

A key sector for climate action, buildings and construction is not on track. Driving down emissions will entail: **aggressively reducing energy demand in the built environment, while decarbonizing the power sector and implementing materials strategies that reduce lifecycle carbon emissions.** Retrofits and efficiency measures in new builds could help create jobs, while making buildings Paris-compliant, improving livability and reducing operating costs. Including the sector into COVID-19 recovery measures means building back better, literally. Due to value chain fragmentation, high informality and dependence on sub-national actors for policy implementation; co-creation of policies, public-private partnerships and innovative finance are critical for a zero-carbon pathway.



Key messages

• Increase pace and scale of action

The world has cost-effective technologies that can reduce emissions in the sector. Yet, progress on decarbonization is slowing down, almost halving from 2016 to 2019. Buildings are mentioned in the Nationally Determined Contributions of 136 countries, yet many do not cite concrete actions. The Global Alliance for Buildings and Construction, in partnership with the International Energy Agency, has provided one global and three regional roadmaps, which provide a framework and process towards a zero-carbon vision.

• Carbon reduction through resource efficiency

The share of emissions from the buildings and construction industry, the embodied carbon, has long been overlooked. It makes up for almost 10 per cent of the sector's emissions. With floorspace set to double by 2050, and most of this growth happening in countries that do not yet have building energy codes, building material strategies need to gain traction.

• Leverage nature-based solutions

Integrating well-designed, nature-based solutions into buildings and construction can help increase the sector's sustainability and bring health and resilience benefits.

• Build back better – attaching green strings to COVID-19 recovery packages

Up to 30 jobs in manufacturing and construction would be created for every million dollars invested in retrofits or efficiency measures in new builds, while future-proofing buildings.

Key data

- In 2019, the buildings and construction sector is connected to **38% of total global energy related carbon-dioxide emissions**. Despite stable energy demand, operational emissions increased to their highest level ever, at around 10 GtCO₂ or 28 per cent of total global energy-related CO₂ emissions. Emissions from the construction industry represent an additional 10 per cent.
- In G7 countries, material efficiency strategies, including the use of recycled materials, could **reduce greenhouse gas emissions in the material cycle of residential buildings by 80–100 per cent by 2050**.
- **Almost two-thirds of countries lacked mandatory building energy codes in 2019**, meaning more than 5 billion square metres of edifices were built last year without mandatory performance requirements.
- Spending on energy-efficient buildings increased 3 per cent from 2018 to 2019. Yet, **for every \$1 spent on energy efficiency, \$37 is spent on conventional construction approaches**.

Further Reading

[Global Status Report for Buildings and Construction](#)
[Global and Regional Roadmaps Towards a Zero-Emission, Efficient and Resilient Buildings and Construction Sector](#)
[Guide for Incorporating Buildings Actions in Nationally Determined Contributions](#)
[Resource Efficiency and Climate Change – material efficiency strategies for a low-carbon future](#)