



Putting the construction sector at the core of the climate change debate

Climate change is having a significant impact on businesses, society, and individuals. It is increasingly understood that a shift towards a low-carbon economy is needed. The building and construction sector plays a central role in this shift. The sector's greenhouse gas (GHG) emissions account for approximately 40% of global GHG emissions (WBCSD 2018). The major contributors to these emissions are the materials used as well as the heating, cooling, and lighting of buildings and infrastructure.

Written by:
Michael Müller
Deloitte Germany
mmueller@deloitte.de

Thomas Krick
Deloitte Germany
tkrick@deloitte.de

Dr. Julian Blohmke
Deloitte Germany
jblohmke@deloitte.de

The construction sector is a major contributor to climate change. An overhaul is needed to both minimize the sector's impact on climate—as well as prepare for climate's impact on them

The beginning of the last decade was partly spent on a debate around stranded assets, i.e., the risk of devaluation of assets in the oil and gas industry due to regulations and market changes. It is now becoming increasingly clear that, because of their high direct and indirect carbon emissions, real estate assets and construction projects might not be stranded but require additional capital injections for refurbishment, and thus margins may need to be adjusted. This could lead to massive devaluations. As it is of basic importance to many industries, the highly carbon intensive construction sector is increasingly being pushed into the spotlight of the climate change debate.

Climate change and the construction sector

The building materials and construction sector is confronted with two major challenges, which expose sector stakeholders along the construction value chain to climate change risks in two ways. On the one hand, the sector contributes to climate change through greenhouse gas (GHG) emissions and is then exposed to carbon taxes in the production of building materials as well as from power and heat supply in the use phase of buildings. Moreover, the sector must address infrastructure and sector decarbonization goals (transition risks).

On the other hand, stakeholders are exposed to risks from the physical changes in the environment caused by climate change, like more extreme weather conditions on construction sites, water shortages, and other such deteriorating environmental conditions as temperature increase and flooding (physical risks).

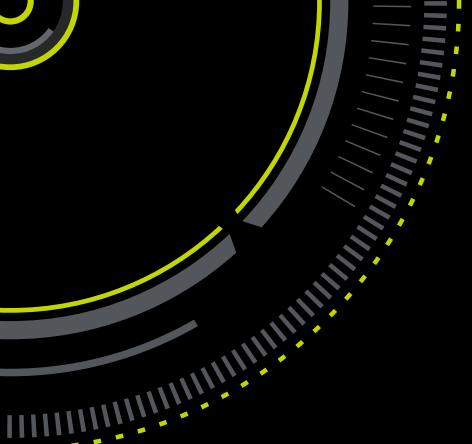
Actions to combat climate change in the construction sector

There are several areas for climate action the construction sector should care about.

Reducing carbon emissions and transition risks

Companies are responsible for reducing their carbon emissions to achieve net-zero emissions by 2050, and, thus, the goal of the Paris Agreement to reduce global warming to below 2 degrees Celsius. Hence, their responsibility should be to drive decarbonization along the entire value chain. Most notably action should be taken to influence:

- The lowering carbon intensity of building materials in the upstream production process of materials
- The implementation of climate-smart, low, and clean energy consumption in the use phase of real estate and infrastructure
- The design of more recyclable materials and closed material flows in the refurbishment and demolition phases (circularity of building materials)



Building resilience against the environmental consequences of climate change

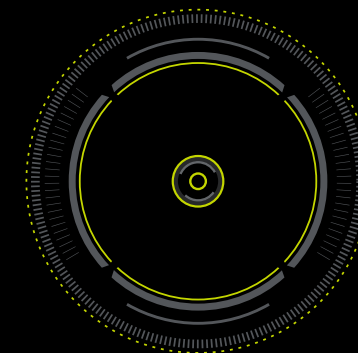
Physical risks like extreme weather events and floods may unfold in the mid-term future and require the forward-looking analysis of physical risks. Preparatory measures against the negative effects of these events during the use phase of buildings and infrastructure are required. The expansion of buildings and infrastructure will also influence the natural environment's resilience to negative climate change impacts on the environment due to increases in precipitation and the ability to sequester carbon in the natural environment. This will include activities aimed at:

- Increasing the durability of materials against extreme weather conditions
- Overhauling heating/cooling and insulation concepts

- Revising water management towards more climate-smart water management systems during the construction and use phases of buildings
- Lowering the potential negative effects of the construction sector on the environment from soil sealing (change in water flows from heavy rain) or land use change (carbon sequestration)

Conclusion

The construction sector will be called upon to take action to manage climate change challenges actively and take responsibility for its direct or induced carbon emissions. It will also need to prepare for a changing environment and build resilience against the negative impacts of climate change.



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