

The revised manuscript addresses nearly all the comments in my original review. I have concerns about some of the statements in the paper related to using the rigid lid assumption in industrial/engineering wind farm flow models, but these are not central to the paper and do not require changes. I support publication after some very minor fixes.

Main comment: As requested, the author now includes a discussion on the use of the rigid lid (RL) assumption in industrial/engineering wind farm flow models. I infer from the text that the author and I have different views on the soundness of this modeling choice. It is possible that these differences may amount to little more than a disagreement on emphasis. Nevertheless, at the risk of belaboring a point made in my initial review, I would like to write a few more words on the matter.

In the absence of a gravity wave formulation, I would agree that including the rigid lid in an engineering model, such as that from Gribben and Hawkes, is probably better than not having it. However, the results of this paper and my own experience indicates that there is high risk that this modeling assumption will yield large errors. Figures 3 and 4, which compare RL and gravity wave (GW) model results, suggests that the predicted energy yield would frequently be very different between the two model types. The author makes a similar point in the Discussion section, but also, separately, in a response to my initial review, he points out that while GW is more likely to better represent reality, we cannot be sure of it. Fair point. Nevertheless, I believe the large quantitative differences in the results from the two models suggest an enhanced risk of large errors in models using RL, and this risk should be investigated, for example, by using numerical experiments executed with higher fidelity models. Although this last comment is not directly relevant to the paper under review--and does not necessitate more edits--the importance of this subject is large enough within the wind energy industry that I felt I needed to put this point in writing.

Minor comments:

Line 22, third line of the abstract: The word “modify” has been replaced with “slow”. There are two issues here. Firstly, the change was not redlined. The main changes to the manuscript have been redlined, but many smaller changes have not. It would have been easier to review this revision if more of the changes had been redlined. Secondly, I think the original wording (“modify the wake recovery”) is better. The pressure gradients may “slow the wake recovery” downstream of the wind farm, but not within the wind farm, where these pressure gradients can speed the wake recover.

Line 98: “farm area” is a bit ambiguous. I suggest adding “planform” before “farm”.

Lines 52 and 53: Fig 3b should be Fig 4b.