

CASE HISTORY



Application:	Offshore Wind Farm Development
Technology:	PS Logger® 2000m Marine Winch
Location:	Vesterhav Offshore Wind Farm, Denmark

Robertson Geo Services was contracted to conduct PS Logging on the Vesterhav OWF prospect.

Vesterhav Syd and Vesterhav Nord offshore windfarms with a combined capacity of 344 MW, equivalent to the annual consumption of more than 350,000 Danish households, represent a significant contribution to the green transition in Denmark.



Requirement:

Robertson Geo Services was required to collect PS Logger® data from thirteen locations as part of the overall geotechnical investigation survey. P and S wave velocity data was obtained down to forty-five metres, with readings taken at one metre depth intervals. The geologic formations were typically sands, clays and mudstone.

Equipment:

The PS Logger® with its integral source provided high resolution shear wave and compressional wave velocity data in unconsolidated soils and rock from single boreholes.

The Robertson Geo 2000m Marine Winch was used to convey the probe into the boreholes. This marine version was specifically developed for the harsh marine environment, using corrosion resistant materials, and featuring many improvements to ease maintenance and thereby minimise downtime.



Operation:

The thirteen boreholes were logged over a 10-week period working 24/7, whenever weather conditions permitted. The vessel had a large heave compensated drilling platform instead of the more common rooster box arrangement. This innovative solution made logging operations easier as the engineer and the winch remained in fixed positions relative to each other.

The Data:

The P and S velocities obtained were combined with bulk density values and applied to small strain moduli equations to give Shear Modulus, Bulk Modulus and Young's modulus. The data was quickly processed by the onboard engineer, usually within 24 hours. Tabulated data and profiles were presented, and a copy of the data was also QC checked by a qualified geophysicist in the UK.

End value to client:

The PS Logger® probe successfully collected high quality data, with 100% reliability, for the duration of the project.