The manuscript does a very good job presenting a novel method for floating offshore wind farms design and optimization. This is a novel and relevant work, which sheds light on different aspects of a multidisciplinary problem. The paper is in general clear and well-structured. The method is detailed and fills many gaps between fixed bottom and floating wind farm designs.

General comments:

- The paper is lacking details on how the AEP was calculated. Which wake model was used and how it was set?
- Is there a plan to make the methods and the code used open-source and publicly available?
- The conclusion should be covering all aspects of the paper and can stand as a standalone text, which explains the paper objectives, methods used and goes over the results. This is currently not the case.

Specific comments:

- Line 24: typo
- Figure1: Use the turbine diameters to normalize the x-y axis (Please do the same for similar Figures such as Figure 9). I also recommend adding a grid to both subplots.
- d mooing minimum, is not defined till the case study section. Why is the value of 80 meters is taken into account? Is it a case specific value? The API standard specifies 20m distance between mooring lines is enough.
- Equation 7: Clarify how AEP losses were calculated.
- Line 117: Did you include the effect of the FOWTs while calculating the AEP? If not you have to clearly state it in the text.
- Line118: What is the maximum displacement allowed by the mooring system design in this work? At which wind direction does it happen?
- Figure2: Please add a legend to the subplot on the right. Also add a title to the color bar in the subplot on the left and indicate the units used (m\km?)
- Line 156: You state that the algorithm produces better results than many other heuristics. Is there any literature review to support you statement?
- Figure 3: Some parameters in the legend were never clarified or mentioned in the text.
- Equation 11: This is used to calculated total length after the routing? I feel this function can be only applied between two wind turbines so N is a bit confusing. Can you clarify?
- In line 220 explaining figure 5. The number of OSS changes. Is this an input to the optimization or is it an output of the optimization? If it is an input do you think it affects your results? Why did you decide on two different values for OSS?
- Figure 9: Why is the gridded layout only within the buffer boundary? This means that your turbines for the gridded layout is more closer to each other which will affect the AEP and increase the losses of this layout?