

Wind Energ. Sci. Discuss., referee comment RC2
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Comment on wes-2022-16

Anonymous Referee #2

Referee comment on "Offshore reanalysis wind speed assessment across the wind turbine rotor layer off the United States Pacific coast" by Lindsay M. Sheridan et al., Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2022-16-RC2>, 2022

The authors' work aims at providing more reliable data for the analysis of offshore wind resources – a generally very welcoming undertaking. Likewise is the attempt of making more – and better – use of reanalysis data for that purpose also highly appreciated.

However, as always when using model output, validating the results is a necessary but many times difficult process. The lack of sufficient in-situ measurements of offshore wind speeds makes this an especially challenging task.

Now, how do the authors tackle this problem? The manuscript is kind of a mixed bag. I did not identify any technical errors – that's good news. But the nature of the manuscript is very descriptive, consisting mainly of 'naked' results of comparison/deviations of the different data sets. This is in part due to the fact that before making thorough meteorological analyses the data have to be spread out and subjected to a first statistical analysis. Here, I acknowledge the authors' achievement of providing a lot of data for comparisons of a few offshore wind measurements with results of most of the available reanalysis models. This is indeed a bulk of work and – to my knowledge – has not been done before that extensively. So, the first step has been made. The other side of the coin is a substantial lack of interpretation/analysis of the results with respect to the physical processes determining these results. This however is necessary in order to make use of the authors' results in a more generalised manner.

So, in the end my recommendation is to accept the paper as it is having in mind that the work presents a very good basis for further investigations but is still incomplete. The authors are encouraged to proceed to the next stage of interpreting the results and provide meteorological explanations to the partially very large discrepancies between measurements and modelling results. This is what the scientific community requires.