Advanced Atmospheric/Oceanic Analyses and Predictions to Effectively Support Offshore Wind (OSW) Energy Development, Environmental Evaluations, and Utility Applications defined in the Renewable Energy Rules (N.J.A.C. 14:8-6) and the NJ Energy Master Plan

*Phase V* OSW and Relevant Studies for FY 2018

(01 Nov 2017-31 Oct 2018); Total Project Funds Requested: ($419,465\*)

Funding Agency: NJ BPU

Partners: AquaWind

Period of Performance: 11/01/17-10/31/18

Total Budget: $419,465 (includes $269,465 in new funds and $150,000 carried over from FY2017 contract for NREL independent validation study

Project Summary

The RU-WRF model will continue to be run and evaluated to ensure adequate model performance while maintaining the resultant time series of data files that will include both historical and current results. Running the model includes continued support and maintenance of meteorological assets and satellite sea surface temperature products. The proposed work for FY18 will include detailed validations against a network of atmospheric datasets, including publicly available coastal met towers, buoys, and our own met tower/SoDAR/ WindTracer LIDAR systems that will be used for the validation program. The *in situ* and remote sensing

monitoring systems used for model input and validation will be maintained, analyzed, and updated on a continuous basis to avoid any significant data losses. Therefore, costly lag-times associated with model support will be avoided. In addition to internal validation this year will include external evaluation and validation by the National Renewable Energy Laboratory (NREL).

The resultant data associated with the proposed modeling studies will prove to be essential inputs for stakeholders regarding optimization protocols for both hypothetical and proposed offshore wind farm array configurations and representative wind power production estimations. Once the funding procedure (e.g., ORECs) has been completed, the wind developer applications should be submitted to NJBPU. Our datasets and visualizations are and will continue to be publicly available for use by stakeholders and NJBPU. This information could then be used by the NJBPU Evaluator to inform BPU and the wind developer decision makers regarding the Evaluator’s conclusions with the intent for resolving potential technical/scientific issues associated with the modeling/monitoring information presented in the submitted BPU OSW Applications. Modeling results can also be provided to additional partners for input to energy/economic models, which will assist in determining the expected economic viability of NJ’s Offshore Wind Energy development initiatives.