Referee follow-up on wes-2020-113 "Low-level jets in the southern North Sea: implications for wind turbine performance using Doppler lidar observations."

Summary:

The research described in the manuscript investigates low-level jets (LLJs) at Dunkerque, a coastal city on the southern North Sea. The main data were obtained from lidar observations up to an altitude of 1500 m above the ground level. The researchers calculated the atmospheric stability conditions using measurements from a sonic anemometer. They also measured temperatures at two sea points to calculate the land-sea gradient.

Results were compared to several studies in the area, including a similar study previously performed at the same location (Dieudonné et al., 2023). One of the main contributions of the study is that they extended the observational range up to an altitude of 1500 m, indeed multiplying by five the observational range in the previous study (up to 300 m). Consequently, they were able to obtain more accurate results, as they could account for high altitude LLJs previously missing. The authors also used innovative means to compare the impacts on wind turbines of LLJ and non-LLJ winds.

Recommendation:

After carefully reviewing the authors' responses, I find that they have satisfactorily addressed my questions and recommendations regarding the previous version of the document. My recommendation is positive for publication, once the following concern is addressed:

Lines 147-150: "Three wind turbine models … (Chirosca et al., 2022, https://www.4coffshore.com/), … (Global 150 Wind Energy Council, 2024, p. 53, years 2023 and 2030).

Citations in this paragraph are problematic:

- There are two references combined in the in-text citation (Chirosca et al., 2022, https://www.4coffshore.com/). The format of this single in-text citation is incorrect. In Copernicus style (and most author-date styles), multiple references at the same position are placed in one set of parentheses and separated by semicolons (e.g., Smith, 2009; Mueller et al., 2010). The authors should confirm this in the official Copernicus

guidelines. Additionally, the web link belongs in the reference list at the end of the document (with a proper entry, including access date if applicable), while the in-text citation would typically use the corporate author (e.g., 4C Offshore, year).

- https://www.4coffshore.com/ links to the homepage of a commercial website (now rebranded as TGS | 4C). The information on the homepage is volatile/dynamic (e.g., real-time project statistics and market data that change frequently) and currently does not support the information/claims presented in the manuscript. The authors should consider whether this is a suitable reference or if they can provide a more direct/stable link (e.g., to a specific archived report, dataset entry, or permanent URL).

- By contrast, Chirosca et al. (2022) is a legitimate scholarly reference, with Table 1 listing wind turbine types operating in the North Sea.

- The citation supporting all the claims in this paragraph (and thus in Table 2 of the manuscript) is (Global Wind Energy Council, 2024, p. 53). Indeed, the figure on page 53 of the report allows derivation of all the values in Table 2. It should be noted, however, that the correct citation format is (Global Wind Energy Council, 2024, p. 53), not (Global Wind Energy Council, 2024, p. 53, years 2023 and 2030).