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Offshore wind resource assessment in European Seas, state-of- the –art. A survey within the FP6 "POWWOW" Coordination Action Project.

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The purpose of the FP6 Project “Prediction Of Waves, Wakes and Offshore Wind” (POW’WOW) is to co-ordinate the activities in the field of wind and wave energy integration, to spread the knowledge gained from various EU funded projects among the partners and colleagues and to start the work on roadmaps for the future. In this contribution, the POW’WOW group working on the project task “offshore wind energy assessment” present a review of current experience (available datasets, new measuring techniques, new wind climate assessment methodologies and modeling approaches), particularly with regards to coastal areas.

To plan an offshore wind farm, a careful analysis of wind and turbulence profiles up to at least 100 m above the sea from tall mast measurements is needed within about 50 km from the coast. However, these offshore measurements are very expensive. Therefore, to supply information in absence of long-term mast measurements, research addresses different issues such as the reliability of remote sensing measurement methods offshore including satellite observations, sodar and lidar measurements, methodologies based on coastal areas measurements or numerical modeling at different time/space scales. These issues have been investigated in different national and European projects especially in North Europe. One of the purposes of the POW’WOW project is to review the state-of-the-art for offshore wind resources assessment. We examine experimental efforts expected to provide data for both testing parameterizations

of the underlying physical processes and assessing the accuracy of model predictions. Furthermore, we provide an overview of applied methodologies and current modeling approaches.