



Brussels, 25 June 2007

Dear Parliamentarian,

**Re: NEGOTIATIONS FOR SECOND READING AIR QUALITY LIMIT VALUES**

The Health & Environment Alliance, the European Federation of Allergy and Airways Diseases Patients Associations, the International Doctors for the Environment and the European Respiratory Society reiterate their position in first reading that:

- Standards must offer a level of protection for all, including those most vulnerable, based on WHO Air Quality Guidelines;
- There must be no weakening of existing standards;
- A new legally binding limit value or strongest possible % reduction of PM2.5 exposure is needed.

Please find in annex answers to some of the questions raised in first reading that we feel have not been dealt with adequately to date by the European Parliament. These include:

- Why over 20 member states have not met the current PM10 standard;
- Highlighting problems of the German regions to meet standards;
- Why the Dutch Government has not supported air quality standards;
- Why it is not possible to trade daily and annual limit values to protect health;
- An analysis of Council and Parliament's positions to date.

We hope that this will aid in re-evaluating your position in second reading.

A recent Dutch study<sup>1</sup> of more than 4,000 infants concluded that young children who live close to busy roads are more at risk of developing respiratory diseases such as asthma, wheezing, ear, nose and throat infections, colds and flu as well as allergic sensitisation. Also, children who live near a major highway are not only more likely to develop asthma or other respiratory diseases, but their lung development may also be stunted. A study from the University of Southern California published in *The Lancet*<sup>2</sup> found that children who lived within 500 meters of a freeway since age 10 had substantial deficits in lung function by the age of 18 years, compared to children living at least 1,500 meters away.

We also bring to the attention of Parliamentarians a study from the International Institute for Applied Systems Analysis (IIASA), who carried out the economic CAFÉ appraisal, which has recently led to a reassessment of the National Emission Ceilings Directive by the European Commission but not the Thematic Strategy on Air Quality<sup>3</sup>. The study combining air and new

<sup>1</sup> M. Brauer, G. Hoek, H.A. Smit, J.C. de Jongste, J. Gerritsen, D.S. Postma, M. Kerkhof and B. Brunekreef Air pollution and development of asthma, allergy and infections in a birth cohort EUROPEAN RESPIRATORY JOURNAL VOLUME 29 NUMBER 5, 26 April 2007

<sup>2</sup> Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study Gauderman WJ, Vora H, McConnell R, Berhane K, Gilliland F, Thomas D, Lurmann F, Avol E, Kunzli N, Jerrett M, Peters J *The Lancet* - Vol. 369, Issue 9561, 17 February 2007, Pages 571-577

<sup>3</sup> ECONOMIC COMMISSION FOR EUROPE, EXECUTIVE BODY FOR THE CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION Working Group on Strategies and Review Thirty-ninth session Geneva, 18-20 April 2007

climate change commitments shows a huge reduction in the abatement costs needed to achieve air quality health standards. This reduction in cost due to a new base line assessment must be taken into account during second reading in the Parliament and discussions with Council.

***These studies and our greater technical understanding are very important as they were not considered in the health impact assessment or economic costing carried out by the Commission and give Parliamentarians new scientific and technical evidence with which to negotiate a second reading.***

Finally, it was reported in the European Respiratory Journal<sup>4</sup> recently that:

*“In conclusion, the proposed [EU] directive does not adequately reflect the best scientific evidence. In the face of the extensive evidence regarding the effects of particulate matter on health, the American Thoracic Society and other health organisations have also recommended promulgation of National Ambient Air Quality Standards (NAAQS) for particulate matter which protect public health with “an adequate margin of safety”. If the proposed [EU] directive is approved in its present form, a reduction of the health impacts of air pollution in Europe will be unattainable.”* Please find attached the ERS editorial.

Yours sincerely,

Genon Jensen



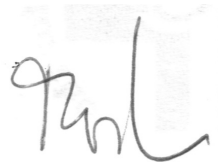
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Health & Environment  
Alliance  
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Susanna Palkonen



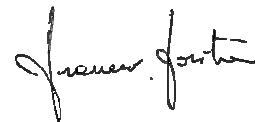
Executive Officer  
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Diseases Patients  
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Francesco Forastiere



European Respiratory  
Society (ERS)  
[www.ersnet.org](http://www.ersnet.org)

c.c. Member State Permanent Representations to the EU

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<sup>4</sup> **Particulate matter, science and EU policy** I. Annesi-Maesano<sup>1</sup>, F. Forastiere, N. Kunzli, B. Brunekreef on behalf of the Environment and Health Committee of the European Respiratory Society Eur Respir J 2007; 29:428-431 Copyright ©ERS Journals Ltd 2007

## **ANNEX**

### ***Existing air quality legislation***

The framework directive on ambient air quality assessment and management was adopted in 1996. It required preliminary assessments of air quality to be undertaken in anticipation of binding air quality limit values and assessment criteria being established in daughter legislation. The first daughter directive was adopted in 1999 and established air quality limit values for particulate matter and nitrogen dioxide amongst other pollutants.

There are two limit values for particles with an aerodynamic diameter less than 10 microns (PM<sub>10</sub>). The first applies to concentrations averaged over 24 hours, whilst the second applies to concentrations averaged over one complete calendar year. These limit values entered into force on 1 January 2005 and the daily limiting concentration can be exceeded on up to 35 days each calendar year. The limit value for nitrogen dioxide is not binding until 1 January 2010. Most Member States have had difficulty to comply with the limit values for PM<sub>10</sub> for a variety of reasons and to varying degrees. The daily limit value has caused the most difficulty.

### ***Approach to air quality management***

The philosophy behind existing air quality legislation is simple. Member States should assess air quality, draw up air quality management plans and implement those plans so as to ensure compliance with the limit values *before* they enter into force. Where, unexpectedly, these air quality plans fail to deliver, the Member States should pursue "*short-term*" actions where there is a risk that the limit value will be exceeded. These short-term actions are different from the far-sighted and preventive air quality plans in that they are intended to counteract unexpected exceedences by applying particularly urgent and potentially disruptive measures<sup>1</sup>.

A recent survey conducted on behalf of the European Commission by the Austrian Umweltbundesamt<sup>2</sup>, revealed that many Member States started the process of assessing air quality, preparing plans and programmes and implementing measures far too late in order to comply with the limit values by 1 January 2005. For example, the air quality management plan for Munich was only adopted in September 2004 and this was typical for many cities in Germany<sup>1</sup>. This ill-preparedness has led, in some cases, to disruptive short term actions in order to avoid the 36<sup>th</sup> daily exceedence and consequent breach of the daily PM<sub>10</sub> limit value.

The UBA study also illustrated the problems that municipal authorities face when implementing the legislation. Often they are obliged to ensure respect for limit values whilst not being given the necessary executive powers to take appropriate measures to address particular sources of air pollution such as road traffic or pollution emitted elsewhere in the country. This demonstrates the need for a more coherent and cooperative approach within each Member State so as to maximise the air quality improvement potential.

### ***Air quality & spatial development***

The issue has been raised that the failure to respect air quality limit values has delayed the implementation of large infrastructure projects. In countries like the Netherlands, compliance with air quality limit values has been treated as an *absolute* pre-requisite before planning approval could be granted<sup>3</sup>. This is not a requirement of Community law but stems from national transposition of the EU's air quality legislation. In other countries, there is no explicit linkage between air quality limit values and planning decisions. Although there is a clear requirement to ensure compliance with relevant air quality limit values in Community law, the means of ensuring compliance are left entirely at the discretion of the Member States. As such, the Member States are free to choose the balance between pollution emitting sources which contribute to observed air quality.

## **Key elements of the Commission's proposal**

The proposal aims to merge 5 pieces of legislation into a single directive in line with the initiative on "better Regulation".

Due to the anticipated problems that Member States were likely to have in complying with limit values, the Commission proposed a postponement of five years for each of the deadlines for compliance. It also proposed that natural sources of pollution could be discounted if they caused exceedences of the limit values.

HEAL has advocated that these natural sources can only be discounted if substantial evidence is brought forward as is already the case for Sahara sand dust in Spain. If this natural fraction is removed the level of health protection can not be diminished, such as enabling more pollution days to take the natural fractions place (the technical and scientific processes in order to achieve this are complex and must be justified in a transparent manner).

In addition, the proposal introduces new air quality objectives for fine particulate matter or  $PM_{2.5}$  (ie. particles with a diameter less than 2.5 microns). The first of these is a "concentration cap" or limit value of  $25\mu\text{g}/\text{m}^3$  averaged over a calendar year. This is to be complemented by an "exposure reduction" where average measured levels of  $PM_{2.5}$  in a country are to be reduced by 20% over a ten year period. The "concentration cap" would apply everywhere whilst the exposure reduction would be based upon measurements in urban background locations away from busy roadsides. Hence the two objectives work together as the exposure reduction would benefit most of the population whilst the concentration cap provides a safety net and protects against unduly high risks from elevated concentrations.

While HEAL realise the public health benefits of the Commission's proposed system in tackling the most polluted areas, HEAL to date have advocated for either a cap and % reduction approach or a level based on WHO Guidelines. The reason we have not advocated strongly in either direction is that currently the WHO guideline "one level" approach offers a much more concrete public information approach that is easily understood while the 20% reduction approach in terms of public information requirements is much less understood in terms of how to communicate with the general public, which we feel is a key consideration particularly for those that rely on the information to make life saving decisions every day.

### **"Trade-off" between daily & annual limit values for $PM_{10}$**

#### ***(a) Daily limit value for $PM_{10}$ – 35 days***

It has been suggested that the 35 days permitted exceedence of the daily limit value for  $PM_{10}$  is arbitrary and cannot be justified.

Air quality limit values which aim to protect health from exposure to air pollution over short durations are usually expressed in terms of a "percentile" concentration. This means that a limit value is expressed in terms of it being attained for a given percentage of the time during a calendar year. This is because it is widely accepted that unusual meteorological conditions may give rise to poor dispersion of air pollutants and unusually elevated concentrations of air pollution. It would be unreasonable and impracticable to require compliance in such conditions.

What air quality managers need is a "stable" objective against which they can compare observed air quality and implement necessary actions to reduce emissions. In practice it is found that if measured concentrations are arranged in increasing size over a year then a high percentile concentration can be identified which is relatively unchanging from year to year. The current daily limit for  $PM_{10}$  of  $50\mu\text{g}/\text{m}^3$  with 35 days permitted exceedence represents the 90<sup>th</sup> percentile concentration. It should be noted that most other parts of the world use 98 or 99 percentiles (corresponding to 7 and 3 days of exceedences per year respectively. This has the advantage of having less uncertainty about how high concentrations are going to be on the 'non-compliance' days. Allowing even more than 35 days per year to be 'non-compliant' will only increase this uncertainty.

A lower percentile could be chosen that would permit a greater number of days when the limiting concentration could be exceeded. This would expose individuals to a greater risk of adverse impacts as explained below. A balance therefore must be struck between providing a high level of individual protection whilst responding to the possibility of unusual meteorological conditions. Assessments of available historical data are not showing that the possibility of the later as relevant for PM<sub>10</sub> is increasing (for example due to climate change), prompting the need to re-examine the percentile chosen.

**(b) Health impacts – short & long term**

There are two limit values for the protection of human health. These address short term exposure over one or more days and longer term exposure over one or more years. The impacts associated with short term and long term exposures are described in the table below.

<b><i>Effects associated with short-term exposure to PM</i></b>
Premature death in people with heart and lung disease
Non-fatal heart attacks
Increased hospital admissions, emergency room visits and doctor's visits for respiratory diseases
Increased hospital admission and emergency room visits for cardiovascular diseases
Increased respiratory symptoms such as coughing, wheezing and shortness of breath
Decreased lung function, lung function changes especially in children and people with lung diseases and asthma
Changes in heart rate variability
Irregular heartbeat
Changes in subtle indicators of cardiovascular health, including levels of C-reactive protein and fibrinogen
<b><i>Effects associated with long-term exposure to PM</i></b>
Premature death in people with heart and lung disease including death from lung cancer
Reduced lung function
Development of chronic respiratory disease in children

Based on these observed effects, the World Health Organization recommends both short-term and long-term air quality guidelines for particulate matter<sup>4</sup>. The relative risks associated with exposure to particulate matter are different for long-term and short-term effects and in relation to mortality and morbidity (sickness)<sup>5</sup>. There are also susceptible and vulnerable groups and individuals such as the elderly, children, those with pre-existing medical conditions, and those who are forced to spend significant time in places with elevated concentrations of particulate matter. Such people have been shown to be more sensitive to health effects from exposure to particulate matter. These people are not expected to respond in the same way to changes in short-term and long-term concentrations of particulate matter in ambient air.

Given that (1) short-term and long-term impacts are different; (2) relative risks are different over the short-term/long-term and for mortality/morbidity; it is not appropriate, to "trade" a stricter annual limit value in favour of a weaker daily limit value without changing the nature and degree of protection offered to the public and sensitive groups in particular.

**Differences between the Council's political agreement and the EP amendments after  
1<sup>st</sup> reading**

**1. PM<sub>10</sub> deadlines for compliance (time extensions)**

<b>Existing legislation</b>	<b>Council political agreement</b>	<b>EP Plenary (amend 81)</b>
1/1/2005	Entry into force of new Directive + 3 years (i.e.1/1/2011*)	Entry into force of new Directive + 4+2 years (i.e. 1/1/2014)

*\*Commission originally proposed a fixed extension until 1.1.2010 subject to certain conditions. Dates 2011 and 2014 are calculated on assumption of 2007 as the date of entry into force.*

**2. NO<sub>2</sub> deadlines for compliance (time extensions)**

<b>Existing legislation</b>	<b>Council political agreement</b>	<b>EP Plenary Amendment 76</b>
1/1/2010	Same as Commission proposal	1/1/2014 without conditions

*Commission originally proposed an extension of five years from the date the limit value enters into legal force (2010) subject to certain conditions.*

**3. PM<sub>10</sub> limit values for the protection of human health:**

**(a) Daily limit value**

<b>Existing legislation</b>	<b>Council political agreement</b>	<b>EP Plenary amendment 82</b>
50 µg/m <sup>3</sup> , exceedance allowed up to 35 days per year	No changes to existing legislation	Exceedance allowed up to 55 days per year

**(b) Annual limit value**

<b>Existing legislation</b>	<b>Council political agreement</b>	<b>EP Plenary amendment 82</b>
40 µg/m <sup>3</sup>	No changes to existing legislation	33 µg/m <sup>3</sup>

*Commission did not propose any changes to the existing legislation or limit values for PM<sub>10</sub>.*

**4. PM<sub>2.5</sub> "concentration cap" (limit value)**

<b>Existing legislation</b>	<b>Council political agreement</b>	<b>EP Plenary (amend 81)</b>
None	Two step approach with a Target Value in 1/1/2010 followed by legally binding limit value from 1/1/2015 (no possibility for additional time extension)	Two step approach with a Target Value in 1/1/2010 followed by legally binding limit value from 1/1/2015 (a time extension is also possible for the Target Value)

*Commission originally proposed a legally binding limit value from 1.1.2010 with a possible time extension of up to 5 years. Target values by their legal nature are only binding in so far as Member States must demonstrate progress towards its attainment but do not necessarily have to comply fully. The concept of extending a Target Value is therefore unclear.*

## 5. PM<sub>2.5</sub> exposure reduction (relative to average concentration in base year)

<b>Baseline average PM<sub>2.5</sub> concentrations 2008-2010</b>	<b>% Reduction Commission proposal</b>	<b>% Reduction EP Plenary amendment 49</b>
Up to 7 µg/m <sup>3</sup>	0%	0%
From 7 to 10 µg/m <sup>3</sup>	<b>20%</b>	<b>0%</b>
From 10 to 15 µg/m <sup>3</sup>	<b>20%</b>	<b>10%</b>
From 15 to 20 µg/m <sup>3</sup>	<b>20%</b>	<b>15%</b>
From 20 to 25 µg/m <sup>3</sup>	20%	20%
Above 25 µg/m <sup>3</sup>	20%	All appropriate measures to achieve the target of 20 µg/m <sup>3</sup> (this part of the EP amendment would be redundant as it overlaps with the limit value obligation)

*There is no existing legislation on this issue.*

<b>Council</b>	
<b>Baseline average PM<sub>2.5</sub> concentrations 2008-2010</b>	<b>% Reduction</b>
Less than 7µg/m <sup>3</sup>	0%
7-13 µg/m <sup>3</sup>	10.5 – 19.5% (sliding scale)
Greater than 13 µg/m <sup>3</sup>	20%

<sup>1</sup> Remo Klingler, *Exceedance of Limit Values for Fine Dust Particles: Violation of Community Law before German Courts*; Journal of European Environmental & Planning Law, 4 (2006) pp 300.

<sup>2</sup> Assessment of Plans & Programmes reported under 1996/62/EC – Final Report under Commission contract 070402/2005/+421167/MAR/C1; J. Schneider et al, Umweltbundesamt (Austria), December 2006.

<sup>3</sup> C.W. Backes, T. Van Nieuwerburgh, R.B.A Koelemeijer; *First Daughter Directive on Air Quality*; European Environmental Law Review, June 2005, pp. 157.

<sup>4</sup> Air Quality Guidelines – Global Update 2005, World Health Organization Regional Office for Europe, pp 277 ISBN 8902192692 (2006)

<sup>5</sup> Air Quality Criteria document for particulate matter (October 2004), US-EPA, pp 9-92 volume 2; <http://cfpub.epa.gov/ncea/cfm/partmatt.cfm> ; and National Ambient Air Quality Standards for Particulate Matter – Final Rule; Federal Register Vol 71, N° 200, pp 61144, October 17 2006.