

Wind Energ. Sci. Discuss., referee comment RC2  
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## **Comment on wes-2022-73**

Anonymous Referee #2

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Referee comment on "A large-scale wind turbine model installed on a floating structure: experimental validation of the numerical design" by Federico Taruffi et al., Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2022-73-RC2>, 2022

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The manuscript provides an experimental validation of the design of a large-scale wind turbine model installed on a floating multipurpose platform. The paper is clear, relevant, and scientifically sound. Some questions/comments are added below to further improve the quality of the manuscript.

- The paper could say a few more words on the overall advantages/disadvantages of the multiplatform concept. For example, are there any studies that showed the potential benefits of combining floating wind and wave energy converters from a system point of view? And also with aquaculture?

- Line 39: The paper mentions that wave-tank tests have been performed at ECN. Can the authors comment on how the present 1:15 model scale results compared to the small-scale results? This would help support the statement that "large-scale models are technologically very similar to prototypes and can reduce scaling effects". Alternatively, the authors can point to a reference showing this.

- Page 3 Line 82: the choice of the airfoil is justified by the fact that it is suitable for low Reynolds number applications. However, the environment here is more realistic (i.e. higher Re) than in a wind-tunnel environment. Can you give the typical Re values encountered here and explain why the low-Re airfoil was still a good choice?

- Page 4 L 122. The goal is to investigate the effect of floating motions on the turbine power production and structural health. However, because the platform is quite large compared to conventional floating wind turbines, the motions are expected to have a

much smaller impact on the turbine. Can the authors comment on how the floating motions of this multiplatform differ from those of a floating wind turbine without aquaculture/WEC? Also, are scaling effects, i.e. between full scale and a 1:15 model, expected to be larger/smaller/identical for a floating wind turbine when the floating platform is smaller?

- Pages 7-8. Can the authors provide more information on the post-processing, i.e. filter used, decrement procedure? Alternatively, the scripts could be openly shared so that the procedures can be reproduced.

- Fig 15: What is the peak at around 3.7Hz?

## **Typos**

Line 348: Once that --> Once

Line 371 & 427: punctuation missing