Comments on “A long-term wind speed ensemble forecasting system with weather adapted correction”.

**General comments:**

Accurate numerical forecast of wind speed is critical to wind power generation. In this manuscript, the authors presented a wind speed ensemble forecasting system and demonstrated substantial improvement of wind speed forecast with a posterior bias correction method over the coastal regions of East China. First, they identified 18 typical weather types from the 8-year NCEP operational Global Analysis data for the studying region. Then, they developed a wind ensemble forecasting system based the Weather Research & Forecasting (WRF) model, and refined the average bias correction by introducing a parameter Weather Type. The refined weather adapted bias correction scheme was used to quantify the statistical correlation between numerical weather prediction errors and governing weather types. The results show that the ensemble forecasts with weather adapted bias correction have the best performance on wind speed forecasts. The study provides a very useful and feasible way to improve wind speed forecast and the topic represents a great practice interest in wind power industry. Overall, the manuscript is clearly presented. However, some additional information is needed to better understand how this ensemble forecasting system with refined bias correction can improve the wind speed forecasts. The manuscript is recommended for publication by Energies with necessary revision.

Specific comments:

1. More detailed descriptions about bias correction are needed since it is the key to improve ensemble wind speed forecast in this study. Especially, it is not well illustrated how the statistical correlation between forecast errors and weather types is used to correct the original numerical forecast.
2. Eighteen weather types were identified from the 8-year NCEP reanalysis data. It is better to add a summary of the major features of each weather type and performance of the forecasting system on wind speed forecast for each weather type.
3. I am not sure that Section 3.1 is placed in the right place or not. I do not think it is part of Statistical Correction.
4. P1/L18: Change “The forecast system” to “The forecasting system” for the consistency with other places.
5. P2/L77-79: delete since they do not provide any additional information.
6. P2, Section 2.1: More details about model configuration are needed.
7. P3/L101-105: Define the full names of MM5, RUC, and MYJ. Make sure define a full name of an abbreviated term when it appears at the first time.
8. P4/L121-122: How many weather types were found during the training period from Sept. 2013 to Aug. 2014? And how the correlation obtained from the historical data training was used to correct the original forecast?
9. P4/L125: change “LST 08:00 am” to “08:00 am LST” and change “UTC 1200“ to “1200 UTC”. Please define LST and UTC.
10. P4, Section 3.1: move to Section 2 since it is not part of statistical correlation.
11. P6: More explanation is helpful. Why do ensemble forecast errors have higher correction with weather types than the single forecast?
12. Figure 2: Is Figure 2 discussed in text?
13. Discussion of Figure 5 should be completed in Section 4 rather than Section 5.