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EXTENDED ABSTRACT

Consideration of climate change in standards

Catharina Fröhling, VDI – Association of German Engineers

froehling@vdi.de

Prof. Dr. K. Heinke Schlünzen, Meteorological Institute, University of Hamburg

Introduction

Climate change is one of the greatest challenges of our time. Despite multiple efforts to reduce greenhouse gas emissions, reductions are too small to keep global warming well below 2 °C, preferably at 1.5 °C above pre-industrial levels (Paris Agreement). Instead, it probably will reach 2.9 °C by the end of this century. Therefore, adaptation to climate change is also essential to reduce the negative consequences. For this reason, already in December 2008, the Federal Government adopted the German Adaptation Strategy to Climate Change (Deutsche Anpassungsstrategie - DAS) to create an initial framework for climate change adaptation in Germany. With the Federal Climate Adaptation Act (Bundes-Klimaanpassungsgesetz - KAnG), which came into force in July 2024, a binding framework was created for adaptation. It is to be applied at federal, state and municipal level, and aims to systematically coordinate and promote activities in adaptation to climate change at all levels.

Objective

The Federal Climate Adaptation Act states that adaptation to climate change can also take place through technical rules if these help to avoid or minimises the effects of climate change (§8-2 KAnG). According to this, standards play a major role in strengthening climate resilience. Therefore, the Association of German Engineers (VDI) has set itself the task of considering the consequences of climate change in the regular revision of VDI Standards, integrating the aspects of climate change into the standardization process and, if necessary, initiating new standardization activities. This holds for all standards, including those applied in air quality assessments.

Method

To integrate aspects of climate change into the standardization process a method for reviewing and modifying VDI Standards regarding climate change was development and is now applicated.

During the revision or the elaboration of a VDI Standard the following steps are additionally taken:

1. The time span for the effect of the standard is determined.
2. Considering this time, parameters and methods used in the standards are either kept (short time span) or updated.
3. Or long-time spans reaching into the range of the uncertainty of the range of diverging climate projections dynamic adaptation might be considered.

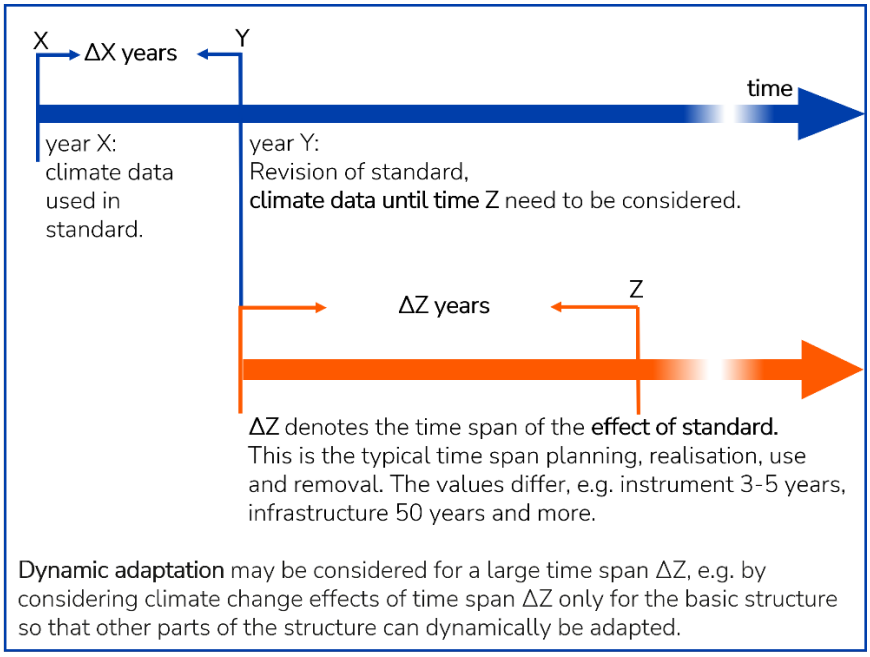

Image: Time scales – when changes in climate have to be considered
Source: VDI

Examples of VDI Standards that consider climate change

- Established VDI Standards, taking climate change into account
  (VDI 3786 Part 21 “Meteorological measurements; Evaporation”, VDI 3786 Part 24 “Meteorological measurements; Crowdsourcing”, VDI 3787 Part 2 “Methods for human-biometeorological evaluation of the thermal component of the climate”)
- New standardization activities
  (VDI 3787 Part 7 “Climate indicators”, VDI-EE 3787 Part 13.1 to 13.3 “Heat action planning”, VDI-EE 4900 “Digitalization of wastewater systems”)
- VDI Publications regarding climate impact
  (VDI-Recommendation “High-resolution atmospheric modelling for assessing urban temperatures”)

Conclusion

Implementing and achieving climate policy goals requires a wide range of comprehensive approaches. The consideration and use of proven knowledge, scientific climate findings and the current state of technology in standards facilitates not only the

implementation of adaptation measures but also consideration of climate changes in the long-used standards by appropriately adjusting them. Both is needed for sustainable assessment development. VDI has the goal to master the challenge of adaptation to climate change by providing various VDI Standards, new standardization activities as well as publications regarding climate change.