starts



German Glass price index¹

Significant glass price increase since July 2020

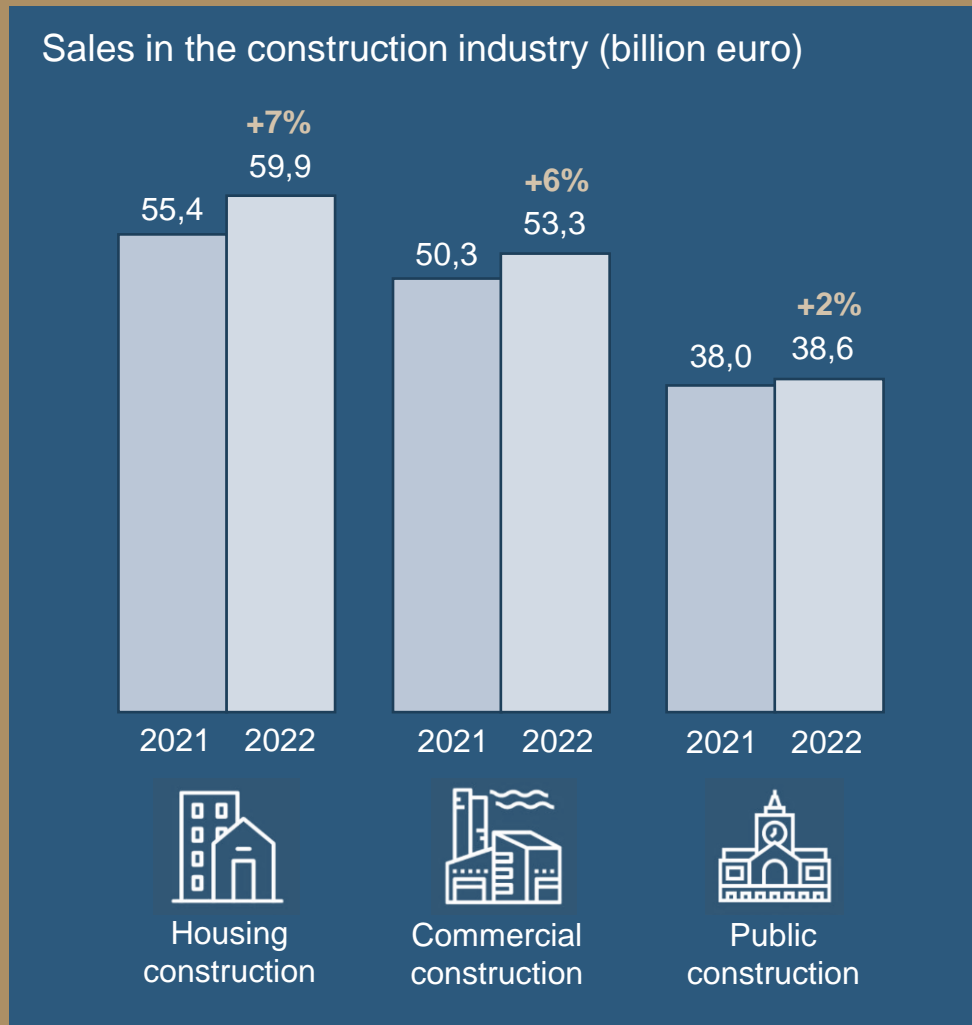


- Covid initially triggered the supply-chain crises
- Glassworks started to maintain their glass tubes
- Ukraine war forced a gas price increase
 - Nord Stream pipeline gas shortages accelerated gas and electricity price increase
- Effects in glass prices since 2020
 - Prices for float glass doubled (statistically)
 - Market prices for float glass tripled
- Suppliers are constantly forced to pass on price increases to customers
- Construction industry remains relatively stable

¹ Glass price index 2311 according to German Federal Statistical Office

Construction industry in Germany 2022

The development in the construction industry is (still) positive



Source: ZDB¹ - Association of the German Construction Industry

- Construction activity still appears favorable in 2022
- Due to increased construction costs, the real increase in sales is 1.5% (ZDB¹)
- Due to the energy crisis, demand in the construction industry is now declining
- Cancellations in the important housing sector now on the rise

Influences on the glass industry:

- The order books are still full, but the order intake is slightly decreasing
- Project business is particularly affected as there is no planning certainty



Conclusion for glass industry in 2023F

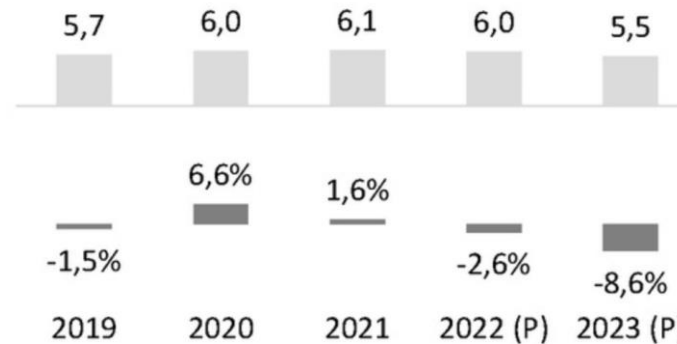
Due to uncertainty the forecasts for 2023 are very different

- Total sales volume for windows and doors slightly decreasing¹ (c.a. 1-2%)
- High energy costs and subsidy programs push the rate of refurbishment

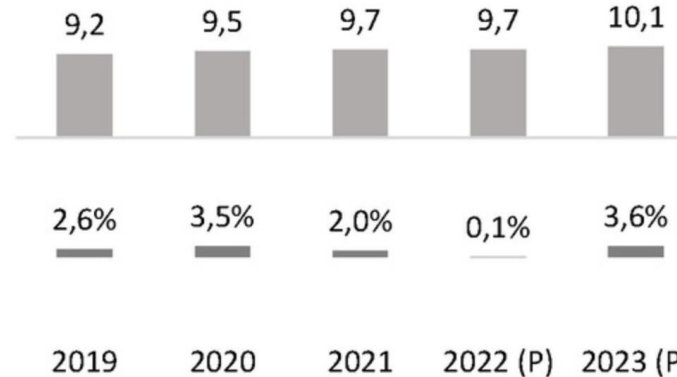
Caleoglas future strategy:

- We believe in the construction industry as an absolute future industry
- Organic growth with premium products and through competitive displacement
- Inorganic growth through acquisitions in Germany and near European countries
- Overcoming the shortage of skilled workers

Windows for new construction business¹
(Million units)



Windows for refurbishment business¹
(Million units)





Thank you for your attention

WEBINAR

Flat glass companies going into 2023: to invest or save?

Tuesday 22 November 2022

Oaklins



Topics on the agenda

Oaklins TM Capital introduction	I
Market Observations	II
Valuation Considerations	III
Summary Thoughts	IV

Oaklins TM Capital Introduction

Oaklins TM Capital introduction



Vidur Kapur

Associate Director, Oaklins TM Capital
(USA-based member firm)

- Over a decade of investment banking experience
- Co-leads TM Capital's glass practice
- Significant experience completing a broad range of glass fabrication / processing and building products transactions
- Co-authors TM Capital's Building Products Report
- BS in Economics with a concentration in Finance from The Wharton School of the University of Pennsylvania

Respected Thought Leader in the Building Products Category



[Click Here to Access the Report](#)

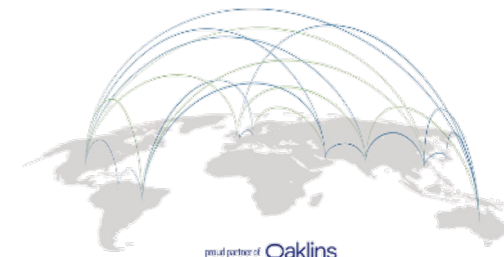
Published November 2022

We publish widely disseminated industry research on the attractive demand trends within the building products manufacturing and distribution sectors – on a monthly and annual basis

The U.S. residential and commercial markets are facing near-term headwinds in the form of supply shortages, interest rate increases and material slowdowns that are slowing the pace of construction and diminishing homebuyer purchasing power. Despite near-term challenges, longer-term demand fundamentals remain unchanged, as the largest homebuying cohort in U.S. history prepares to enter the residential housing market, and the inventory of commercial space is aligning with a shifting modern economy. Download our report to read our views of the many contributing factors to near-term challenges in the market, and why the longer-term outlook for the building products sector remains robust.

TM Capital – Founding Partner of Oaklins Network

- ✓ **TM Capital is a founding partner** of Oaklins, the world's leading global investment banking alliance
- ✓ **In the past five years** Oaklins partners have closed **1,500+** transactions valued over **\$75 billion**
- ✓ **Multinational resources** anchored by tenured teams in money centers around the world
- ✓ **Global sharing of expertise and information** through common databases, research and global conferences enables seamless deal execution across the organization
- ✓ **Relationships with industry leaders** throughout the world developed over more than two decades of collaboration

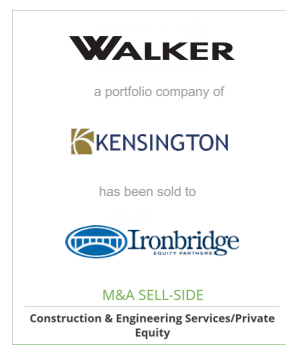


Oaklins TM Capital glass transaction experience

Oaklins TM Capital has completed several significant mandates in the glass space across North America; we bring the most comprehensive and detailed understanding of the investor universe, industry dynamics and valuation drivers

Experience Guiding Leading Glass Platforms to Remarkable Outcomes

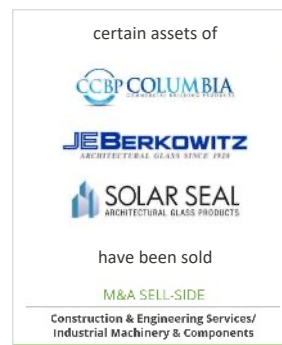
- Expertise in all categories within glass, including fabricators, glaziers and raw material suppliers / processors
- Understanding of the key drivers of growth and profitability as well as the impact of the economic cycle, labor / supply constraints, offshoring and scale
- “Speed dial” relationships with all the key strategic parties and those financial sponsors most attracted to the glass and building products markets
- Understanding of all macro trends that are driving growth of the glass market



Walker Glass is a value-added processor of raw materials, which are treated in-house through proprietary processes. The Company is a market leader in acid-etched glass substrates, premium quality mirrors and bird-friendly glazing solutions



Global Security Glazing and **Dlubak** are leading fabricators of complete, security glass solutions that meet stringent bullet, forced entry, blast and fire resistance requirements for a diverse range of applications



CCBP manufactures glass and aluminum storefront and entrance systems

J.E. Berkowitz was a fabricator of architectural glass products, including insulating, engineered, tempered and laminated glass, for a range of commercial buildings

Solar Seal is a custom fabricator of architectural glass products



NASG is a fabricator of a full portfolio of framed assemblies for transportation markets, including rail aftermarket and OEMs, armored vehicles, marine and other specialty markets



Antamex is a provider of custom high-performance unitized glass façade solutions and engineering design services for commercial, institutional, high-end residential and mixed-use projects



J.E. Berkowitz was a fabricator of architectural glass products, including insulating, engineered, tempered and laminated glass, for a range of commercial buildings

Market Observations

U.S. building products market – short-term challenges, sustained long-term growth

Near-Term Challenges



Interest & Mortgage Rates

Steady climb in interest rates has pushed 30-year fixed mortgage rates to 7%+ as of the end of October



Shift Towards Renting from Homebuying

Steep rise in rates have made homes less affordable, cooling near-term homebuyer demand and pushing individuals and families to rental markets



Material Pricing & Availability

Despite recent easing of input cost pressures, costs of key building materials remain significantly higher than 18 months ago



Labor Availability

Significant gap between supply and demand for labor, with construction wages having increased meaningfully

Long-Term Growth Drivers



Significant Shortage of Available / Affordable Housing

Single-family starts have not reached the pre-Great Recession peak level and current estimates pin U.S. housing supply at approximately six million units short of demand



Favorable Demographic Trends

Younger Millennials and Gen Z (collectively, individuals born between 1990 and 2020) are set to exceed the median homebuying age over the next two decades

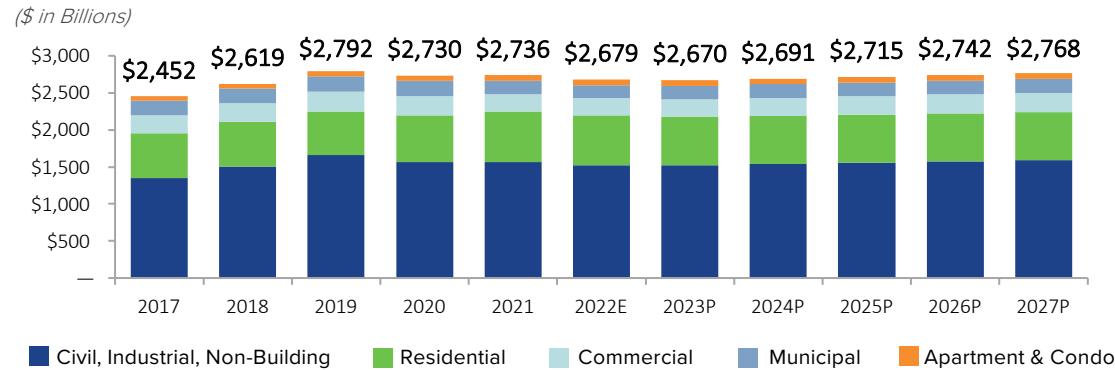


Economic Shift Driving Commercial Market

Shift toward the e-commerce channel, growing internet / technology usage and medical innovation has altered the aggregate demand profile for commercial spaces; property owners are in early stages of retrofitting, remodeling and repurposing commercial space to meet the emerging space requirements of the modern economy

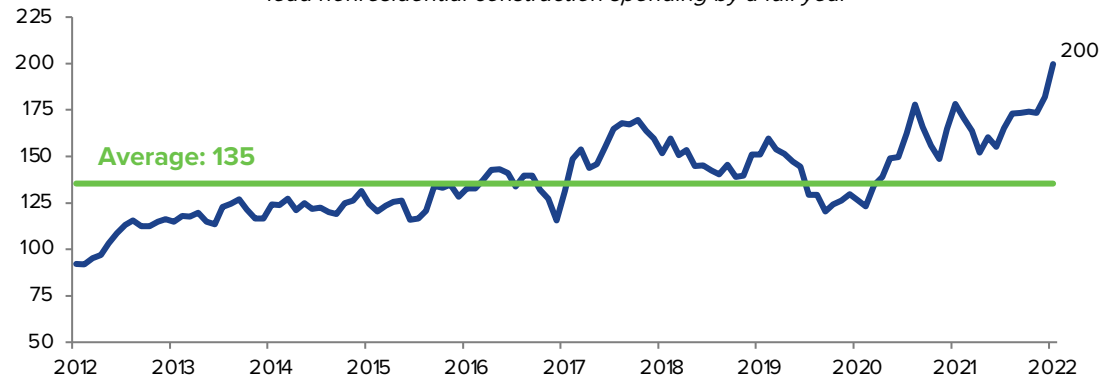
Positive (though cautious) U.S. commercial construction and renovation outlook

Healthy New Construction Activity Underpins Glass Demand ⁽¹⁾



Dodge Momentum Index (“DMI”) ⁽²⁾

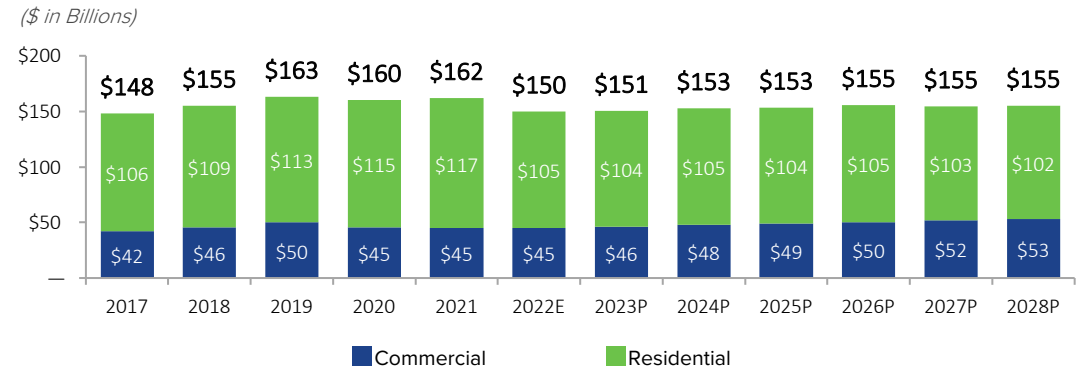
Measures the initial report of nonresidential building projects in planning – which have been shown to lead nonresidential construction spending by a full year



(1) IBIS World – Commercial Construction includes schools, hotels, hospitals, warehouses, offices and retail

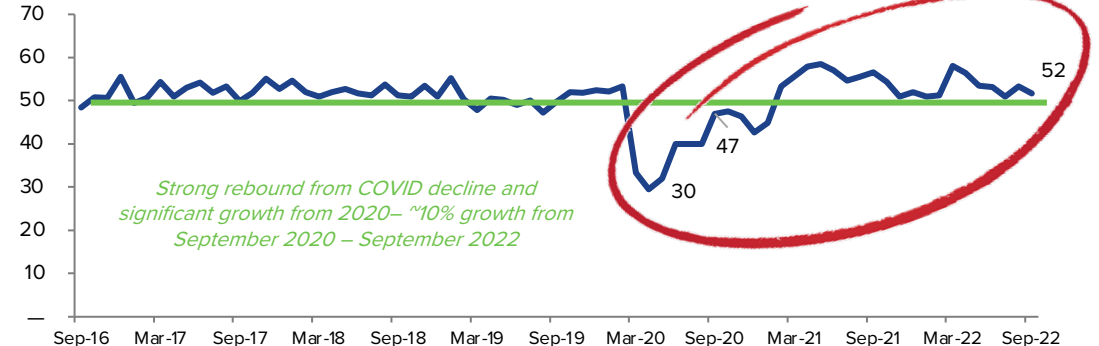
(2) Dodge Data & Analytics
(3) American Institute of Architects

Steady Remodeling Outlook Supports Glass Demand ⁽¹⁾



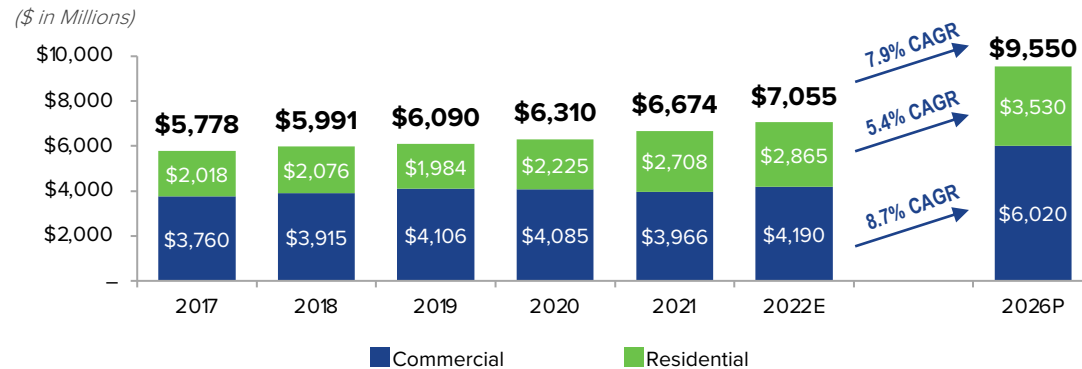
Architecture Billings Index (“ABI”) ⁽³⁾

Leading economic indicator for the commercial construction industry – a score of 50 and above indicates expected future improvement in levels of construction



Favorable tailwinds supporting long-term glass industry growth

U.S. Demand for Fabricated Flat Glass in Construction Applications ⁽¹⁾



Favorable Underlying Market Demand Drivers

Robust Demand For Commercial and Residential Remodeling & Construction

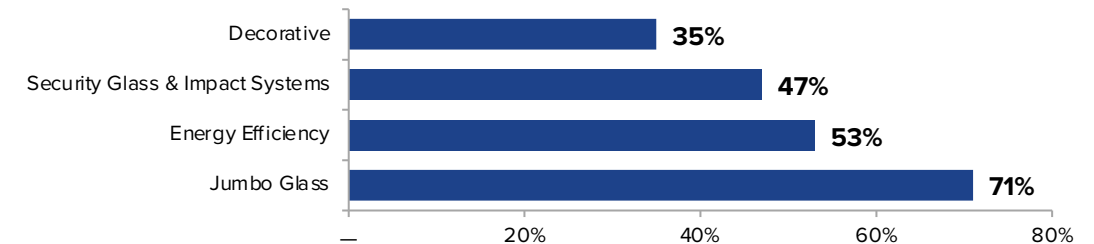
Glass-Heavy, Natural Light Forward Architectural Design Trends

Focus on Energy Efficiency, Sustainability, and Environmentally-Friendly Building Practices

Increasing Focus on Security / Safety as well as Decorative Applications

Industry Trends Impacting Glass Fabrication ⁽²⁾

Fabricators were asked which industry and design trends they've noticed rising in prevalence over the past year



“Hot Button” Topics Across the North American Glass Landscape

-  **Material Sourcing / Availability & Pricing**
-  **Labor Availability & Increase in Wages**
-  **Identifying Growth Areas & Differentiated Capabilities**
-  **Capital Investments including Automation**

Valuation Considerations

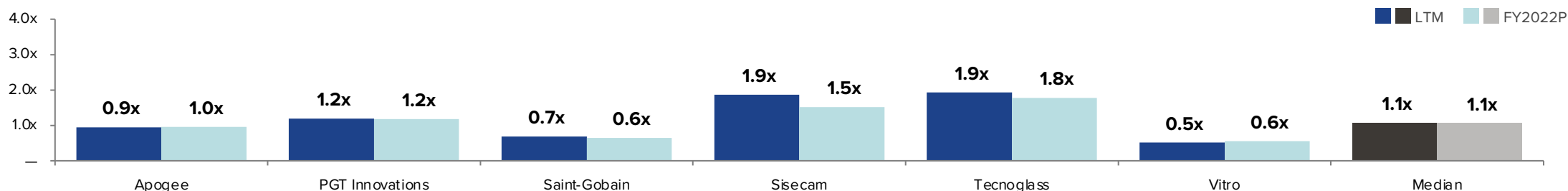
Analysis of guideline public traded companies

Revenue & EBTIDA multiples

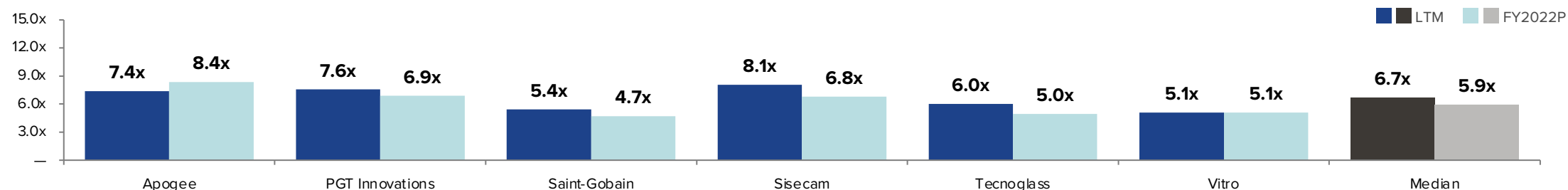
Representative Companies



TEV / Revenue Multiples



EV / EBITDA Multiples



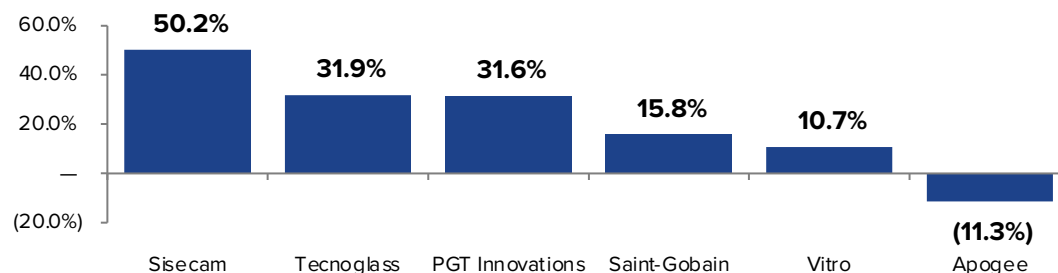
Analysis of guideline public traded companies

Benchmarking analysis

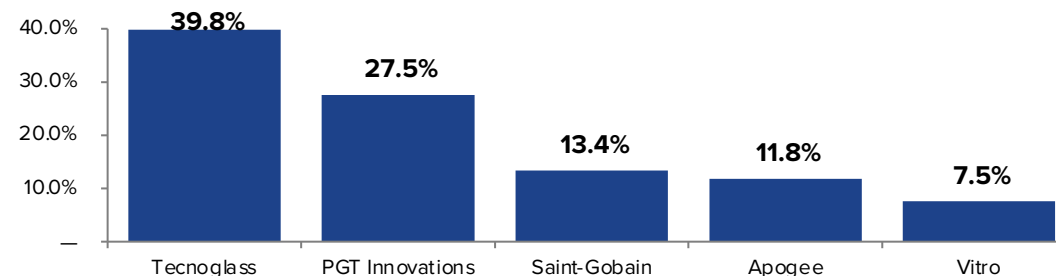
Representative Companies



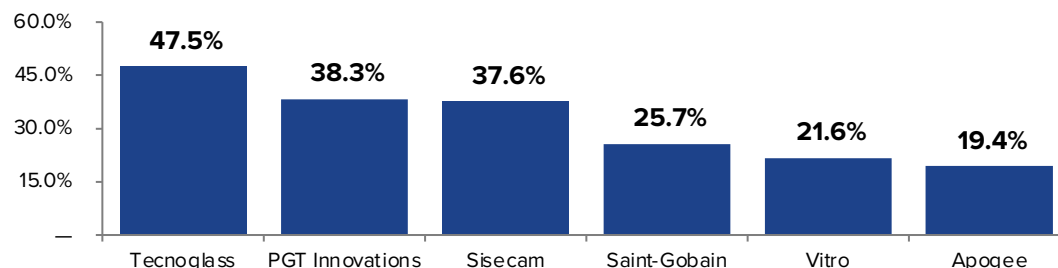
YoY Revenue Growth (2021)



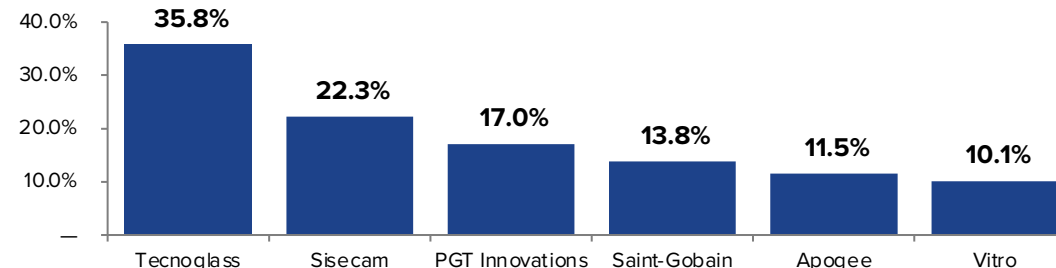
YoY Revenue Growth (2022P) ⁽¹⁾



Gross Margin (2022P)



EBITDA Margin (2022P)



Source: Capital IQ as of November 14, 2022

(1) Sisecam revenue growth was excluded as its acquisition of Refel S.p.A. significantly skews year-over-year growth

(2) Reflects LTM June 2022 gross margin

Summary Thoughts

Summary thoughts regarding the North American glass market



Macroeconomic Environment – While Uncertain in Near-Term – Remains Robust Medium & Longer-Term

- Despite short-term challenges (interest / mortgage rates, rental prices, material pricing / availability and labor availability), there are powerful tailwinds supporting market in longer-term (housing availability / shortage, demographic trends, shift in economic focus)



Favorable Tailwinds Supporting Glass Market

- Glass increasing proportion of overall building makeup – energy efficient, sustainable and environmentally-friendly
- Growth areas include security / safety, decorative applications and jumbo glass
- Automation investments represent a major focus area



Robust M&A Volume in 2021 & YTD 2022

- Flurry of deal volume in the glass and building products sectors driven by surging home prices, increasing building activity and waves of homeowner renovations
- Several major North American fabricators (i.e. Oldcastle BuildingEnvelope and Trulite) were recently acquired by private equity firms



Strategics & Private Equity Investors Recalibrating Theses

- Hyper focused on supply chains (specifically input pricing and lead times, both of which have begun to show signs of easing in recent weeks), interest rates, inflation and sustainability of pricing / growth
- Strategics seeking differentiated capabilities and geographic expansion



Expect Acceleration in M&A Activity Once There is More Certainty / Comfort Around Near-Term Market Challenges

- Once investors grow comfortable with the direction of variables including interest / mortgage rates, rental prices, material pricing / availability and labor availability, M&A activity in the sector should expand



Oaklins