

Comments for Paper entitled “Sensitivity of climate effects of hydrogen to leakage size, location, and chemical background”

## General comments

Authors have addressed all comment and I think makes the paper much clearer and easier to follow.

I’ve added a couple of specific comments to clarify a couple of points which aren’t immediately clear from reading through.

Overall, I find the manuscript fit for publication and think it will be a valuable asset to the hydrogen community.

## Specific comments

line 112: For clarity, please specify the impact of NO<sub>x</sub>:CO to OH e.g. a higher/lower NO<sub>x</sub>:CO ratio corresponds to a higher/lower OH availability

line 195: Specify these are globally averaged hydrogen concentrations

line 208: I think it’s worth adding a line to say that you had calculated the perturbation lifetime with respect to atmosphere and soil separately as this is not immediately clear until after reading the table.

## Technical comments

lines 317: “Derwent also investigated”