



## Notes

**Davide Sabbadin** of the **European Environmental Bureau (EEB)**, the EU's largest network of civil society environmental organisations, gave an overview of the Construction and Building (C&B) sector and its connection with material production and waste creation.

**Material production** for the C&B sector is responsible for more than 900 billion tonnes of CO<sub>2</sub> eq. Material consumption must then be reduced. Arcelor Mittal and Thyssenkrupp have committed to carbon neutrality by 2050.

– **Steelworks** are the largest carbon polluters in Europe, excluding power plants. Reducing the use of structural steel at the design stage can result in 36-46% reduction in CO<sub>2</sub> emissions. If downgrading steel is avoided, **secondary steel production could increase and meet 85% of the EU's steel needs by 2050.**

– **Cement production** is a significant source of emissions in the EU: 114 million tonnes of CO<sub>2</sub> per year. Clinker production accounts for 60-65% of process emissions in cement production. [Cembureau](#) has committed to climate neutrality by 2050, mostly by relying on carbon capture and sequestration (CCS). New cements with different clinkers are being tested, resulting in 20-30% CO<sub>2</sub> savings; the industry is targeting a lower clinker content (from 77 to 65%). **Concrete in buildings needs to be used more efficiently (5-10% reduction).**  
**Possible actions:** reduce concrete use at design stage, reuse structural concrete, design with a view to disassembling the building.

– **Chemicals - particularly plastics:** this sector has pledged to increase the use of recycled plastics (PVC, PP, PE, Polystyrene).

– **Glass production** entails chemical emissions from furnaces. Electrification of large furnaces is not yet available.

# Conclusions

- Reducing the demand for buildings and building material is a priority in order to reduce emissions dramatically, but industries do not seem to take this into consideration. It is important to extend the life of buildings and materials.
- Usage should be preferred over ownership of a building, but this means that the industry must change its business model.
- It is important to think circular from the outset.
- Research is needed to improve the quality of secondary cement (clinker reduction) and steel (to avoid downgrading).

**Laura Cutaia** of [ENEA-ICESP](#) presented the [orientation paper](#) on the circularity of the construction sector by ENEA, with the participation of [INEC](#), [ACR+](#), EEB and [Ecopreneur](#).

Construction and demolition (C&D) accounts for 50% of material use by weight, 40% of energy consumption and 35% of GHG emissions in the EU. Contributors are steel, cement, plastics, paper, glass and non-ferrous metals.

C&D is the largest waste stream in the EU by weight: in 2016, the EU generated 374 million tonnes of C&DW. The revised Waste Framework Directive (2008/98/EC, amended 2018/851) has set a mandatory target of 70% recovery by 2020. Recovery performances, although high, differ significantly between EU Member States, varying in 2016 from 54 to 100%.

**C&D strengths:** 1) material recirculation, 2) production improved to reduce material footprint, 3) extension of product lifespan, 4) possibility of recovering C&DW as a substantial alternative to virgin material, 5) implementation of design to improve the quality/quantity of secondary material.

**C&D weaknesses:** 1) price competition between recycled and virgin material, 2) lack of confidence in quality and structural properties of secondary raw materials, 3) hazardous substance content, 4) lack of sufficient/reliable data on materials in existing buildings, 5) lag between implementing circular actions and their benefits.

**Six areas of intervention** with measures to be implemented to improve circularity in the B&C sector: 1) integrated policies and governance between construction and extractive sectors, 2) integrated metrics for construction, 3) integrated tools to foster interconnections between construction/extractive and other sectors, 4) territorial initiatives to close the loop in the value chain, 5) educational initiatives to train experts at any level, 6) public awareness-raising initiatives (Made to last, Disown ownership, Get local, Get clean).

**Key findings:** no carbon neutrality target will ever be achieved if circular economy provisions are not put at the heart of B&C sectoral policies.