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 over the coastal regions of East China. They identified 18 typical weather types from the 8-year NCEP operational Global Analysis data for the studying region, 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 indicate that the ensemble forecasts with weather adapted bias correction have the best performance on wind speed forecast. 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 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. P2/L77-79: It is suggested to delete since they do not provide any additional information.
5. P2, Section 2.1: More details about model configuration are needed.
6. Why does the forecasting system only output predictions for the period of 28-52h? How many hour simulations were conducted each day?
7. P1/L18, change “forecast system” to “forecasting system” to be consistent with other places of the manuscript.
8. P2/L81-82, delete “been well known and”.
9. P3/L93, change to “… used the NCEP Global Forecasting System data as …”.
10. P3/L101, please define “MM5” and “RUC”, and check similar problem in other places.
11. P4/L114-118, it is unconvincing to link the flat terrain in coastal regions with the statements in this paragraph.
12. In this study, the authors identified 18 weather types from the NCEP reanalysis data during the period of 2005-2012, and established a statistical correlation between weather types and ensemble forecasts from Sept. 2013 to Aug. 2014, and used this correlation to correct model original forecasts.

In this manuscript, the authors presented a newly developed weather adapted bias correction method to improve the wind speed forecast of an Ensemble Forecasting System.