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Atmospheric Chemistry and Physics Discussions

Interactive comment on "The effect of climate change and emission scenarios on ozone concentrations over Belgium: a high resolution model study for policy support" *by* D. Lauwaet et al.

Anonymous Referee #2

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The paper titled, "The effect of climate change and emission scenarios on ozone concentrations over Belgium: a high resolution model study for policy support" provides results from a series of numerical experiments at high resolution over the country of Belgium. The goal of the numerical experiments is to provide policy support on the impact of climate change on future year air quality, specifically ozone. Each experiment was a 10 year simulation in which the goal was to capture average conditions and not actual day to day changes. The scientific value of this paper is noteworthy because of the value of high resolution (3km) compared to 25km is explored. The results are

consistent with our understanding of Ozone formation chemistry.

There are a number of minor points that the authors should consider which are noted below:

(1) Abstract, page 1762, lines 3-5: The second sentence could be worded better: "A high resolution (3km) modeling experiment is employed to provide guidance to policy makers about expected air quality changes in the near future (2026-2035)" (2) Abstract, page 1762, Lines 19-21: The sentence is unclear and needs to be reworded (3) Page 1762, line 23: "Belgium ranks among the areas in Europe with the highest levels of air pollution, failing . . ." (4) Page 1762, Line 26: "As the effects of global climate change are increasingly being felt in Belgium, policy makers . . ." (5) Page 1763, Line 8: recommend changing to"The study focuses on impacts in the near future (around 2030) since Belgian policy makers, stakeholders in this project, have indicated that this is more relevant than projections to more distance future (e.g. 2100) as is common practice in scientific literature." (6) Page 1763, Line 18: Change "learn" to "teach" (7) Page 1763, Line 24: Delete "possible" (8) Page 1765, Line 7: Change "going towards" to "uses" (9) Page 1766: Line 5. Please indicate the resolution of the SPOT VEGETATION and the CORINE datasets. (10) Page 1766, Line 26: Delete "that is applied" (11) Page 1767, Line 10: Describe in more detail the implementation of the emission heights for the different sources since it was different than that given in the reference (12) Page 1768, Line 20: Indicate that the bilinear interpolation adds additional uncertainty to the experiments

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 1761, 2014.