

Atmos. Chem. Phys. Discuss., referee comment RC1  
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## **Comment on acp-2021-854**

Anonymous Referee #1

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Referee comment on "Opinion: Insights into updating Ambient Air Quality Directive 2008/50/EC" by Joel Kuula et al., Atmos. Chem. Phys. Discuss.,  
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### **General Comments**

I do not feel that the paper presents a sound or compelling argument for updating the Ambient Air Quality Directive (AAQD). The concepts presented do not appear to be novel, and the conclusions do not appear to be reached from a full appreciation of the context of the AAQD and the reality of what different member states do.

### **Specific Comments**

#### **WHO Guidelines**

The paper is predicated on the Ambient Air Quality Directive (AAQD) being updated in response to the WHO guidelines. A citation for the statement in lines 17/18 and 41/42 would thus be helpful.

#### **Context of the AAQD**

The AAQD has undergone substantial recent consultation, and I believe that the main issues raised in the paper were flagged then. It is unclear how the paper interfaces with this process, and acknowledgement of the consultation may be helpful.

I believe that the paper would also benefit from greater cognisance of the wider context of

the AAQD and how measurements fit within this. Observations are a tool for achieving the broader AAQD aim of improving and maintaining air quality. This is relevant because networks of sensors are already widely and routinely across Europe in the context of improving air quality. Similarly, passive instruments which provide less time resolution at lower cost are also used for this purpose. The section in lines 45 to 75 culminates with the statement that sensors are prohibited from integration into “regulatory air quality management strategies”. It is unclear what this phrase means since the absence of accreditation as either a fixed or indicative method does not (as evidenced by current work across Europe) preclude the use of sensors in air quality management strategies.

## **Sensor Evaluation**

CEN Working Group 24 is currently working on performance specifications for sensors. The gases Technical Specification is currently out for CEN Enquiry - the PM one is underway. These Technical Specifications are for sensor systems only, and do not address networks of sensors - it is likely that will come but at some stage in the future. I do not believe that there is anything within AAQD that precludes the use of sensor systems or networks of sensors if they meet the Data Quality Objectives of any future CEN standards. Lines 78 and 79 suggest a preference for a more streamlined approach to performance testing but does not provide explicit suggestions of how this would work. My understanding is that WG42 is already mindful of the burden on manufacturers for performance testing, but ultimately robust performance testing is essential. The paper would benefit from a clearer explanation of how the current approach might be improved.

## **Minimum number of Sampling Points**

The statement in Line 102 is incorrect. The concept here seems sensible, but the comparison between Helsinki and Lapland seems overly simplistic and some other worked examples would provide a more compelling case.

## **Siting Criteria**

This section (lines 120 to 135) seems to be predicated on the assumption, which is set explicitly at line 134, that siting criteria are necessary because of the scarcity of sites. I believe that this assumption is incorrect. There is significant deviation regarding how instruments are sited across Europe, with different areas having favoured different approaches. It is also far from uncommon for there to be legal discussions (outside of the CJEU) regarding the applicability of data representing a specific location. Increasing site number does not solve systematic differences in siting approach. Neither does placing more reliance on local judgement. Since legal issues surrounding air quality measurements are unlikely to stop soon, increasing the number of sampling points potentially places more emphasis on siting criteria rather than weakening the requirement for them.

## **New Target Parameters**

It is somewhat outside of my area, but I was surprised by the statement in line 144 that there is insufficient evidence on this point. Ultimately, though, I do not think that specifying pollen within the AAQD is aligned with its aims.

As I have noted above, the AAQD is not prescriptive regarding how air quality is improved. Thus, not specifying that specific PM parameters are measured does not preclude this from happening. The absence of any reference to EMEP in this section is surprising. The position put seems to be that the AAQD is the most appropriate place to specify the need to measure additional PM parameters, but I do not feel that this case has been adequately made.