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On the way to adjust standards to future climate

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Climate change is one of the greatest challenges of our time. Despite all scientific findings on climate change, the current measures to reduce GHG emissions are too small to keep the global warming well below 2 K, preferably at 1.5 K. “Policies currently in place point to a 2.8°C temperature rise by the end of the century.” [1] Therefore, in addition to measures for climate protection, strategies and measures for adaptation to climate change are needed to mitigate the consequences of climate change and avert damage.

To date, planning decisions, e.g., infrastructure, urban and regional planning, take into account the climate of the past in the relevant standards. In fact, today’s planning often has an impact over several decades and cannot be easily corrected (e.g., railroad embankments, sewage systems). Thus, the climate relevant to the lifetime of the planning realisation must be considered in standards to minimize damage caused by future climate. This is also true for existing infrastructure that has to be adapted to future climate (e.g., depth of water pipes; higher ground temperatures needing more chlorination for sanitary reasons). To facilitate the adjustment to a changing climate for the user of standards and perform adaptation without expert knowledge on climate, the Association of German Engineers (VDI) has decided to review existing standards and standards in progress with regard to climate resilience.[2] The aim is to modify standards, if necessary, by including the climate relevant for the lifetime of the planning realisation. This sounds simple, but a number of questions has to be answered: “To which climate change do we need to adapt?”, “What is the lifetime of a planning realisation?”, “Which climate changes are relevant for this standard?”. The approach followed by VDI and some example answers are given.

[1] UNEP: Emissions Gap Report 2022.

<https://www.unep.org/resources/emissions-gap-report-2022> , last used 10.04.2023

[2] VDI: Strategien und Maßnahmen für eine klimaangepasste Zukunft.

<https://www.vdi.de/themen/klima-innovation-anpassung> (German only), last used 10.04.2023