

Decarbonising construction sector is key to reaching climate targets

South Africa's building and construction sector can transition to net zero by 2050, while also addressing the challenges of climate resilience and housing inequality, according to a new report. It comes from a series of industry reports from the Climate Pathways and Just Transition Project, which is run by the National Business Initiative (NBI), in partnership with Business Unity South Africa (BUSA) and Boston Consulting Group (BCG).



Construction industry needs to decarbonise. Source: CDustin/Unsplash

The sector, which emits 7% of the country's direct emissions, will need to adopt low-carbon technologies and practices, as well as improve access to water, sanitation and affordable housing for millions of people.

The report suggests two ways to reduce carbon emissions from buildings and construction:

One is to use less space and materials, especially steel and cement, which are very polluting. The other is to use more renewable electricity and energy efficiency for heating and cooking. Spatial planning is also an important consideration to lower energy use, transport costs, commuting time and social inequality, as well as create demand for greener materials.



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10 key findings

The extensive [report is available](#), but the main takeouts are:

1. To fight climate change, South Africa must build green and resilient structures that create jobs and meet people's needs.
2. South Africa's building sector could boom (74-125% increase) by 2050 due to population, development and net zero needs.
3. Buildings and construction could raise sector emissions from 34-77Mt CO₂e by 2050, mainly from operations.
4. To avoid more emissions from buildings and construction, we need to use less and cleaner materials, and switch to renewable energy for both operations and construction.
5. Efficient building design can reduce steel and cement demand by 13% and 28%; spatial planning helps decarbonisation and transport efficiency.
6. Decarbonising building operations: improve efficiency (38% emission reduction) and electrification (29% reduction); construction focus: on-site efficiency and machinery electrification (42-58% reduction).
7. Retrofitting existing buildings vital because they account for about 40% of potential emissions, but this is challenging due to design limitations.
8. Decarbonisation cost is estimated at R263–R285bn by 2050 – efficient design halves costs and is more sustainable.
9. Job creation is a crucial benefit of the transition with a potential for 800,000-1,400,000 new jobs by 2050, although we need to consider the RDP model's failures and create better housing solutions.
10. It is feasible to decarbonise operational emissions because regulations are evolving with stricter standards for efficiency, but we need innovative urban planning and construction approaches.

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