

Offshore Meteorological Masts

Various Locations

From 2003



Background:

PowerPoint's involvement with offshore wind began on one of the UK's very first offshore met masts back in 2003, which was for North Hoyle OWF. North Hoyle is now a fully operational wind farm generating 60MW of renewable energy. To this day PowerPoint have continued to provide full meteorological mast systems complete with aids to navigation, communications, condition monitoring, power systems, data acquisition, meteorological & oceanographic instrumentation. PowerPoint also provide complete commissioning, operation & maintenance packages for new and existing installations.

Overview:

Meteorological masts are essential systems required to gather 'Bankable' data, to enable developers to justify the significant financial investment required to build offshore wind farms. The main purpose of a met mast is to gather and process the required data from meteorological instruments fitted on the mast. This data is then analysed and used by the developer to determine how much power is likely to be generated from a wind farm installed around that particular site location.

As the met masts are located in exposed, isolated offshore locations, these 'Prospecting' met mast systems not only need to be powered from renewable energy sources but they also need to operate reliably with extremely high availability levels expected by both the client and the regulatory authorities.

Solution:

PowerPoint has been involved with the majority of the United Kingdom's offshore met masts either, designing, building, installing, commissioning & maintaining the complete systems or just carrying out essential modifications and/or providing O&M services. This has given PowerPoint the required knowledge and experience to easily tackle any requirement a client has and to also offer continual support for the system.

Over the years, PowerPoint has developed a close working relationship with suppliers of high quality instruments, data loggers, communications equipment/networks and calibration companies. This enables us to provide maximum flexibility to the client in addition to using this vast experience to recommend what we consider to be the best equipment or solution for particular applications.

Our multi-disciplined engineers, not only have extensive knowledge and expertise in the field, but are all offshore trained and certified climbers. This means that the engineers who were involved in the design process will be the ones on site actually installing, commissioning & maintaining the complete system.

Due to the remote locations of these structures, reliable transmission of the data collected back to shore is imperative. We use a variety of communications networks such as GSM, GPRS & Satellite to transmit this valuable data to either our office based servers, or directly to the client. We also often incorporate secure Wi-Fi Networks to enable the data to be collected from a vessel positioned within a few miles of the mast. In the rare event of primary communications failure, this provides a backup data collection facility that does not necessitate full access to the platform.

In order for all of this equipment to work effectively, a highly reliable power system is also required. As there is no mains power available at this 'Prospecting' stage, power is normally provided by a renewable energy based power system. Predominantly, we use solar power systems however wind turbines, fuel cells or even a combination of all three can also be provided if required. Each of these power systems are designed by our own engineers, using extensive experience and sophisticated software that we have developed. This software accurately evaluates system loads and power generation requirements, along with the battery backup capacities required. We also design the systems to incorporate intelligent condition monitoring which not only checks on the condition of the critical equipment installed on the platform, but also closely monitors the complete power systems.



Not only do we design and install these systems but we can develop maintenance plans to ensure the longevity of the system and ensure the validity of the data. Regular instrument swaps can also be arranged to ensure that calibrated instruments are always in place. Our relationship with many crew transfer vessel operators means we are the ideal O&M contractor for any met mast.

Conclusion:

PowerPoint has the extensive knowledge, experience & qualified engineers required to tackle any requirement for both offshore and onshore meteorological masts. All systems are bespoke to the clients' specification and budget. Just provide us with an overview of your requirement and PowerPoint will do the rest.