With increasing installed capacity, wind farms are requested to downregulate more frequently, especially in the offshore environment. Determination and verification of possible (or available) power of downregulated offshore wind farms are the aims of the PossPOW project (see PossPOW.dtu.dk). Two main challenges encountered in the project so far are the estimation of wind speed and the recreation of the flow inside the downregulated wind farm as if it is operating ideally. The rotor effective wind speed was estimated using power, pitch angle and rotational speed as inputs combined with a generic Cp model. The results have been compared with Horns Rev-I dataset and NREL 5MW simulations under both downregulation and normal operation states. For the real-time flow recreation, the GCLarsen single wake model was re-calibrated using a 1-s dataset from Horns Rev and tested for the downregulated period. The re-calibrated model has to be further parametrized to include dynamic effects such as wind direction variability and meandering also considering different averaging time scales before implemented in full scale wind farms.