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Case study
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Metocean Monitoring at the Tan Thuan Offshore Wind Farm

Tan Thuan offshore wind farm, the largest nearshore wind project in Vietnam.

As with the offshore oil and gas industry, offshore wind projects also require reliable metocean data throughout the life of the project to assist in energy performance assessment, engineering design, and safety requirements during operation. Typhoons and other extreme weather events pose significant risks to infrastructure and occupational safety at sea. Therefore, the design and operation of offshore wind farms need to be based on appropriate metocean criteria and have a continuous delivery of metocean data so that response times to natural disasters and environmental risks are effective.

To support the 75MW Tan Thuan offshore wind farm, located in Vietnam's Ca Mau province, with real-time monitoring of metocean parameters (and threshold warnings for extremes), Xylem's local partner in Vietnam, Reecotech Co., Ltd. proposed two (2) automatic metocean monitoring stations, one located near the wind turbine, and the other at its power sub-station. Parameters included wind velocity, barometric pressure, visibility, sea level (tides), current velocity profiles, directional waves and thunderstorm (lightning) detection/warning. Each system was configured to collect, store, and distribute data to the client and their stakeholders.

Reecotech's team for system installation and commissioning.

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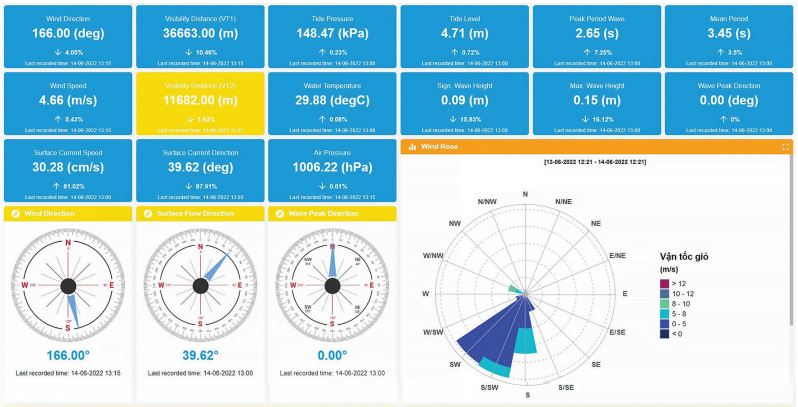
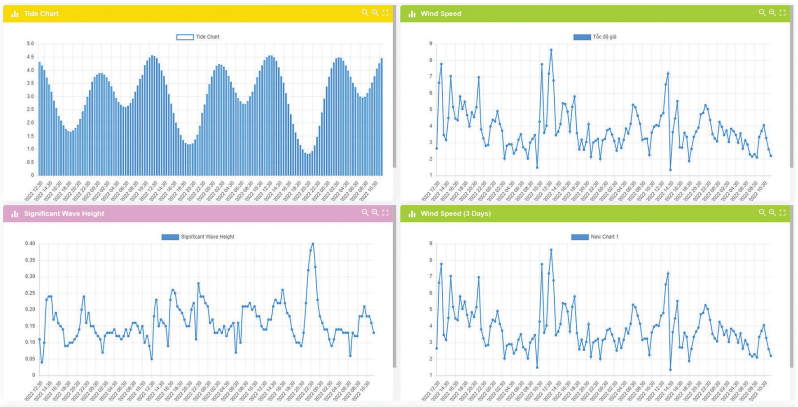
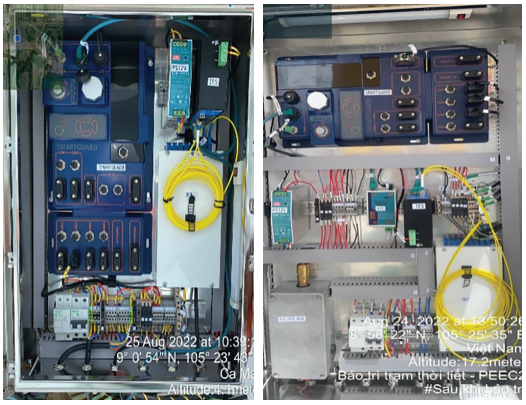
The real-time monitoring system is based around Xylem's Aanderaa SeaGuard II DCP Wave profiler, which was deployed from a bottom mounted installation. To supplement the acoustic-based wave measurements, Aanderaa's pressure-based Wave and Tide sensor was included. All data was managed via Aanderaa's SmartGuard Datalogger and transmitted data to the client's server via fiber-optic internet. All data is received by Aanderaa's Real-Time Collector software which provides a user-friendly interface with Reecotech's VnEmisoft software, which is used to manage and distribute end user data products. Real-time monitoring of these critical parameters provide all relevant stakeholders actionable data to help mitigate operational risks and costly weather-related impacts to structures.





Data dashboard on VnEmisoft

SeaGuard II DCP Wave Deployment



Aanderaa SmartGuard Dataloggers

Equipment cleaning maintenance

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