

**23rd International Conference on
Harmonisation within Atmospheric Dispersion Modelling
for Regulatory Purposes
15-19 September 2025, Hamburg, Germany**

EXTENDED ABSTRACT

Abstract title:

Promoting harmonisation in the field of air quality in Germany through standardisation

Name and Affiliation of the First Author:

Julia Nickel-Kuhn, VDI (The Association of German Engineers, Düsseldorf, Germany)

Email of first author:

nickel-kuhn@vdi.de

Names and Affiliations of the Co-authors:

Andreas Rutz, VDI (The Association of German Engineers, Düsseldorf, Germany),

Ge Cheng, VDI (The Association of German Engineers, Düsseldorf, Germany),

K. Heinke Schlünzen, (Meteorological Institute, University of Hamburg, Germany)

Alfred Trukenmüller, (German Environment Agency, Dessau-Roßlau, Germany)

Max Bangert, (BASF SE, Ludwigshafen, Germany)

Background

Air pollution control is crucial to protect people's health and the environment. Setting and applying standards to evaluate present and future air quality conditions creates a consistent and harmonised basis for assessment methods. At the European level, a major milestone was the adoption of the Directive on "ambient air quality assessment and management", which built the framework of legally binding, cross-border regulations for air quality assessment.

In Germany, foundational work began with the establishment of the Commission on Air Pollution Prevention (KRdL) in 1957— from 1990 a joint committee of VDI and DIN. From the outset, the KRdL was tasked with supporting the Federal Ministry for the Environment (currently BMUKN) by developing science-based practically applicable standards that could be formally integrated into legislation and regulatory frameworks. In addition to VDI Standards, KRdL's work also includes the development of DIN, CEN, and ISO Standards covering various aspects of air pollution control.

Structure and topics of KRdL, Division "Environmental Meteorology"

The KRdL is divided into four divisions. Technical Division I "Environmental protection technology", Technical Division II "Environmental meteorology", Technical Division III "Environmental quality" and Technical Division IV "Environmental measurement technology".

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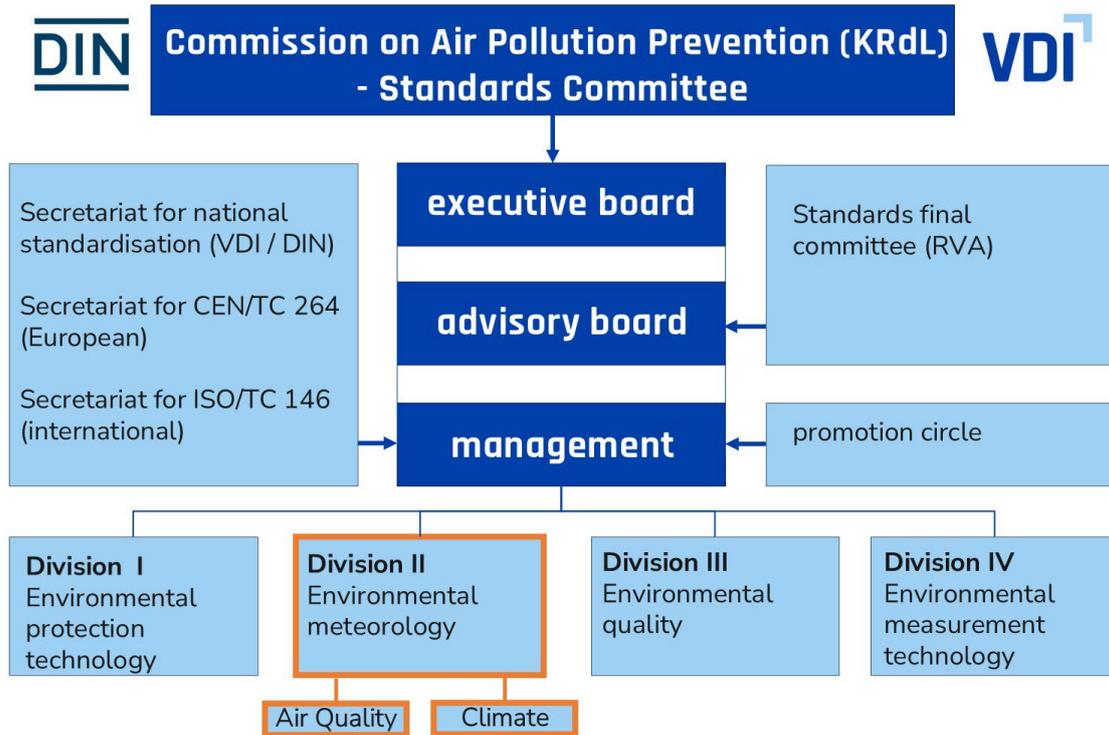


Figure 1: National and international embedding and Divisions of Commission on Air Pollution Prevention (KRdL).

Division II „Environmental meteorology” develops standards relevant for meteorological and climatological applications related to environmental protection, with a particular focus on air quality. It is divided into two committees, committee “Air Quality” and committee “Climate”. The topics covered by these committees include the following.

Committee Climate:

- Methods for describing air quality for urban and regional planning at regional level
- Local cold air
- Urban development in view of climate change
- Human biometeorological requirements in the framework of recreation, prevention, therapy, and rehabilitation

Committee Air Quality:

- Meteorological measurements
- Emissions (gases, odours, dust from diffuse sources)
- Dispersion Modelling (gaseous and particulate trace substances, odorous substances, emission from motor vehicles, accidental releases, etc.)
- Accidental releases
- Deposition
- Quality assurance methods

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Modelling accounts for a large proportion of the work within the committee Air Quality. Standards covering topics such as micro- and mesoscale wind field models, atmospheric dispersion- and deposition models, determination of plume rise, application of wind tunnels and quality assurance of models are covered.

The process of Standards development

The development of VDI Standards is a transparent process in which everyone should be able to get involved. Thereby the VDI standardisation work ensures the involvement of all relevant stakeholders, including e.g. government agencies, researchers, industry representatives, and NGOs (Figure 2). Participation in standardisation projects enables experts to translate scientific findings into practical applications, thereby promoting effective knowledge transfer and supporting evidence-based decision-making.

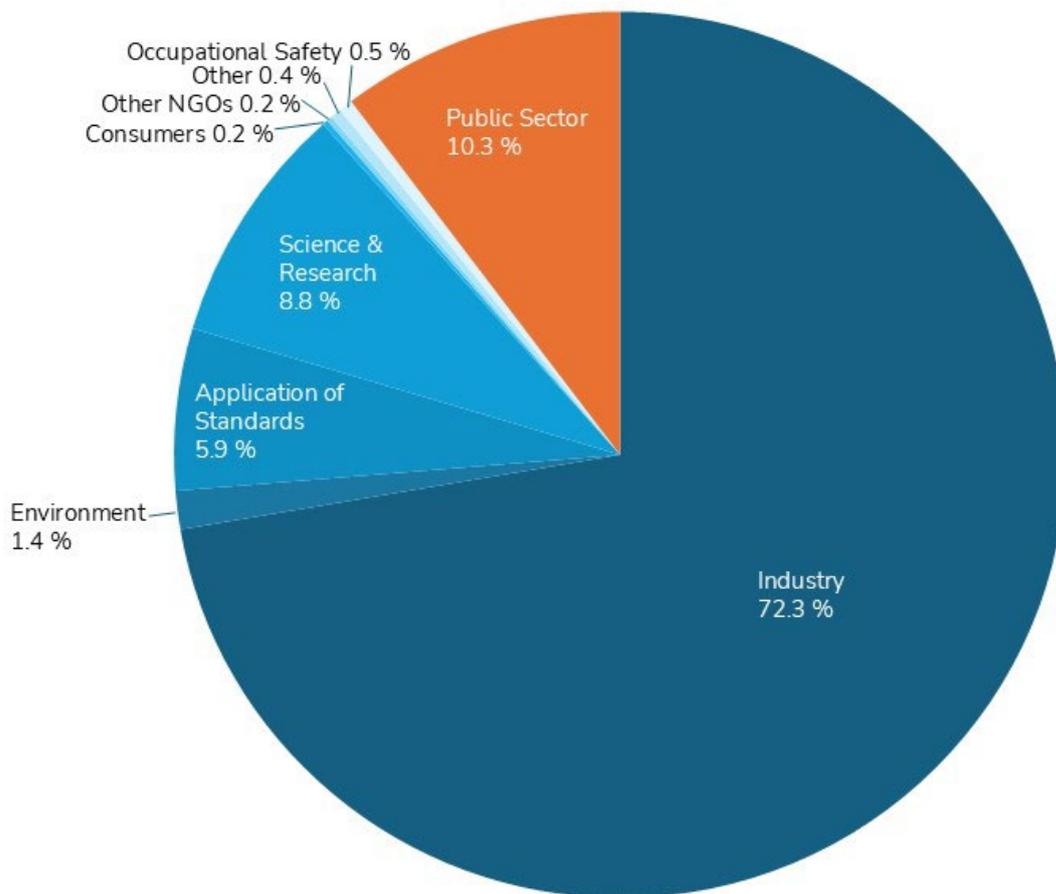


Figure 2: Stakeholder groups involved in development of standards within KRdL in 2024 (own Figure, data from <https://www.din.de/en/getting-involved/standards-committees/krdl>).

A number of formal processes must be followed in the development of a standard. These are defined in standard VDI 1000. Amongst others, it includes the “public enquiry

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procedure”, in which the public is given the opportunity to pass comments to the Draft VDI Standards and thus contribute to the content (Figure 3). Once the comments have been examined (and incorporated as appropriate) by the standards committee, the standard is translated into English and, after approval by the technical advisory council, published as a final VDI Standard. Thanks to the transparent and participatory development process, these VDI Standards are regarded as a recognised and broadly accepted professional foundation.

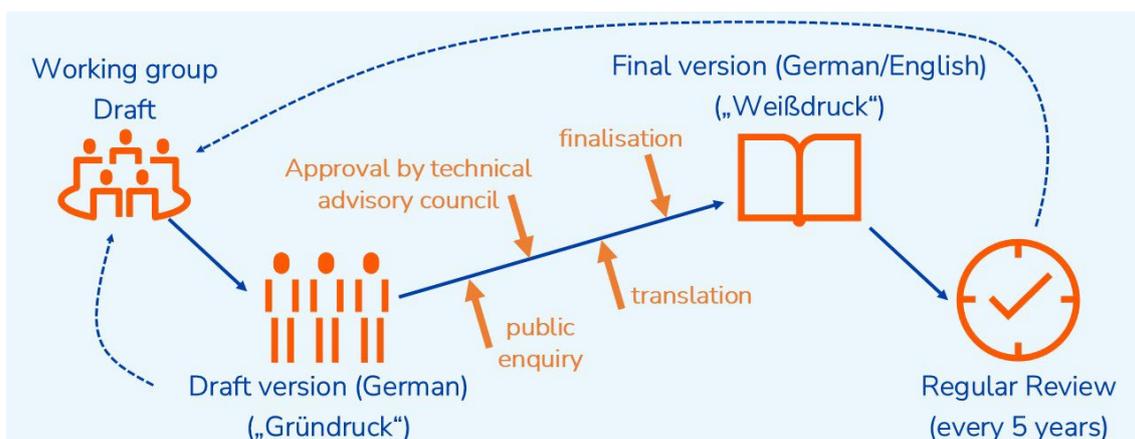


Figure 3: Process followed to develop a standard (own figure).

Conclusion

KRdL develops standards to support governmental initiatives aimed at mitigating air pollution. All standards are developed bilingually in German and English. These standards operationalise EU directives at the national level, while also integrating supplementary national regulatory requirements. The collaborative involvement of diverse stakeholders—including governmental bodies, consultancy experts, industry representatives, research institutions, and non-governmental organisations—ensures the development of technically robust and broadly accepted standards. In the field of air pollution control, the existence of standardised regulations and methodologies is essential to ensure comparability of results and to maintain the integrity and reliability of data quality.

Reference:

VDI 1000 (2021): VDI Standardisation Work – Principles and procedures <https://www.dinmedia.de/de/technische-regel/vdi-1000/333714029> last used 12.08.2025

EU (1996): Council Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management. <https://eur-lex.europa.eu/eli/dir/1996/62/oj/eng> last used 12.08.2025