

Interactive comment on “Evolution of NO_x emissions in Europe with focus on road transport control measures” by V. Vestreng et al.

Anonymous Referee #2

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Vestreng et al., in their attempt to describe historical developments of NO_x emissions from road transport in Europe, combine very interesting results from evaluating emission data with a consistent and convincing analysis of the underlying causes for the trends observed. They compare their results also to other available data (other inventories); unfortunately no fully independent data (e.g., ambient measurements) are used for comparison, but this is acceptable as quite difficult to achieve specifically for road transport. (The authors even do refer to several published studies by EMEP confirming agreement of EMEP inventory trends to measurements).

Specific Comments:

Large parts of the paper deal also with other emission sources. These parts give rise

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to a number of questions:

Are data before ca. 1950 useful? Note that the longest "regime" mentioned in the manuscript is the period 1880-1950. Isn't it just lack of data that makes the period look homogeneous?

Why does one of the most important abatement technologies find no mention, i.e. NOx reduction by adding NH3 in the stacks of industry and power plants? It is clear from Fig. 1 that since 1975 the non-transport NOx emissions have been decreasing continuously in OECD Europe.

These questions should be resolved, or the topics dropped for the final version of the manuscript.

Recommendation:

Focus on transport NOx and on the period after 1950 (or even after 1980). Other NOx emission sources should be treated as a background only, with reference to the appropriate documents (EURONOX, RETRO) currently missing. This will also allow considerable shortening of the paper, which is urgently needed.

Some additional questions:

In 2000-2005 emissions decrease by 11% over 5 years compared to 23% over the period 1990-2000: shouldn't this be regarded a consistent trend rather than a change? (page 10720 line 18)

While it is conceivable that Luxembourg and Austria sell a considerable fraction of their fuel into their much larger neighbour countries – how can Ireland do that to small Northern Ireland? (page 10720 line 14)

How can new regulations on stationary sources have a "more instant effect" on NOx emissions than similar regulations on mobile sources, when power plants have a lifetime of 20 years at least and commissioned installations maintain their permit? (page

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10728 line 14)

What is the reason for the difference between the sum of emissions from Europe (Fig. 4/Table 3) and the total of East and West Europe (sum of Fig. 1 & Fig. 2)? For Transport, this is 9 Tg vs. roughly 7 Tg, for total emissions 25 Tg vs. 18 Tg for the year 1985.

Why are off-road emissions "exploding" in 1975 at the expense of residential emissions? (Fig. 4) - or is this just an artifact (no answer needed if recommendation to focus on transport emissions is observed).

The authors may also wish to find user friendly ways of representation of Fig. 3 (hatched area) and Fig. 7 (complex graphic is extremely difficult to read due to arbitrary sorting of countries).

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 10697, 2008.

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