

The Marine Data Exchange: the challenges and opportunities of standardising survey data for enhanced visualisations and insights

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The UK seabed holds some of the richest resources in the world, underpinning the UK's position as a global leader in offshore wind. The Crown Estate is uniquely placed to look at the bigger picture across a breadth of offshore sectors. The Marine Data Exchange (MDE) is one tool used to address key consenting and planning challenges through better data sharing and encouraging evidence-based decisions.

Developed in 2013 as the first of its kind, the MDE manages offshore survey data collected throughout the lifetime of offshore wind farms, from feasibility studies through to decommissioning or repower. The Crown Estate work closely with offshore developers and operators to ensure that survey data held on the MDE meets the MEDIN Data standards and can be shared with the public as soon as it is reasonable to do so.

Throughout the years, the MDE data holding has developed significantly to having almost 200TB of survey data from over 50 offshore projects across England, Wales and Northern Ireland; over 2,000 survey campaigns and covering over 15 survey themes, from geophysical data to marine mammal surveys. In order to generate data-driven and value-adding insights from the variety of data collected at great expense by offshore developers, the next development phase for the MDE is to enable the standardisation and automation of data, to deliver trend analysis, meaningful insight and enhanced visualisations for a wide variety of stakeholders and users.

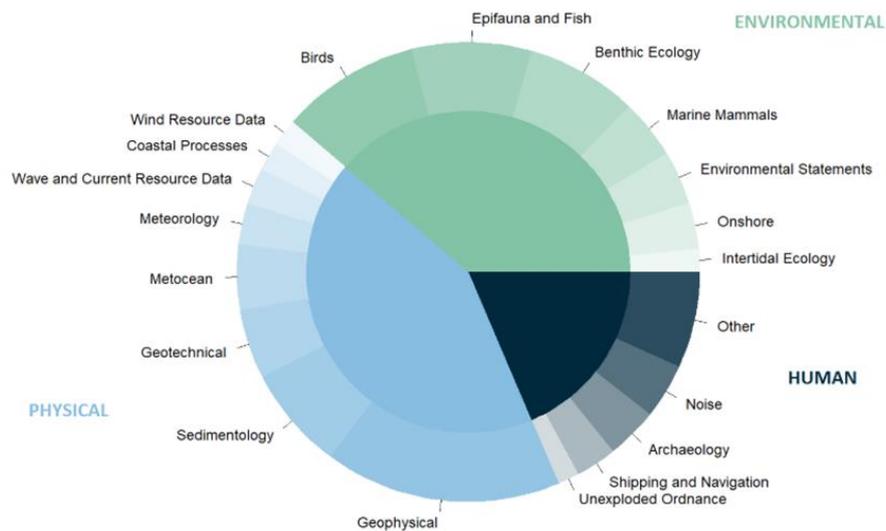


Figure 1: Survey data themes held on the Marine Data Exchange

Nevertheless, whilst the MDE seeks to promote the re-use of survey data to inform evidence based decisions, it also strives to make it simple for offshore industries to provide survey data without processes and data requirements becoming overly onerous. Over the years The Crown Estate have worked with the offshore industry to define and to develop the right balance in terms of data

requirements and the adoption of data management standards. This includes ensuring that the data held on the MDE meets the MEDIN Data Guideline standards and is defined by the MEDIN Metadata Discovery Standard; ensuring the discoverability and reusability of the data. However, in order to strike the right balance with the industry, there are no requirements in terms of the data format and so the MDE holds a variety of data types, collected and stored in slightly different ways.

Almost 60% of all data on the MDE is publicly available for anyone to freely download. Therefore, the MDE also disseminates data and information to a wide variety of users, including offshore developers and their consultants, academics, environmental NGOs, government bodies and the general public. Whilst the majority of users of the public website are visiting in order to find and download data, some users simply want to see what offshore wind companies are doing to measure impacts. For all of these user groups, standardisation can hugely benefit the visualisation of data; facilitating data discovery and educating many on not only the variety of data being collected by the offshore wind sector in the UK, but perhaps also unlocking the trends and insights held by the data.

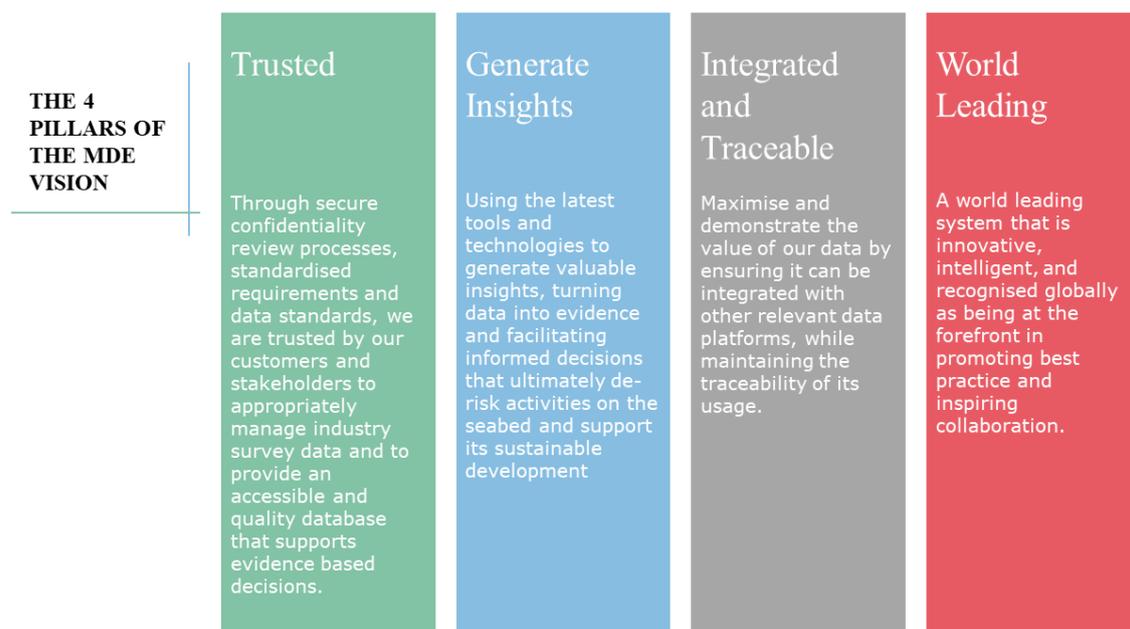


Figure 2: The Marine Data Exchange Vision

Survey data and evidence play a key role in the ongoing sustainable growth of the offshore wind industry. As a key tool in encouraging data sharing and evidence-based decisions, we are committed to improving the MDE so that it can better support the consenting and planning process. As we embark on an exciting journey to develop a new design-led MDE platform that supports our vision (figure 2), the ability to readily visualise, analyse and interpret the data will be critical. To ensure that the value of the data is realised, The Crown Estate aspire to standardise the variety of survey data that sits on the MDE using the latest tools and technologies, and the existing knowledge that sits within the marine data community.

As we embark on this journey, The Crown Estate would like to share some of the challenges, opportunities and lessons learnt.