We appreciate the kind comments and interesting points raised by the reviewer. We have answered their comments below.

1. Results should be summarized in the abstract:

   We agree. We are now more specific in the abstract regarding the results found in the paper.

2. Line 27, it is not precise to say increasing with the rotor diameter, but better with the tip speed.

   We agree with the reviewer that increasing the tip speed increases the wind turbine noise, and usually larger wind turbines have higher tip speeds. However, the tip speed is also related to the operational conditions, since a defined wind turbine could increase the tip speed (increasing the rotational speed). Additionally, increasing the wind turbine diameter increases the noise (even with the same tip speed) because of the larger span of the surface that is generating noise. Therefore, we do not believe that it is not precise to say that wind turbine noise increases with rotor diameter.

   We think that we could make this statement a bit clearer, and we changed the statement in the text, specifying the contribution of the tip speed and the rotor diameter.

3. Line 43, not only mechanical noise, also the structure borne of aerodynamic noise.

   The reviewer is totally right. We changed the sentence.

4. Line 91, “the transition was fixed at 5% of the chord”, why didn’t you use free-transition?

   It is an excellent question. Due to the high Reynolds number of wind turbines, the boundary layer transition occurs near the leading edge. However, XFOIL is not very precise in calculating transition. Therefore, we believe that the most correct approach to calculate the boundary layer parameters for the wind turbine with XFOIL is setting a forced transition close to the leading edge, which is close to reality.

   We have also checked the influence of the location of the forced transition (up to 20% of the chord), and the far-field noise of the turbines matches within 1 dB.

5. Figure 1, caption: Aerodynamic noise includes more than leading-edge and trailing-edge noise.

   Yes. You are right, we meant the noise sources we considered predicting the wind turbine noise, which are also the most important. We have updated the label of the figure.

6. Line 95: check the Doppler effect factor for Spp.

   We believe the reviewer means the factor (w_e/w)^2. However, we do not exactly understand what the author means by check.

   If the reviewer means the exponent 2, there is a discussion in the literature regarding the exponent of the Doppler effect, whether it should be 1 or 2 (see Y. Rozenberg, M. Roger, S. Moreau, Rotating blade trailing-edge noise: Experimental validation of analytical model, AIAA journal 48 (5) (2010) 951–962 and S. Sinayoko, M. Kingan, A. Agarwal, Trailing edge noise theory for rotating blades in uniform flow, Proceedings of the Royal Society A:

Mathematical, Physical and Engineering Sciences 469 (2157) (2013) 20130065). However, factor 2 is the most common approach.

If the reviewer does not refer to this factor, we kindly ask for a more detailed explanation of what should be checked.

7. Line 104, "at the same relative location with respect to the observer", not a precise estimate.

   What we mean by this sentence is that, assuming a wind farm, there would be a unique global observer for the wind farm. However, this observer would be different for each turbine, considering that the noise is calculated using the origin of the coordinate system in the turbine hub. Therefore, we would need to calculate the coordinates of the global farm observer for each turbine. To do so, we would need to specify a layout, which is out of the scope of this research.

   We have changed the sentence to be more specific:

   To compute the noise generated by a wind farm, we assume that each turbine acts as an uncorrelated noise source with equal intensity. he observer for each turbine is the same, using as the origin of the coordinate system the hub of each turbine. This results in adding a factor of 10\log_{10} N, where N is the number of wind turbines.

8. Figure 2, the symbol ϕ is not consistent with the one in the main text.

   We apologize, we used the symbol ϕ given by defect in the journal's template. For the final version of the manuscript, we will change the figure to have a symbol that is closer to the Latex version of the main text.

9. Line 153, d_1 or d_2?

   We appreciate the carful revision. Indeed, there was a mistake.

   We meant r from the formula right before. Later in the sentence we specify that for the air-water transmission $r = d_1$. We updated the text as follows:

   where α_a is the attenuation in dB/m r is the distance from the noise source to the observer. For the Air-side observer, r is the linear distance from the noise source to the observer, and for the Water-side observer, r is the distance from the noise source to the interface observer d_1 in Figure 2).

10. Line 155, how do you consider the attenuation of sound in water?

    The attenuation of sound in water is very small compared to the attenuation in air. In the water, sound attenuates between 0.1 and 1 dB/km in the range of 1 to 10 kHz. As the observer is relatively close to the wind turbine, we do not consider the attenuation of sound in water. However, this can be easily implemented. We can update the results for the final version of the paper.

11. Table 1, the numbers for IEA 22MW are different from the original definition.

    We double-checked the nominal condition, and indeed, there is a mismatch between our data and the current published operational conditions. We updated the results with the nominal conditions reported in Zahle, F., Barlas, T., Lønbæk, K., Bortolotti, P., Zalkind, D., Wang, L., Labuschagne, C., Sethuraman, L., Barter, G., and Marten, D.: IEAWindTask37/IEA-22-280-RWT: v1.0.1, https://doi.org/10.5281/zenodo.10944127, 2024b.

12. Line 176, the definition of low-frequency sound is different from the standard definition.

    We agree with the reviewer. We meant in the low-frequency range of the total range we are analysing, not the standard definition. We changed the sentence.

13. In figures, “Noise Amplitude”, should it be “Overall Sound Pressure Level”?

    It should be “Sound Pressure Level” instead of “Noise Amplitude”. We have changed the figures. In the directivity plot (Figure 6), we used “Overall Sound Pressure Level (OSPL)” because it is integrated over the entire frequency range.