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EO-based Information Service for Windfarm Management (EO-WINDFARM) - a Project within the EOMD Activity

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An international survey conducted by the European Commission shows that renewable energy is a top priority for European citizens (Press release, www.ewea.org, 10 March 2003). It also documents that research in renewable energies such as wind and solar is significantly more popular than other energy-related research in the European Union. In two decades, Europe will be importing 70 % of its energy unless there is a change direction: renewables can help to fill the gap in the European energy supply. While Europe is not rich in oil, gas and coal, there are huge wind resources and European companies are world leaders at converting these into electricity. Wind power and other renewables provide economic growth, security of energy supply, employment, and technology development, and none of these at the expense of the environment. Exploitation of wind energy will therefore help to stagnate the release of dangerous waste (from other non-renewable energy sources) and will contribute significantly to meeting the Kyoto targets for reduction of CO₂ emissions. EO-WINDFARM – a market development project sponsored by ESA - aims at providing Earth observation (EO) data to the wind farm industry. In remote areas and particularly offshore there is an urgent need for data. The EO-WINDFARM services will contribute to fill this need and will possibly increase the cost-effectiveness when siting, constructing and operating wind farms. In EO-WINDFARM, a service will be set up where relevant EO-based information products can be integrated with existing products and tools for wind farm design and management. In the first phase a limited number of products are included in the service, comprising tides and waves, which are useful for designing constructions, and wind speed and direction for siting and wind resource calculations. For land based sites, terrain roughness maps and topography are included as useful information for modelling of the airflow over land. The service will be thoroughly tested and validated for cost-effectiveness within the ESA-sponsored project.