This manuscript presents a valuable contribution to the field of energy meteorology by integrating ground-based observations with ERA5 reanalysis through a spatially adaptive optimal interpolation scheme. The resulting dataset includes both standard meteorological variables and a well-defined set of high-impact weather events tailored to power system operations. The topic is highly relevant to the growing field of energy meteorology, and the dataset has clear potential value for both research and practical applications. Overall, this manuscript is well-structured, and the authors have made a reasonable effort to compare their product against existing datasets. I recommend publication of the manuscript after addressing the following issues.

1. Several high-impact weather events are defined using hourly or sub-daily thresholds (e.g., "hourly wind speed ≥ 25 m $s^{-1}$" for cut-out wind speed; "sustained (≥ 3 h) wind speeds ≥ 4 m $s^{-1}$" for galloping). However, the CNPS-Met dataset is provided at daily resolution. It is not clear that how these sub-daily criteria are applied to daily-averaged fields. This discrepancy could lead to systematic undercounting or misclassification of events. The authors should clarify the methodology used to derive daily event flags from sub-daily definitions.

2. The spatially adaptive optimal interpolation scheme adjusts the influence radius based on station density, but the manuscript provides no spatially explicit uncertainty estimates for the analysis fields. Users of the dataset would greatly benefit from information on where the dataset is most and least reliable. Therefore, the authors should consider providing analysis error variance fields or a similar uncertainty metric as part of the dataset.

3. The manuscript introduces an improved OI scheme, which is a positive contribution. However, it lacks a direct comparison with a traditional OI baseline using a fixed influence radius. A comparison between the improved OI and traditional OI for a representative period is suggested.

4. The dataset ends in 2016, nearly a decade ago. Given the rapid expansion of renewable energy infrastructure in China and the increasing frequency of extreme weather events in recent years, a dataset that is regularly updated would be more

valuable for long-term applications. It is suggested that the authors consider treating this as a living dataset that can be continuously extended in the future. To reflect its potential for ongoing updates, it may be preferable to remove the time range from the title.

5. Line 49: The number of ground-based stations is stated as “exceed 2400” in the introduction but later given as 2598 in the methods; please reconcile.

6. Line 58: “IPCC AR6” is cited without a complete reference; provide the full citation (e.g., IPCC, 2021).

7. Line 69: “It has at spatial resolution” — should be “It has a spatial resolution”.

8. Line 161: “three-sigma rule method” — clarify whether this was applied to daily values or to the full time series; also state how many records were excluded.

9. Line 237: “statistics for verification” — consider renaming to “Evaluation Metrics” to better reflect the content.

10. Line 249: “referred as” — should be “referred to as”.

11. Figure 7: The caption states “intensity extremes (90% confidence level)” but does not explain the statistical method used; add a brief explanation.

12. Line 431: “Northern Tibet Plateau”, consider “northern Tibetan Plateau” for consistency.

13. Line 460: “relative weak” — should be “relatively weak”.

14. Line 503: “there is a pronounced ‘weather dependency’ and ‘system vulnerability’” — the use of quotes is inconsistent; consider rephrasing.