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Comment

## ***Interactive comment on* “Particulate emissions from residential wood combustion in Europe – revised estimates and an evaluation” by H. A. C. Denier van der Gon et al.**

### **Anonymous Referee #1**

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The article “Particulate emissions from residential wood combustion in Europe – Revised estimates and an evaluation” provides an interesting study of a significant emission inventory sector used in chemical transport modeling. The key improvements to the emission sector include the inclusion of semi-volatile organic carbon in the emission factor used to estimate the particulate matter; new approaches to spatially distribute the RWC emissions across the different EU countries and between urban and rural locations. Evaluation of the results based on specific measurements of particulate matter at select locations shows the improvements compared to an earlier inventory. This article is well-written and I recommend this article for publication.

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Some specific comments: 1) I would like to see some discussion of how well the CTM models simulate the boundary layer during cold calm night time conditions when residential wood combustion emissions tend to be maximum. Do the CTM's overestimate or underestimate the PM concentrations in these cases? 2) The abstract is a bit vague when referencing the different emission inventories (i.e. use of the word "new" somewhat overused in a "new inventory". Perhaps a better label might be employed and referenced in the abstract.

Technical Comments: 1) Wood use factor units are sometimes referred to as GJ inhabitant<sup>-1</sup> or GJ person<sup>-1</sup> in the article and supplement. Use consistent units throughout.

2) The last sentence in the conclusions section "For a global assessment we would have to more carefully study the origin of emissions factors used, but global OA emissions from biofuel use could also increase significantly if condensable PM is fully taken into account." Does not add much to the article, is a bit confusing and seems like it doesn't belong to the rest of the paper. Perhaps it might be removed.

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Interactive comment on Atmos. Chem. Phys. Discuss., 14, 31719, 2014.

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