

## 9th IWA Odour & VOC/Air Emission Conference 26-27 October 2021 Bilbao, Spain

### ABSTRACT

#### Limit values for odour in ambient air – A legal system applied all over Germany

Dr. Ralf Both, Kathrin Kwiatkowski  
North Rhine Westphalian State Agency for Nature, Environment and Consumer  
Protection  
Office: Wallneyer Str. 6, 45133 Essen,  
Mailing Address: Leibnizstr. 10. 45610 Recklinghausen, Germany

Since the early nineteens, several investigations were carried out in Germany to examine the relationship between the odour exposure of residents and the related annoyance degree. The odour exposure was determined as odour frequency in ambient air according to EN 16841 Part 1 (which is mainly based on the former guideline VDI 3940 Part 1) whereas the odour annoyance was assessed according to VDI 3883 Part 1 by face-to-face interviews with residents.

In 1993, the outcome of these results led to limit values for odours in ambient air and to the first version of the German Guideline on Odour in Ambient Air - GOAA.

In 1998, a project started to assess the effect of hedonic tone on the annoyance potential of odours caused by industrial installations. The results show clearly that with methods given in the GOAA the effect of unpleasant and neutral odours can be assessed sufficiently, but, surprisingly, for pleasant odour an adaptation, a bonus, is needed. Finally, a hedonic tone factor for unambiguous pleasant odours together with a method how to investigate if an odour is pleasant, was included in the GOAA in 2004.

In 2002, a German wide project on the annoyance potential of odours caused by livestock farming was initiated. The annoyance degree of residents living around animal farms and their odour exposure was assessed with the same methods already used before. It could be shown that the annoyance potential of poultry odour is higher in comparison to industrial odours and that the annoyance potential of pig odour is lower and fewest for cattle odour. Finally, weighting factors representing the annoyance potential of different animal species are included in the GOAA in 2008 together with a special limit value for villages.

Since 1993, the GOAA provides the methodological and regulatory framework in licensing and surveillance procedures of all kind of installations and, furthermore, is used as assessment criteria in court cases all over Germany. In 2021, the GOAA will get part of the TA Luft, which is legally binding.

In addition to the points mentioned, the presentation will show the practical evidence of the GOAA, their methods and their regulatory system in selected case studies.

Indicate preference of kind of presentation

- Oral Communication
- Poster

Indicate topic of your work for the conference:

- Policy and associated regulations for odour and air quality.
- Odour/VOC measurement, monitoring&sensor technologies.
- Odour/VOC perception, impact, formation and dispersion.
- GHG emissions particulate matter and industrial emissions.
- Source characterization and odour/VOC mapping.
- Odour/VOC abatement, mitigation and neutralization.
- Odour/VOC from waste water, sewer systems and livestock.
- Air emissions and sustainable solutions for waste handling
- Community engagement, social media and citizen action.
- Other (suggest a new topic):

The scientific committee can examine the kind of presentation and session where authors propose to include their works.