



## Carbon footprint reduction in construction

Emerging solutions to reduce greenhouse gas (GHG) emissions during the execution phase of our construction projects.

### Challenge context

#### Key facts

The construction industry is one of the sectors that causes the greatest environmental impact and contributes to global warming, as it consumes large amounts of raw materials and energy from non-renewable sources. Cement production alone accounts for 8% of global CO<sub>2</sub> emissions, a tangible illustration of the impact of a sector that is estimated to be responsible for more than 30% of the world's total greenhouse gas emissions.

#### Problem description

- Construction is a traditional industry in which innovation faces numerous barriers.
- Today's construction machinery is very energy-intensive, resulting in a worrying source of greenhouse gas emissions.
- Current conditions demand ever higher sustainability standards.
- Construction operations generate negative impacts, from noise pollution to high volumes of plastic waste and materials that were not fully utilized.



### Challenge goals

Identify and implement technological solutions and sustainable construction processes that allow us to minimize energy consumption and greenhouse gas emissions generated directly and indirectly in construction activities.

- We are looking for innovative solutions that allow us to reduce the consumption of raw materials through the recycling and reuse of waste.
- We are looking for innovative solutions that provide us with sustainable materials that extend the life cycle of our infrastructures.
- We are looking for innovative solutions that help improve energy efficiency and reduce harmful gas emissions generated by the assets used in construction activities.
- We are looking for innovative solutions to reduce the negative environmental impact directly and indirectly associated with industrial processes in civil and commercial construction.

### What are we looking for?

#### We are looking for innovative solutions that:

- Strengthen the reuse and development of new materials from construction and demolition waste.
- Contribute to optimize energy expenditures and reduce greenhouse gas emissions in daily operations.
- Develop a less invasive construction process, ensuring a friendly environment for all stakeholders within the value chain.

### Expected impact

- Move towards a circular and efficient construction plan focused on the reduction of greenhouse gas emissions.
- Achieve a sustainable operational management model for resources in construction sites that can be applied to all future projects.
- Encourage the emergence of new sustainable processes and materials through the use of existing resources.
- Ensure a safe and clean environment for all stakeholders involved in the construction processes.

### Target audience

This challenge has a global scope and is aimed at the entire professional innovation community, such as UTEs, research centers, universities, and startups.