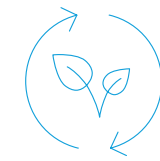




Your partner for
sustainable glass solutions

Your Dreams, Our Challenge

Towards net-zero carbon



How should carbon emissions be tackled in the construction and industrial sectors?

It is a well-known fact that buildings account for 37% of greenhouse gas emissions¹, which in turn means that drastically reducing carbon emissions from buildings is crucial for protecting the environment.

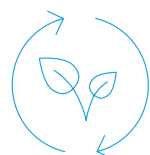
Under the Paris Agreement², the EU has pledged to achieve climate neutrality by 2050 and to reduce greenhouse gas emissions by at least 55% by 2030 in order to limit global warming to 1.5 °C.

The real estate sector needs to achieve both net-zero operational carbon by 2030 and net-zero embodied carbon by 2050. The 2030 carbon reduction targets for the production of building materials are also ambitious, although they vary somewhat depending on the specific sector.

1. European Commission Survey (2022); direct and indirect emissions

2. Consilium.Europa.eu – Paris Agreement

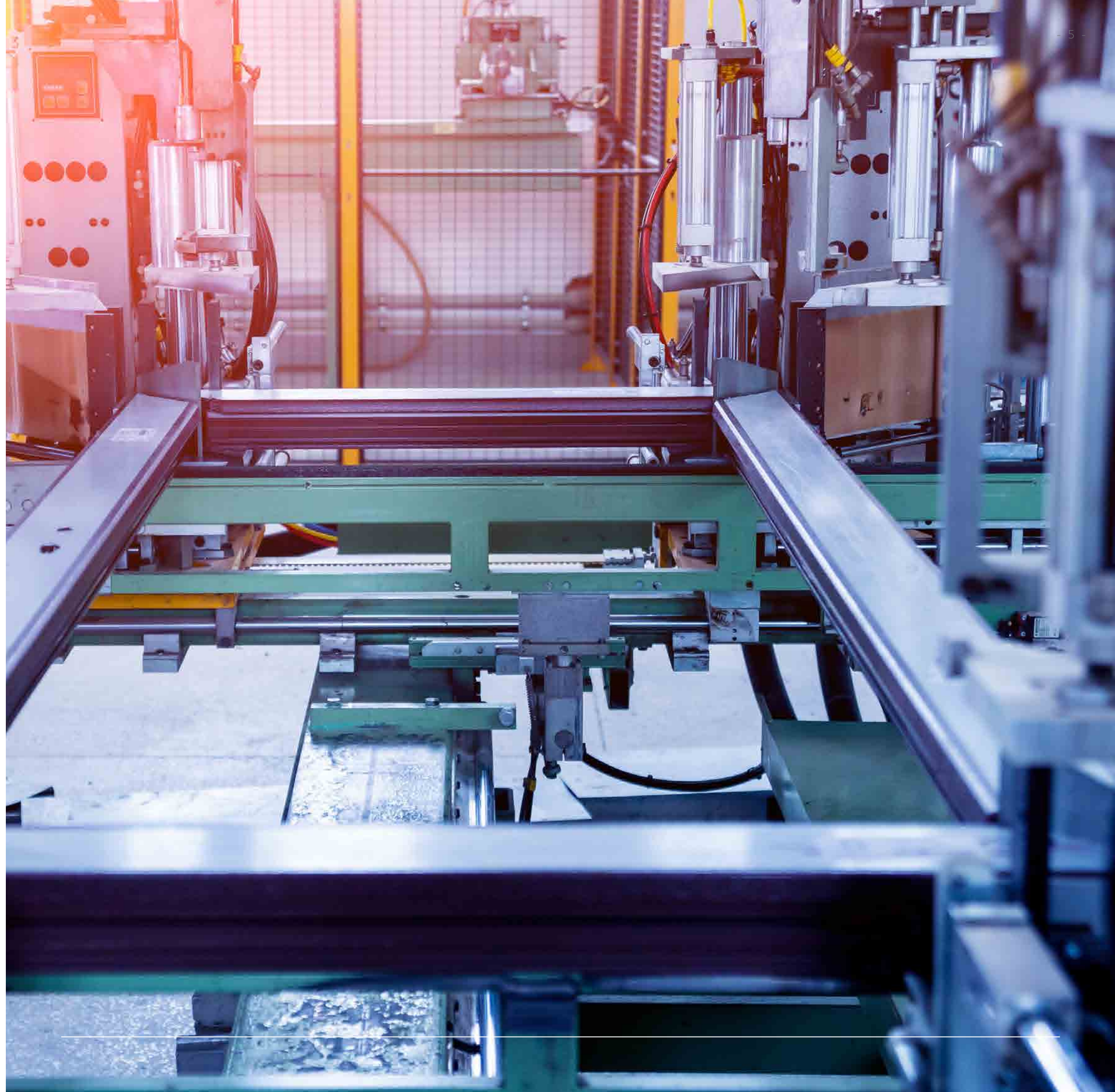
Corporate Sustainability Reporting Directive



Mandatory sustainability reporting continues to accelerate globally, increasing the pressure on investors and suppliers. Starting in 2024, some 50,000 companies in Europe will gradually be required to comply with the Corporate Sustainability Reporting Directive (CSRD)³, an EU-wide initiative designed to increase companies' transparency by requiring them to disclose information about their commitment to sustainability in the pursuit of their business activities.

The CSRD will oblige real estate companies and industry to report on a range of ESG issues, including energy efficiency, carbon emissions, social responsibility, diversity and inclusion. They will also be required to include measurements for Scope 1, Scope 2 and, where relevant, Scope 3 greenhouse gas emissions.

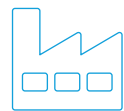
3. Corporate Sustainability Reporting Directive (2022/2464/EU)



What is embodied carbon?

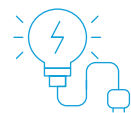
Embodied carbon refers to greenhouse gas emissions arising from the manufacture, transport, installation, maintenance and disposal of building materials.

Embodied carbon in construction materials



Scope 1

→ direct emissions from the manufacture of materials.



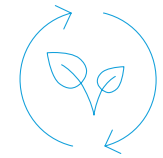
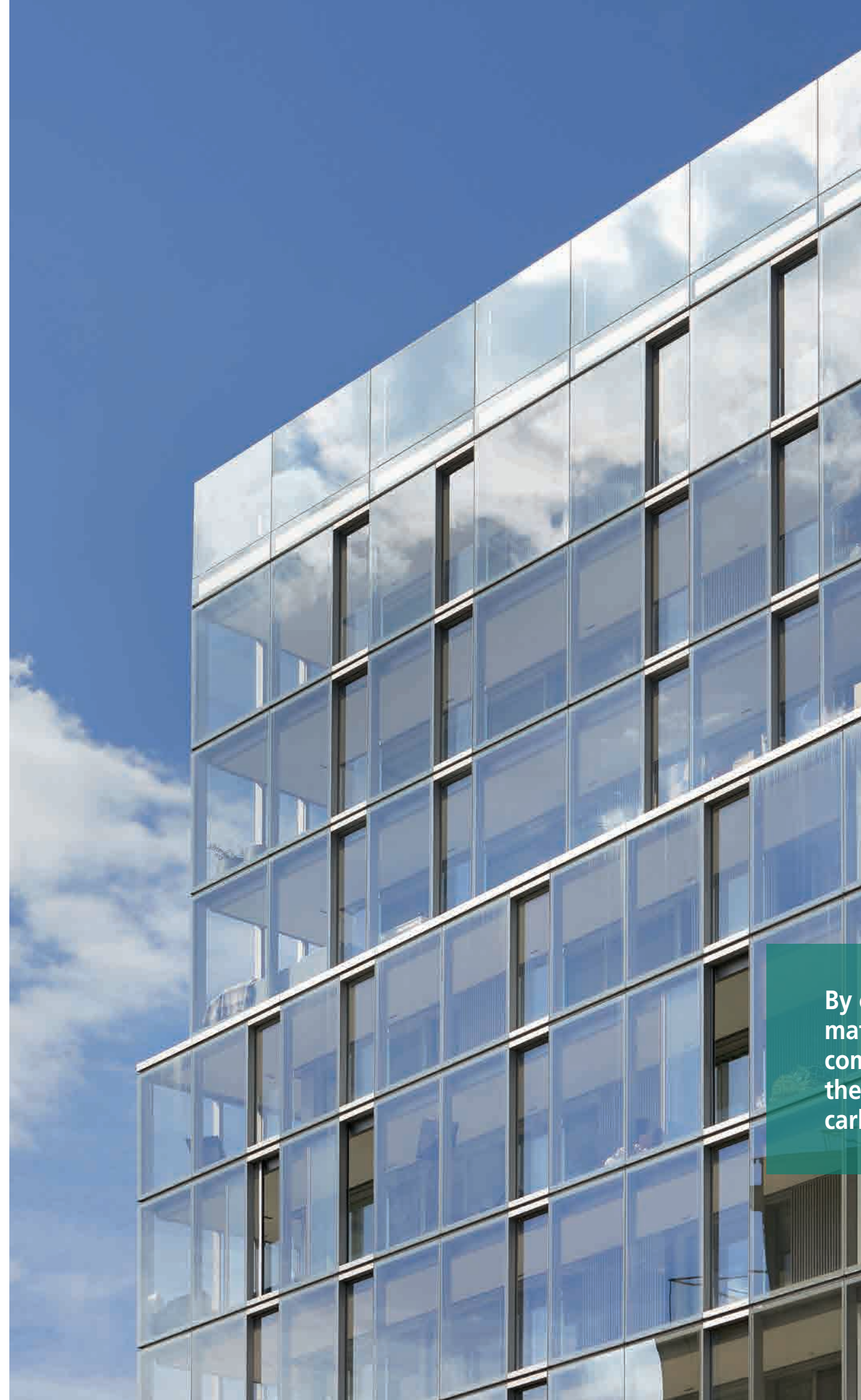
Scope 2

→ indirect emissions from the purchase of energy.



Scope 3

→ indirect emissions that occur in a business' **value chain** from the supply of raw materials to transport on site.



While it is possible for many companies to achieve major Scope 1 and Scope 2 emissions reductions on their own, the majority of emissions and cost reduction opportunities lie in Scope 3, requiring action across the entire value chain.

Aluminium, steel, concrete and glass are carbon-intensive materials and, as such, represent the biggest opportunity for reducing embodied carbon. The contribution of a glass facade to a building's total embodied carbon ranges from 10 to 20%⁴. A company wishing to reduce GHG emissions in its value chain will need to revise its use of materials and source low carbon alternatives.

By opting for low-carbon or carbon-neutral materials, among other steps, industrial companies and real estate players can reduce their Scope 3 GHG emissions and thus the carbon footprint of their end-products

4. RIBA 2023 Climate Challenge



Benefits of glass as a
sustainable material

Glass recycling

Flat glass circularity in construction activities

RECYCLABILITY

Glass is a recyclable material. AGC has always recycled glass cullet from its own plants and subsidiaries by combining it in the furnace with virgin raw materials to produce glass.

Glass cullet comes from various sources, including from facades and windows due for demolition or renovation. By removing the glass instead of downcycling it or disposing of it in a landfill, the old glass can be recycled to produce glass with a smaller embodied carbon footprint.

AGC works with a network of partners specialised in dismantling facades and removing glazing. The glazing is then collected and processed by recyclers into high-quality cullet for recycling and remelting in our flat glass furnaces.

Why is recycling glass important?

To achieve lower carbon emissions in production processes, it is essential to replace raw materials with a higher percentage of cullet in the furnace.

By using more glass cullet in our furnaces we consume smaller quantities of raw materials, which are mostly natural resources containing CO₂. As a result, we consume less energy to reach melting point in the furnace, resulting in lower quantities of CO₂ emissions.



What is cullet?

Cullet is recycled glass that has been crushed and processed so it is ready for remelting.

How is flat glass recycled?

- **1.** The window is removed from the facade and the frame is dismantled to recover the glazing.
- **2.** The glazing is collected on-site in skips, which are then taken to the recycler.
- **3.** The glass is processed by the recycler to extract cullet of a quality that meets the specifications for the production of flat glass.
- **4.** Using more recycled glass means consuming smaller quantities of raw materials and therefore consuming less energy to reach melting point in the furnace.
- **5.** The customer is issued a certificate that states how much material resources were saved and CO₂ emissions prevented.

By embracing this circular approach in retrofit and renovation projects, real estate professionals and glassmakers can contribute towards reducing the amount of embodied carbon in buildings while helping the construction and property sector move towards carbon neutrality.

Low-Carbon Glass

Glass with a reduced carbon footprint

SUSTAINABLE AND CIRCULAR MANUFACTURING

Opting for Low-Carbon Glass means reducing the embodied footprint of the glass by optimising the entire value chain. This represents a significant gain given the volume of glass used in a typical project. For the building segment in particular, this is in line with the taxonomy standards prescribed by the EU to achieve carbon neutrality.

Since Low-Carbon Glass delivers the exact same aesthetics and quality as conventional products, it can replace standard glass at any point in the project process – even after the design and specification phases.

Low-Carbon Glass also addresses industrial companies' Scope 3 emissions. By specifying Low-Carbon Glass for their products, industrial companies can reduce their own Scope 3 emissions as well as the Scope 3 emissions of their products.



AGC takes a holistic approach towards sustainably producing Low-Carbon Glass

- 1. Sustainable sourcing of raw materials
- 2. Use of highly efficient melting furnaces
- 3. Increased use of cullet (recycled glass)
- 4. Use of green energy sources
- 5. Optimisation of transport between Group sites for finishing processes
- 6. Optimisation of transport for finished products



Watch this video for more information about our holistic approach

Low-Carbon Glass and Recycle Glass service meet the requirements of numerous environmental certification programmes for buildings.



Low-Carbon Glass has a third-party verified Environmental Product Declaration (EPD).
Registration number: 20240437786.

AGC Low-Carbon Glass

- > Reduced embodied carbon footprint of 5.5 kg* CO₂ eq./m² for 4mm float glass
- > At least 50% recycled content**
- > No compromise on performance and aesthetics
- > Available in a wide range of products and thicknesses
- > Third-party verified EPD

* Global Warming Potential (GWP) Cradle-to-Gate (A1-A3) as defined in NF EN 15804+A2:2019
** Calculated according to ISO 14021:2016, excluding internal cullet

Commitment to sustainability: a key part of asset strategy

CROMWELL GROUP

Cromwell Group targets net-zero with Low-Carbon Glass in Nervesa 21

Cromwell Group has pledged to achieve net-zero Scope 1, 2 and 3 emissions across its entire portfolio – and that includes tenants' emissions – by 2045.

In Nervesa 21, an office building project in Milan, Italy, 95% of the building's materials removed during the strip-out process were recycled. Nervesa 21 achieved LEED Platinum Certification and WELL Gold Certification.

«At Cromwell we are always looking to implement circular practices and reduce our carbon emissions. Materials such as concrete, steel and glass are the most carbon-intensive and also represent the biggest opportunity for reducing our carbon footprint. AGC Low-Carbon Glass is a perfect fit for us and dovetails seamlessly with our strategy, which is why we wanted it for Nervesa21.»

– **Francesca Nolli,**
Asset Manager Cromwell Group

Cromwell is in line with the growing demand for modern sustainable workspaces from tenants who realise that the quality of their offices is now a key factor in attracting and retaining talent.



Watch the full interview



Project: Nervesa 21, Milan, Italy

Architect: Lombardini 22

Glass: 6,510 m² of Low-Carbon Glass for the facade

CO₂ savings: 80.9 tonnes of CO₂ eq.



Watch the full interview

IMMOBEL AND WHITEWOOD

Immobel and Whitewood focus on circularity in their Oxy project

Immobel and its partner Whitewood have set very ambitious objectives when it comes to taking a sustainable approach towards the Oxy renovation project in Brussels. They conducted a full analysis of the building with a view to recycling or reusing as much as possible from the seventies-era building.

« Together with AGC we ascertained that the glazing from this building dating back to the seventies was of high quality and could be recycled. »

– **Gwen Vreven,**
Development Director Immobel

The old glazing was removed from the facade and recycled at AGC's Moustier-sur-Sambre furnace to produce flat glass with a reduced carbon footprint.

« The Low-Carbon Glass resulting from recycling the old facade has a positive impact on ensuring the future building's carbon neutrality. »

Immobel completed the circular loop by having the old facade glazing removed using AGC's Recycle Glass service (instead of dumping it in a landfill) and by glazing the new building with Low-Carbon Glass.

« Grade-A buildings with a very low carbon footprint are not only a driver for higher rents and sales prices, but also align with demand from investors and tenants who are truly looking to optimise their ESG and carbon footprint as well. »*

*ESG: Environmental, Social and Governance

Project: **OXY, Brussels, Belgium**

Architects: **Snøhetta, Binst Architects**

Contribution: **Recycle Glass and Low-Carbon Glass**

Deconstruction: **De Meuter**



AGC – your partner for sustainable glass solutions

AGC Glass Europe is recognised by CDP and SBTi for the 2030 greenhouse gas (GHG) emissions reduction targets:

- Classified as a CDP Climate Change A List company
- Recognised by SBTi as WB2°C (well-below 2°C) LCA



Project: Window, Paris

Architects: SRA Architectes and KPF



AGC GLASS EUROPE, A EUROPEAN LEADER IN FLAT GLASS

Based in Louvain-la-Neuve (Belgium), AGC Glass Europe produces, processes and markets flat glass for the construction industry (external glazing and interior decoration), car manufacture and other industrial sectors (transport, solar power and high-tech). It is the European branch of AGC, a world leader in flat glass. It has over 100 sites throughout Europe. More information on www.agc-yourglass.com.

Please contact your AGC sales representative for more details:

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