CORA Cork Open Research Archive
Cartlann Taighde Oscailte Chorcaí

Title	Usability and challenges of offshore wind energy in Vietnam revealed by the regional climate model simulation
Authors	Doan, Van Q.;Dinh, Duc V.;Kusaka, Hiroyuki;Cong, Thanh;Khan, Ansar;Toan, Du Van;Duc, Nguyen Dinh
Publication date	2019-05-30
Original Citation	Doan, V. Q., Dinh, V. N., Kusaka, H., Cong, T., Khan, A., Toan, D. V. and Duc, N. D. (2019) 'Usability and Challenges of Offshore Wind Energy in Vietnam Revealed by the Regional Climate Model Simulation', SOLA, 15, pp. 113-118. (6pp.) DOI: 10.2151/SOLA.2019-021
Type of publication	Article (peer-reviewed)
Link to publisher's version	https://www.jstage.jst.go.jp/article/sola/15/0/15_2019-021/_article - 10.2151/SOLA.2019-021
Rights	©The Author(s) 2019. This is an open access article published by the Meteorological Society of Japan under a Creative Commons Attribution 4.0 International (CC BY 4.0) license. - https://creativecommons.org/licenses/by/4.0/
Download date	2026-11-17 11:48:09
Item downloaded from	https://hdl.handle.net/10468/8844



University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

SOLA, 2019, Vol. 15, 113-118, doi:10.2151/sola.2019-021

Supplement

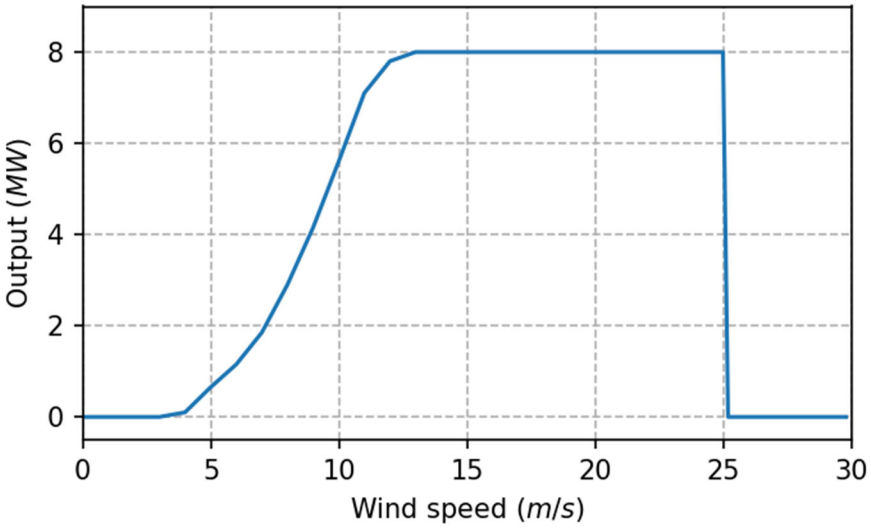


Fig. S1. Power curve for wind turbine Vestas V164-8.0.

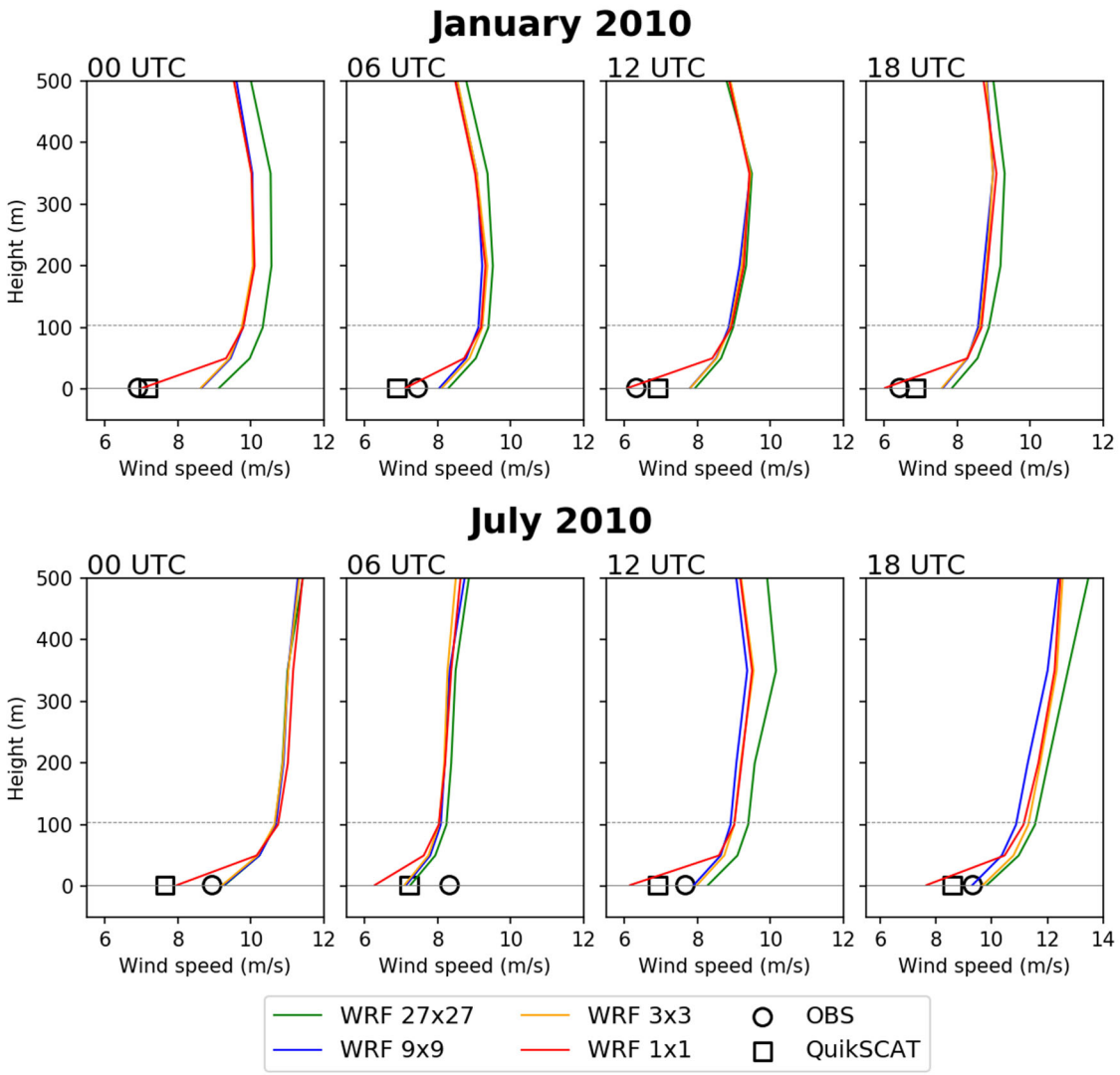
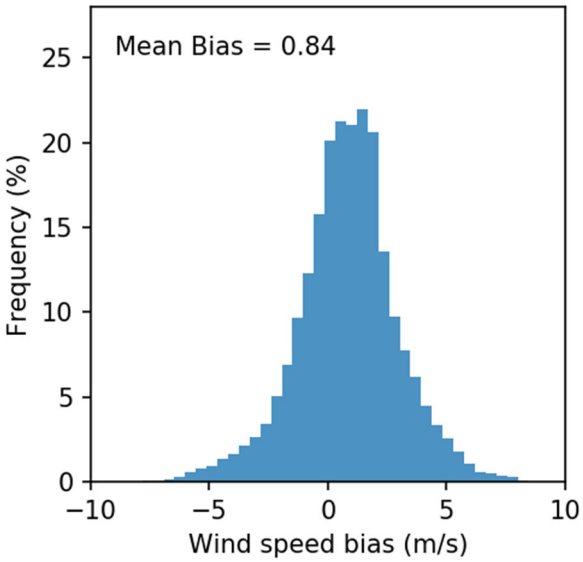


Fig. S2. Monthly mean wind profiles from the WRF's test simulation targeted at Bach Long Vi island using 4 nesting domains. The solid lines represent wind profiles extracted from 4 domains; WRF 27 x 27, 9 x 9, 3 x 3, and 1 x 1 indicate domain resolutions in km. The station wind data (OBS), the QuikSCAT data are plotted to compare with the simulations.

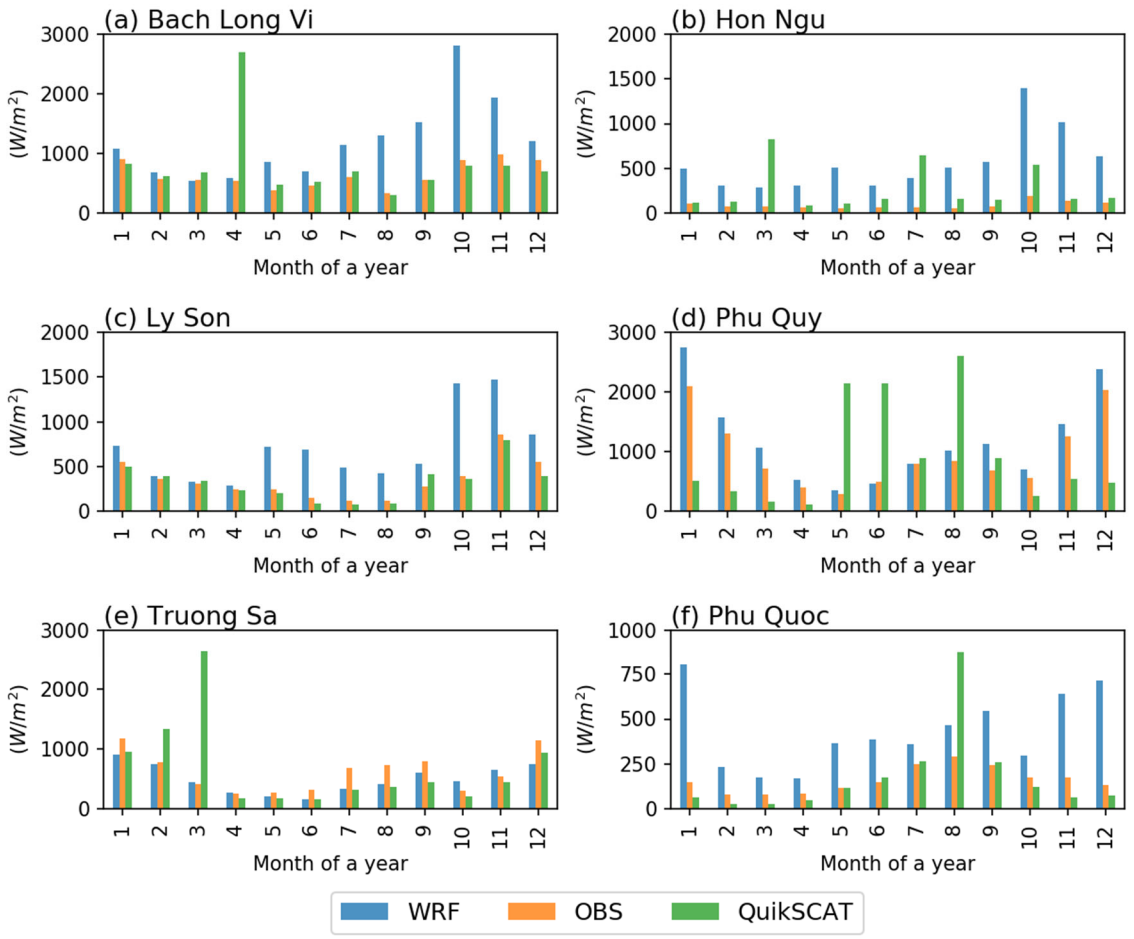
14



15 Fig. S3. Probability distribution of the model bias. Bias is defined as the WRF minus the
16 QuikSCAT data for monthly mean values in 5 years 2006 – 2010 for all grid cells in the simulation
17 domain 02; the WRF data was re-gridded to have the same resolution with the QuikSCAT data.

18

19



20

21 Fig. S4. Seasonal variation of the modelled WPD at the turbine height (105 m) over 6 islands in
22 the East Vietnam sea in comparison with the station observation (OBS) and the QuikSCAT data
23 for 5 years 2006 – 2010.

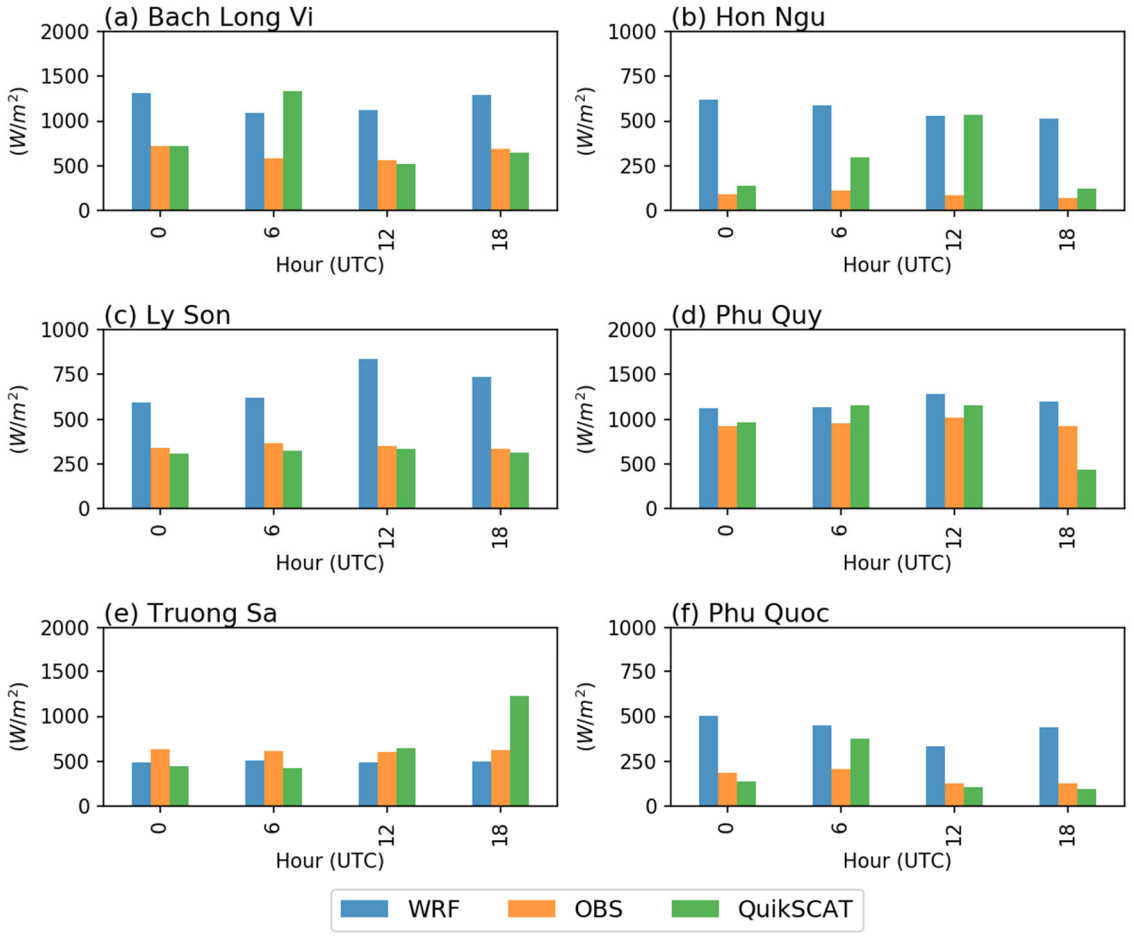


Fig. S5. Diurnal variation of the modelled WPD at the turbine height (105 m) over 6 islands in the East Vietnam sea in comparison with the station observation (OBS) and the QuikSCAT data for 5 years 2006 – 2010.

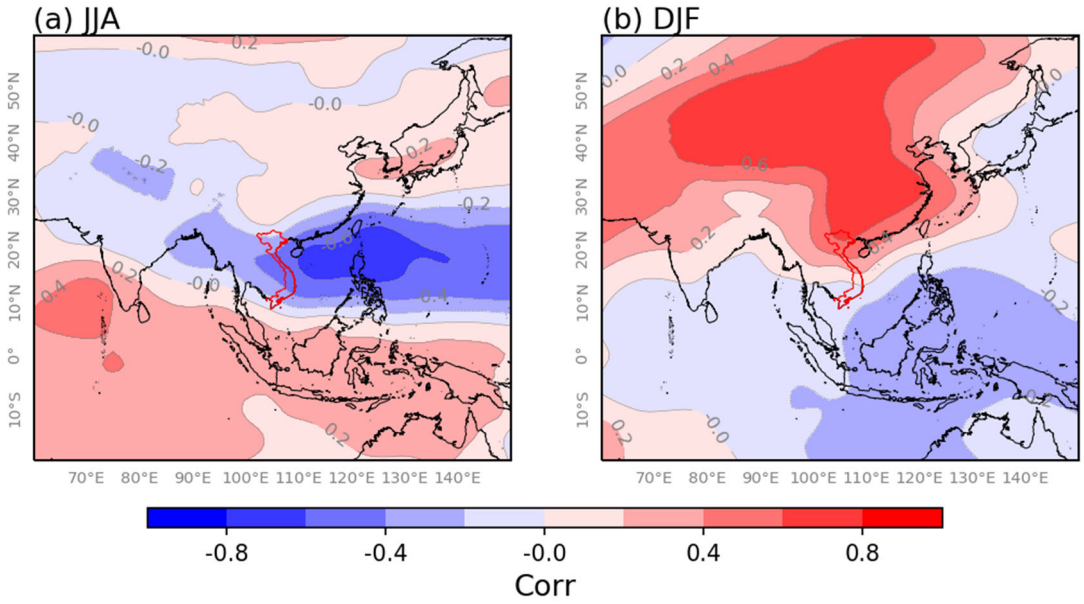
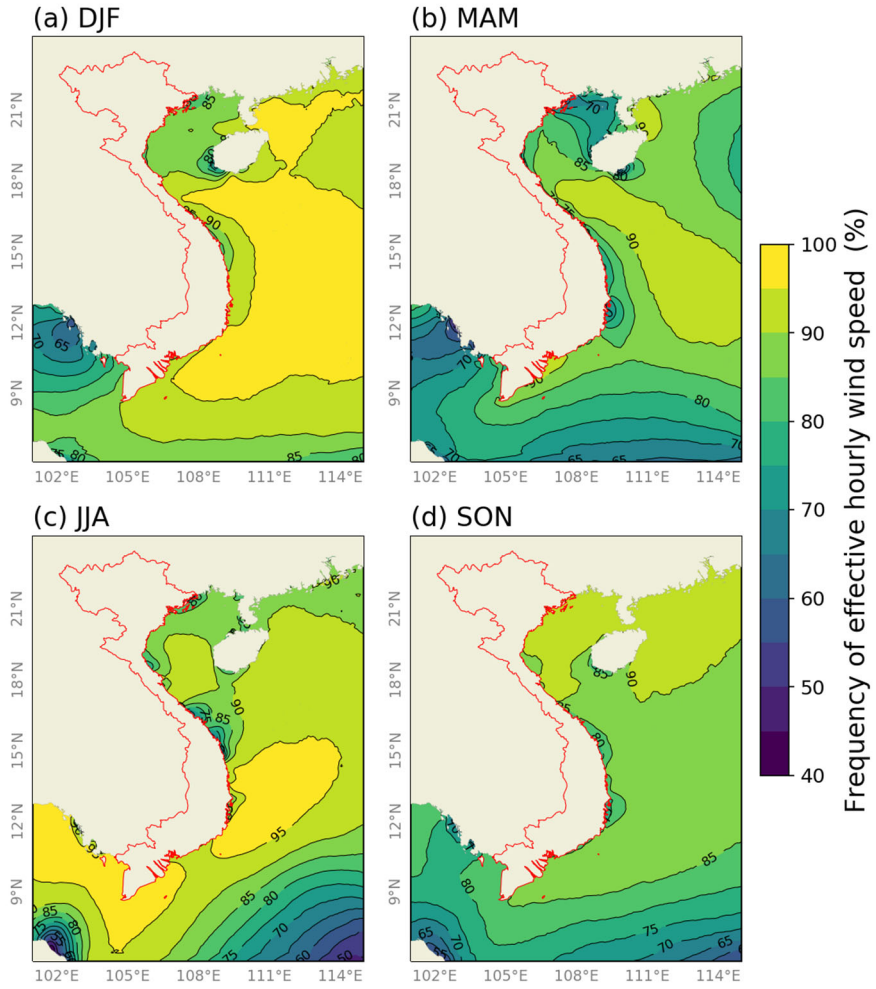


Fig. S6. Correlation coefficient (Corr) of monthly mean 850-hPa geopotential height (NCEP/FNL) with the simulated monthly mean wind power density at Bach Long Vi (20.13N, 107.72E) for JJA and DJF for 10 years 2006 – 2015.

39



40

41 Fig. S7. Spatial distribution of seasonal frequency of "effective" wind speed (between the cut-in

42 4 m/s and the cut-out 25 m/s) at the turbine height (105 m).

43

44