

Interactive comment on “Offshore wind power intermittency: The effect of connecting production sites along the Norwegian continental shelf” by Ida Marie Solbrekke et al.

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1 General comment to reviewer # 2

We would like to thank reviewer #2 for his/hers comment on the manuscript with the working title of “Offshore wind power intermittency: The effect of connecting production sites along the Norwegian continental shelf”. Please see the response below (new text added to the paper is in italic).

C1

1.1 Response to comment from reviewer #2

RC1: Regarding the pairwise correlation of the sites the authors conclude that for distances larger than 800km the correlation stops to decrease. In this case the authors should also include a fit function into fig. 4 which takes this into account. Can the authors give a physical explanation for this effect?

AC1: Thanks for pointing this out. We agree that there is no reason why the correlation should cease to decrease with increasing separation distance. The section has now been changed to the following: “*Fig. 4 illustrates how the correlation between station pairs changes as a function of the separation distance. The correlation drops off quickly as the distance (x) between the sites increases. After $x \approx 800$ km the decrease in correlation with distance is reduced to 0.1 and continues to decrease slowly with increasing separation distance. It is expected that the correlation between site-pairs will approach zero when the separation distance become large enough, meaning that the wind at these sites are completely independent. Some site-pairs can even have slightly negative correlation. Reaching this slowdown in the relation between the correlation and the separation distance after $x \approx 800$ km indicates that combining sites outside a radius of $x \approx 800$ km for further variability reduction has almost a negligible effect for the length and time scales considered here. Nevertheless, the correlation coefficient never drops to zero, or below zero, over the range of the data covered in this study, indicating that none of these station pairs will either anticorrelated or completely independent production ($r \leq 0$).*”

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C2