Atmos. Chem. Phys. Discuss.,
https://doi.org/10.5194/acp-2017-796-RC2, 2017

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Low Carbon Energy Generates Public Health Savings in California" *by* Christina B. Zapata et al.

Anonymous Referee #2

Received and published: 21 November 2017

This manuscript uses an emission model to predict emissions of pollutants associated with two scenarios, including a greenhouse gas mitigation scenario, and then uses a chemical transport model to evaluate the changes in PM2.5 and ozone and its public health savings. In general, the manuscript is well organized and written. It is a good template for other related environmental health studies, so major concern is some descriptions of methodology is a bit difficult to follow. I would suggest the authors add more details.

Specific comments:

1. In the abstract, the authors mention that meteorological inputs for the year 2054 were generated under RCP 8.5 future climate, but in the manuscript there is no description about how this was done. In my understanding, GCM simulations under RCP8.5

provide boundary and initial conditions for WRF here, but different GCMs would show huge differences, which will significantly affect the results shown in this paper. I would suggest the authors add more description here about which GCM results are used and acknowledge the limitations.

2. Line 123-126 is very confusing. Please clarify why 2054 is selected.

3. Sect. 2.1: it would be better to provide spatial plots of emission changes. Is spatial allocation of emissions expected in future scenarios in the emission model?

4. Sect. 2.5: The population projection is oversimplified here. The health benefits would largely rely on changes in population. Please provide spatial map of changes in population and add more discussions on how the results are affected by population.

5. Line 178-179: The assumption of 3ug/m3 for PM2.5 and 35ppb for ozone is not solid here, which can be tuned to change the conclusions. If you use a higher threshold here, the public health benefits could be lower than cost estimates. Please provide more evidence of why these values are used.

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