Setting the standards for asset optimisation

VisualEyes™
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Optimising utility-scale wind farm assets, both onshore and offshore, presents a range of challenges. To maximise the return on investment from a wind farm you need to ensure that you increase the revenues generated while keeping operational costs to a minimum.

Site-specific weather forecasts

Monitoring weather conditions across a large portfolio of wind farms can be a big challenge when wind farms span a vast geographical area and have differing site-specific wind climatology. With detailed and highly accurate data about the real-time and forecast weather conditions at each site, operators can stay one step ahead of changing weather conditions reducing the potential for extended downtime, and ensuring the safety and wellbeing of staff and contractors.

A number of weather elements impact site access planning, plant scheduling and workforce planning including snow, lightning, rainfall, temperature, visibility and last but not least wind speed.
The **VisualEyes™** map viewer helps you to visualise your UK and European operations to stay one step ahead of the weather.

**Optimising operations and maintenance (O&M) schedules**

The optimisation of O&M schedules plays a key role in successful asset management. By avoiding downtime when the wind resource is at its best and identifying clear weather windows to schedule maintenance, plant delivery and site visits, you can work towards maximising the financial returns from your wind farm portfolio.

Carrying out routine maintenance at the wrong time can have costly consequences for large-scale wind farms; every percentage loss in availability could mean a significantly higher loss in production. Having the foresight of adverse weather reduces exposure to risk and helps to avoid costly mistakes such as a marooned plant, the cost of which can run into tens of thousands of Euros.

**Optimising staff resource and increasing productivity**

Workforce planning is also a key consideration – operators need a detailed overview of weather conditions across all wind farm sites so they can pinpoint optimum weather windows in which to schedule routine maintenance.

This enables them to ensure that their staff resource is in the right place at the right time, and that they are able to carry out maintenance safely and without unexpected weather disruptions. The ability to disseminate detailed information about forecast conditions to staff quickly and easily is also a necessity, and enables staff to operate more efficiently and ensures optimisation from the ground up.

**The solutions**

Utilising industry feedback, the Met Office has invested in the development of **VisualEyes™**, the web-based weather monitoring and alert system for onshore, European wind farm sites.

**VisualEyes™** offers a simple asset management platform with:

- Real-time images and forecast weather conditions across all sites on a map using high resolution modelling, to give high level detail to the weather layers.
- Site-specific data and bespoke alerts for every location.
- The ability to generate up to 14-day customisable weather analysis reports to disseminate to colleagues with detailed charts from a choice of weather elements for example, lightning, hub-height wind speed, temperature, rainfall and snow.
- The ability to see areas affected by poor visibility due to rain, snow, fog and mist.
- Alerts that anticipate the movement of weather conditions hour by hour.

The challenges faced by offshore wind farms are unique and of a different scale than the onshore industry. With this in mind the Met Office has developed **Safesee™** — the one-stop weather information website for the marine market.

Offshore specific benefits include key marine data, data from customer buoys and aviation forecasts.

For more information about how **VisualEyes™** or **Safesee™** can benefit your operations call +44(0)1392 885680 or email renewables@metoffice.gov.uk