Cleantech for Europe

GLOBE EUROPEAN UNION
The Network for Environmental Legislators

Building a net-zero world requires net-zero construction materials

On September 6, 2022, policymakers and innovators in construction and materials gathered in the European Parliament in Brussels to chart an ambitious path to future sustainability for construction. This paper summarizes their discussions and outlines the key measures the EU could put in place to become a global leader in sustainable and innovative construction.

Construction: a strategic sector with an oversized environmental footprint

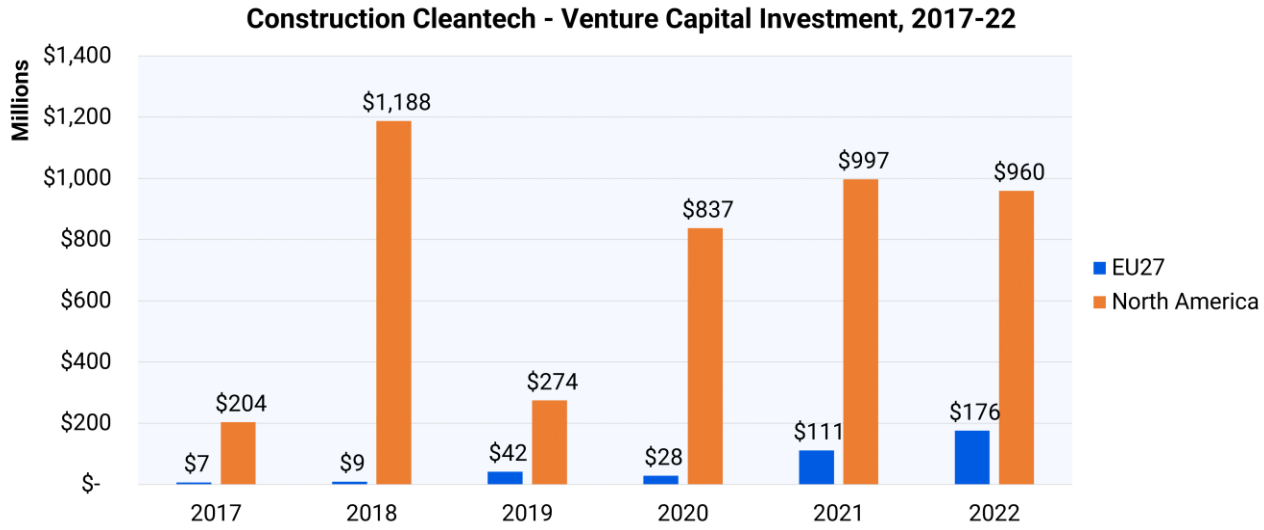
Construction is a critical industry for the EU, employing more than 25 million people across the Union. Most of those are small contractors. Materials used in construction (cement, plaster, glass, etc.) represent between 4 and 5% of the EU's GDP. Their production provides employment to tens of thousands of citizens. While construction is labor-intensive, construction materials are very capital-intensive.

Construction has a large environmental footprint, corresponding to about 15% of EU emissions (9% for construction, 5.5% for construction products). Construction is also responsible for 50% of all extracted materials in the EU, and for 35% of waste materials[1]. Yet, the construction industry is not decarbonizing. With its current trajectory, the sector is on track to decarbonize by 37% by 2030 compared to 1990, far short of the EU's overall 55% target. Notably, the European cement industry foresees only modest reductions in carbon emissions by 2030.

European innovation in building materials is growing: from zero-carbon concrete to alternative building materials, from prefabricated modular buildings to 3D-printed ones. Yet, the companies developing them are woefully underfunded, as evidenced by the flows of venture capital money in North America (see chart further below) and by the relative absence of low-carbon construction materials in EU funding programs compared to the US's large investments, for instance in the Inflation Reduction Act. These companies are also face unfair competition from large incumbents, because of subsidy schemes such as free allowances under the ETS.

It is vital to ensure that these innovations are scaled up and deployed throughout Europe. For this vision to emerge, a forward-thinking policy framework needs to be put in place, supporting the deployment of these innovations with clear targets and incentives.

[1] https://ec.europa.eu/docsroom/documents/49314/attachments/3/translations/en/renditions/native



Innovators and Policymakers discuss how to accelerate cleantech in construction

The event on September 6 brought together representatives from the European Commission and the European Parliament:

- Fulvia Raffaeli, Head of Unit Construction at DG Growth;
- Sirpa Pietikäinen, MEP, GLOBE EU President ;
- Martin Hojsík, MEP, GLOBE EU Vice-President.

and innovators developing and commercializing new construction materials:

- Jean-Christophe Trassard, Ecocem (developing zero-carbon cement);
- Hedwig Heinsman, Aectual (circular 3D-printed architectural elements from waste materials);
- Nicolas Cruaud, Neolithe (converting household waste into granulates for construction);
- Myriam Tryjefaczka, Tarkett (applying circularity to flooring materials);
- Johanna Pirinen, Stora Enso (advanced timber construction).

The speakers exchanged on the following topics:

- How to unleash the potential of cleantech innovation in construction:
    - Reducing the emissions from cement production by using less of its most carbon-intensive ingredient: clinker;
    - Accelerating the uptake of timber in construction to lock more carbon in buildings and reduce the use of cement;
    - Improving circularity to enable for recycling and upcycling of waste and products in the construction sector.
- The importance of disclosing the sustainability performance of construction products.
- The current fragmentation in EU regulations on buildings and waste.
- How to develop future-proof EU standards to promote innovation.
- How to unlock demand for and public investment in construction materials.

A Call to Action - mobilizing EU policy to accelerate the transition

Following clear conclusions from the event, GLOBE EU and Cleantech for Europe are calling for an ambitious set of measures to accelerate the development and adoption of low-carbon construction materials.

Proposal 1: Increase demand for low-carbon materials

Making low-carbon materials the norm in the EU means bridging the demand gap. Today, installers look for the better-known or cheaper materials. This is where the public sector has to take the lead through public procurement. In the EU, public procurement amounts to around 14% of European Union GDP[2]. Strengthened green public procurement criteria can be a major driver for innovation and provides industry with incentives to develop low-carbon construction products.

Policy opportunities:

- Put forward clear criteria in the Construction Products Regulation for public procurement of innovative materials;
- Set forth an evaluation process and tools for project bids which incentivize and reward public work contractors on their commitment to source decarbonized, innovative, and circular building materials;
- Create an EU task force to issue recommendations and build national partnerships on the use of low-carbon construction in public procurement.

Proposal 2: Increase public funding for the scale-up of low-carbon materials

Prioritizing innovation funding is key to scaling up low-carbon construction materials. While the EU is home to many sustainable frontrunners in the construction sector, EU citizens can't seize the opportunities offered by these companies as their products are not offered at scale. Solving this challenge requires first and foremost sustained public investment.

Policy opportunities:

- Ensure that the Innovation Fund has an increased budget and funds low-carbon construction materials projects;
- Promote financial schemes to support the uptake of low-construction materials (e.g., in the EPBD);
- Develop a culture of collaborative innovation in the construction sector, using certifications and common standards to drive a sustainability premium.

Proposal 3: Better accounting for embodied carbon

Building back better and more sustainably means tackling the embodied carbon emissions of buildings and building materials. This is a difficult task given that this measurement depends on factors such as building type, the carbon intensity of the grid, and building regulations[3]. With the burden increasingly placed on corporates to reduce their emissions, effectively measuring

[2] https://trade.ec.europa.eu/doclib/docs/2018/september/tradoc_157319.pdf
[3] https://www.bpie.eu/wp-content/uploads/2021/05/BPIE_WLC_Summary-report_final.pdf

embodied carbon emissions can spur future building innovation and foster materials creativity across the construction industry.

Policy opportunities:

- Measuring, disclosing, and regulating embodied carbon will enable consumers to identify the competitive advantage of low carbon materials;
- Rely on Environmental Product Declarations (EPDs) to measure the environmental performance of construction products across their lifecycle, including their recyclability;
- Introduce mandatory whole-life carbon standards in the Energy Performance of Buildings Directive.

Proposal 4: Using carbon pricing to accelerate low-carbon materials innovation

Putting an effective price on carbon helps drive innovation, as it makes the more polluting solution more expensive. However, the EU does not yet have an effective carbon price for construction products, because of process-based benchmarks and the subsistence of free allowances.

Policy opportunities:

- Revise the current system of allocation of free allowances (benchmarks system) and base it on production processes rather than products;
- Phase out free allowances under the EU ETS for building materials such as cement and steel;
- Include waste incineration in the EU's carbon pricing system to provide incentives for the recycling of materials but also to support the innovative models which seek to transform waste into construction materials.