Mooir Vannin
Offshore Wind Farm

Geophysical Surveys

Introduction

Mooir Vannin have undertaken two geophysical surveys to gather information on the seabed features and geology within the Offshore Array area and Offshore Electrical Connection Search Area (ECSA). These surveys collected data on the following:

- Geomorphological features of the seabed
- Object identification (wrecks, reefs, sandwaves and boulders, etc)
- Geological layers under the seabed surface

Timeline

The first survey was completed by one vessel in August 2015 and covered only the Offshore Array area. The most recent survey was completed by six Uncrewed Survey Vessels (USVs) between March and June 2024 and covered both the Offshore Array area and the Offshore ECSA.

Methodology

Specially equipped vessels went to site to collect the data. The equipment used included:

- Multi-beam echo sounders (MBES) to detect geomorphological features on the seabed
- Sub-bottom profilers (SBP) to detect the geology under the seabed
- Side scan sonar (SSS) to detect objects on the seabed ; and
- Magnetometers to detect magnetic objects (like shipwrecks) on the seabed.

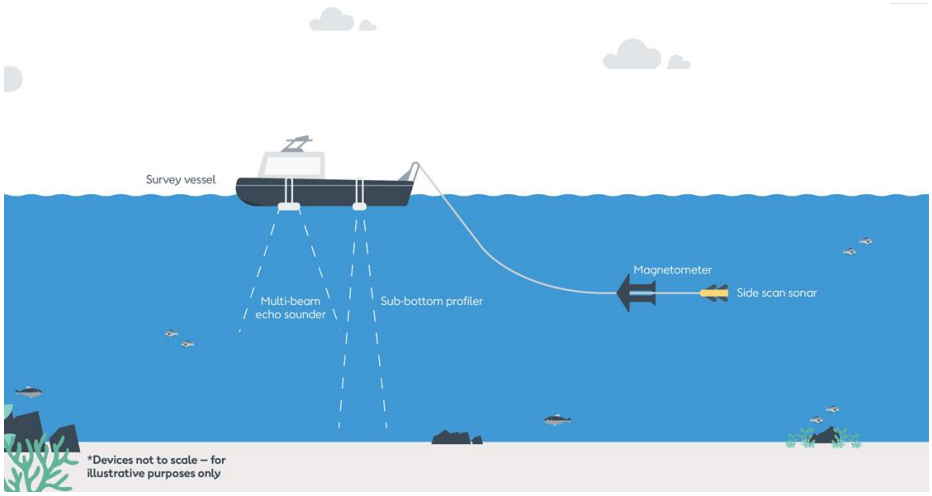

Figure 1: Geophysical survey equipment

The survey in 2024 used USVs rather than a crewed survey vessel. USVs are an innovative technology comprising remotely controlled vessel that collect data from across the site. This means that whilst the USVs are out on site they are operated by a team on land. The benefit of

using USVs was that data could be collected more quickly than with the traditional single survey vessel approach used in 2015.

Figure 2: Two USVs leaving Douglas Harbour for the 2024 survey

The USVs completed the survey in early June 2024. All of the collected data was then sent for processing before it could be used by the Mooir Vannin team.

Working with Isle of Man Fishers

The 2024 survey included up to six USVs operating at any one time between March and June. To ensure that the USVs could travel along the survey lines and to ensure the area was clear of obstructions, the Mooir Vannin team worked closely with the local fishing industry. Where necessary, local fishers ensured all of their static fishing gear was cleared from the area to give the USVs the best chance of covering the entire survey area safely. The Mooir Vannin Fisheries Manager issued weekly survey plans to the fishers and agreed survey times to ensure the survey programme was as undisruptive as possible.

Next Steps

- The 2024 data is being processed and will be presented to the EIA and Technical teams in Quarter 3 2024 for use within the EIA and for infrastructure refinement. At the moment, the draft environmental impact assessments are based upon the 2015 geophysical data, advice from technical experts and available literature and data. As the 2024 data covers a wider area and has a higher resolution than the 2015 data, it will enable to EIA team to refine the conclusions of the impact assessments.
- The EIA team will use the geophysical data within the chapter on marine geology, oceanography and physical processes to inform the understanding of the seabed environment, features and geology.
- The geophysical survey results will also be used, along with other data, within the benthic subtidal and intertidal ecology and the fish and fisheries chapters to describe the seabed environment.
- Finally, the EIA team can use the geophysical data to confirm the location of shipwrecks and archaeological marine sites, to ensure they are appropriately protected during construction.