

URGENT ACTION FOR CIRCULAR CONSTRUCTION

Boost Circularity in construction to preserve critical and limited resources

Europe faces a critical challenge: we are running out of non-metallic minerals such as sand and gravel essential for construction, threatening our competitiveness and climate goals. In the Capital Region of Denmark, this crisis is acute – our accessible reserves will be depleted by 2033.

As the regional authority responsible for raw materials planning, designation of extraction sites and sustainable development, we bring frontline experience to this issue. We already import 64%¹ of our raw materials, resulting in significant environmental costs and economic vulnerability. Meanwhile, valuable construction and demolition waste - app. 40% of all EU waste² – is downcycled or discarded rather than utilised as secondary raw materials.

The forthcoming EU Circular Economy Act (CEA), a key priority in President von der Leyen's 2024-2029 agenda, represents a crucial opportunity to transform how we perceive and regulate these materials: not as waste to be managed, but as strategic resources to be circulated.

This position paper contributes with evidence-based recommendations for EU policy addressing specific challenges of raw material scarcity and circular construction.

1. Treat non-metallic minerals as critical resources

In Europe, there is an accelerating scarcity of non-metallic minerals used in construction. In the Capital Region of Denmark, geological surveys predict the accessible non-metallic minerals will be depleted by 2033³. Extracting raw materials is increasingly difficult, as all land is already in use and often critical for other societal purposes such as nature protection, agriculture, housing, energy production or recreation. Even when technically and economically feasible, the extraction of raw materials comes with a high societal cost, causes conflicts and is irreversible.

The consequences are already visible: Our region imports 64%⁴ of its construction raw materials from other regions and countries, creating growing costs and logistical challenges. Supply problems in the construction sector can spill-over to other sectors, as construction and infrastructure are enablers for growth, competitiveness and realisation of societal aims.

As more regions face depletion of these essential materials, the distance between extraction and use increases, multiplying both economic costs and environmental impacts. The transport of these heavy materials becomes increasingly unsustainable with distance, as transportation costs and CO2 emissions rise with longer hauls.

Recommendation

Treat non-metallic minerals as critical resources: Drawing inspiration from the Critical Raw Materials Act, non-metallic minerals should receive recognition as essential resources requiring dedicated management strategies and conservation policies. The CEA should incentivise the circular use of these materials and reduce pressure on virgin extraction, recognising their fundamental importance for European infrastructure and construction needs.

2. Boosting market demand for secondary materials in circular construction

In Denmark, a mere 0.25%⁵ of building materials are reused. Meanwhile, the amount of construction waste has increased by 61% (2011-2022)⁶. The potential is largely untapped – we estimate that 10-15% of the current raw material consumption in our region could be replaced by recycled or reused construction materials.

Despite technical feasibility, circular practices in construction remain limited due to fundamental market failures. The primary barrier is economic and incentives: virgin materials remain cheap compared

to the labour costs of preparing materials for reuse and recycling. Neither the price of primary nor secondary raw materials currently reflect their societal and climate impacts.

This discourages SMEs attempting to establish businesses in the field of reusing construction materials. Without sufficient demand, they cannot develop innovations and infrastructure needed to reduce costs.

Recommendation

Create demand with mandatory reuse and recycling: Public procurement should require a minimum percentage of recycled (20%) and reused (10%) construction materials in all projects exceeding 100m², with the required minimums increasing over time. This would create consistent demand needed for investments into business development and technological innovation.

3. Removing barriers to soil and material recirculation

Surplus soil from construction such as clay soil is classified as waste rather than a resource, leading to the disposal of approximately 7.5 million tons clay soil annually, in our region alone. In Denmark, approximately 25% of surplus soil from construction consists of clay soil. Studies show that at least 2 million tons of this clay soil could directly replace virgin raw materials such as sand and gravel in construction applications such as road fill or coastal protection⁷. It could also replace backfilling of demolition waste, of which about 52% is downcycled into road fill in Denmark⁸.

Yet under current regulations, it is often cheaper and simpler to dispose of excess soil and use virgin raw materials instead for construction. This regulatory approach prevents the utilisation of a valuable resource and drives unnecessary extraction of new materials.

Recommendation

Revise waste classification: EU Waste legislation should classify uncontaminated surplus soil and clean construction waste as resources rather than waste, and mandate Member States to remove regulatory barriers to their reuse.

Introduce reverse burden of proof: Road construction projects should be required to justify the use of virgin materials over secondary raw materials, making circularity the default option.

4. Preserve existing buildings and their resources

Demolishing existing buildings to make way for new construction is the least sustainable choice for city planners and developers. However, it is still the default. This approach exacerbates the need for virgin materials but also wastes the materials themselves and the energy and resources that went into their initial extraction, processing, and construction. The demand for raw materials for new construction is forecasted to be constant in Denmark⁹. Accessible virgin materials cannot sustain this demand.

Instead, the potentials and value of existing buildings needs to be preserved. When existing buildings do need to be demolished, they urgently need to be treated as repositories of valuable resources, for which upcycling should be the aim. This is largely overlooked, and construction continues to prioritise virgin materials and downcycling, even when alternatives exist.

Recommendations

Empower renovation over demolition: Following London's successful mode¹⁰, the EU should empower and encourage public authorities to introduce legislation allowing for refusal of demolition permits when buildings can reasonably be renovated or repurposed to preserve their resources.

Regional material hubs for recirculation of materials: The EU should mandate Member States to adopt plans for the establishment of material hubs for collection and recirculation of construction and demolition waste, at least at regional scale.