The EU-NORSEWInD project www.norsewind.eu has taken place from August 2008 to July 2012 (4 years). NORSEWInD is short for Northern Seas Wind Index database. In the project ocean surface wind observations from space have been retrieved, processed and analysed. The overall aim of the work is to provide new offshore wind climatology map for the entire area of interest based on satellite remote sensing. This has been based on Synthetic Aperture Radar (SAR) from Envisat ASAR using 9000 scenes re-processed with ECMWF wind direction and CMOD-IFR. The number of overlapping samples range from 450 in the Irish Sea to more than 1200 in most of the Baltic Sea. Wind resource statistics include maps at 2 km spatial resolution of mean wind speed, Weibull A and k, and energy density at 10 m above sea level. Uncertainty estimates on the number of available samples for each of the four parameters are presented. QuikSCAT ocean wind vector observations have been analysed for the same four parameters and ASCAT for mean wind speed. All satellite data has been compared to in-situ observations available in the Norsewind project. SSM/I passive microwave wind speed data from 24 years observed around 6 times per day are used to estimate trends in offshore winds and interestingly a shift in the seasonal pattern is notice. All satellite-based wind products are valid at 10 m, thus it is desirable to lift winds to higher levels for wind energy products. A method has been suggested to lift winds from 10 m to hub-height but more research is needed on this topic. The key wind energy statistical maps based on satellite data in the Norsewind project are publically available at web-sites:

SAR-based results are also available at
SOPRANO http://soprano.cls.fr/ select wind/statistics(L3), Norsewind

General information
State: Published
Organisations: Department of Wind Energy, Meteorology
Number of pages: 67
Publication date: 2012

Publication information
Publisher: DTU Wind Energy
ISBN (Electronic): 978-87-92896-12-4
Original language: English
(Keywords: DTU-Wind-Energy-E-0007(EN), DTU-Wind-Energy-Report-E-0007
Electronic versions: Norsewind_satellite_report.pdf

Bibliographical note
FP7, contract no. TREN-FP7EN-219048
Research output: Research › Report – Annual report year: 2012