# Novel ecological data collection and interpretation methods

## SSE Renewables is a leading developer and operator of renewable energy across the UK and Ireland

**Background**

Offshore wind will play a significant role in the energy mix in many countries across the world over the next decade. In the Netherlands, there are plans to increase the total operational capacity of offshore wind farms to 22.5GW by 2030. As a clean and abundant source of energy, offshore wind represents a powerful vehicle on the road to net zero.

The continued roll-out of offshore wind farms at scale presents certain challenges and uncertainties. Ways in which offshore wind farms interact with the ecosystems around them is a key consideration. The ability to accurately collect and interpret data to determine baseline conditions and validate predicted effects is invaluable in ensuring that developments are appropriately mitigated and are not unnecessarily constrained.

SSE Renewables want to increase knowledge and understanding of ecological effects associated with offshore wind farms, ensuring learnings are gained from case studies. Fundamental to this is the collection of data throughout the entire project life cycle. Transparent data collection and its analysis is needed to better inform project decisions, thereby preventing or mitigating possible negative effects from wind farms and improving the quality of ecosystems in the North Sea.

It is evident that offshore wind farms help reduce global greenhouse emissions. The ability to compliment this by also providing scientific evidence that offshore wind farms can have minimal impact ecological receptors and even benefit the surrounding ecosystem would help facilitate the Dutch government in meeting their ambitious targets.

**The Challenge**

The goal of this challenge is to identify innovative means of collecting and interpreting data on ecological receptors within and around offshore wind farm sites, from pre-development through to decommissioning. This includes data on receptors both above and below sea level.

SSE Renewables is seeking hardware, software or combined solutions to combat this challenge. This includes equipment, sensors or machines that collect data or fulfil the aim of monitoring. SSE Renewables is also searching for solutions regarding data analysis / interpretation and reporting. This includes recognition or identification technology such as, artificial intelligence, machine learning, etc.

Where promising solutions are identified, SSE Renewables will look to trial these at an offshore wind farm within its portfolio.

The knowledge and understanding gained would be valuable across the globe. It has the potential to revolutionise design features and technologies that wind farms include in order to understand and further improve the interaction of offshore wind farms with ecology.