

# Lessons Learnt through Delivery of Ecological Impact Assessment for UK Offshore Wind with Reference to the North American Market

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## Introduction

There are parallels which can be drawn from the nascent offshore wind industry that is emerging in the US, and the development of mechanisms for delivery of offshore projects in UK waters.

Offshore wind in the UK is a maturing industry, with some 49 operational, under construction or permitted projects constituting over 19 GW of generation. While the first projects to be permitted in the early 2000's were relatively near shore and on shallow sandbanks, projects that have been progressed more recently have moved to sites in deeper waters with more complex soil types. As a consequence of the resulting increased engineering complexity, and the size of the sites and resulting cost of ground condition investigations, the final design of a UK offshore wind farm project is now not typically fixed until Financial Investment Decision (FID). FID occurs immediately prior to the appointment of the principle contractor for construction, typically several years after permit award.

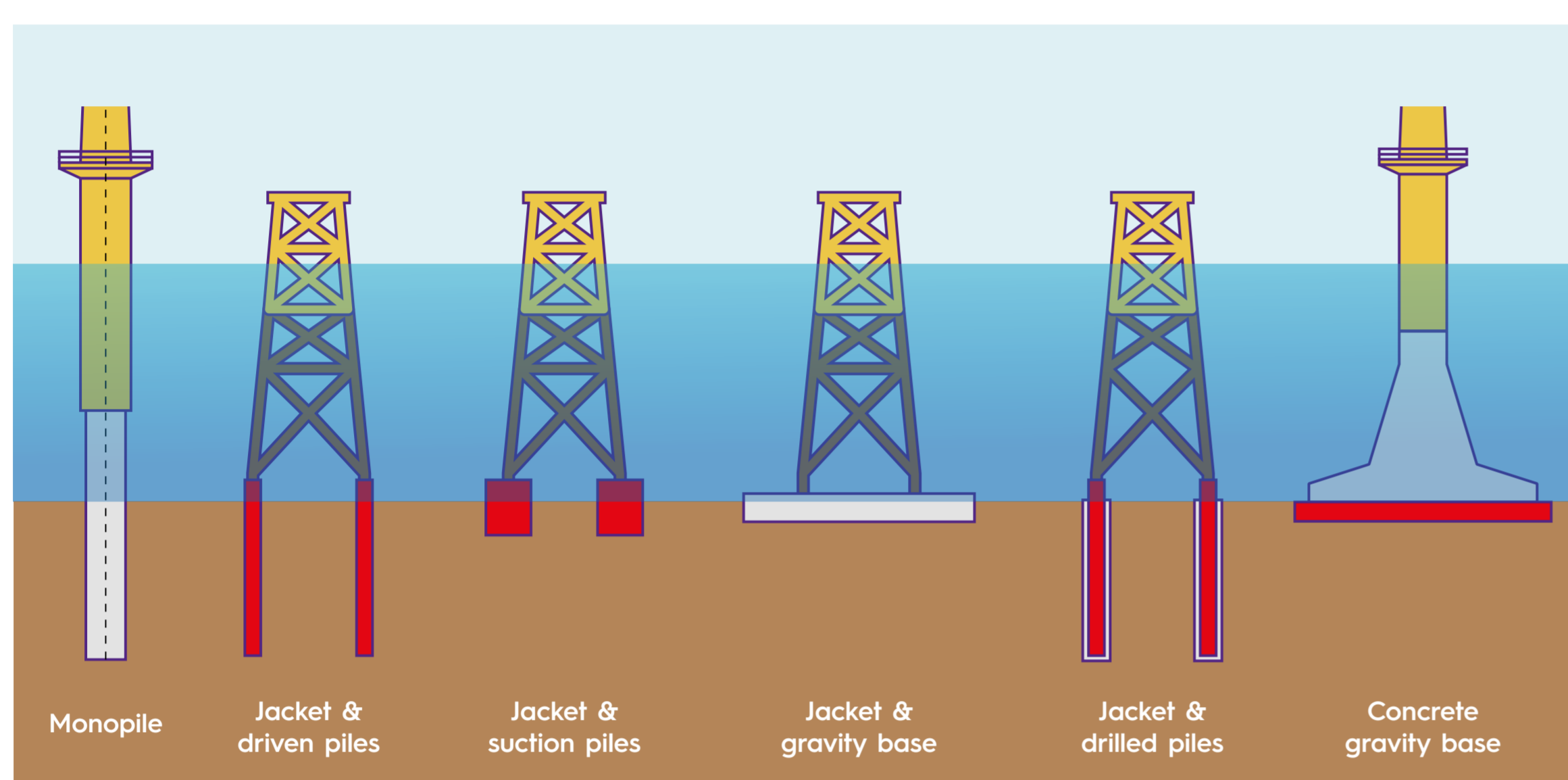
This means that foundation design and turbine choice are not known at the point at which impact assessments are undertaken and a permit license application is made. Therefore, the impact assessment and permitting process is undertaken on a range of project designs, termed the Design Envelope, which includes different foundation designs and turbine sizes to allow for flexibility in final design.

Drivers of this approach are two-fold:

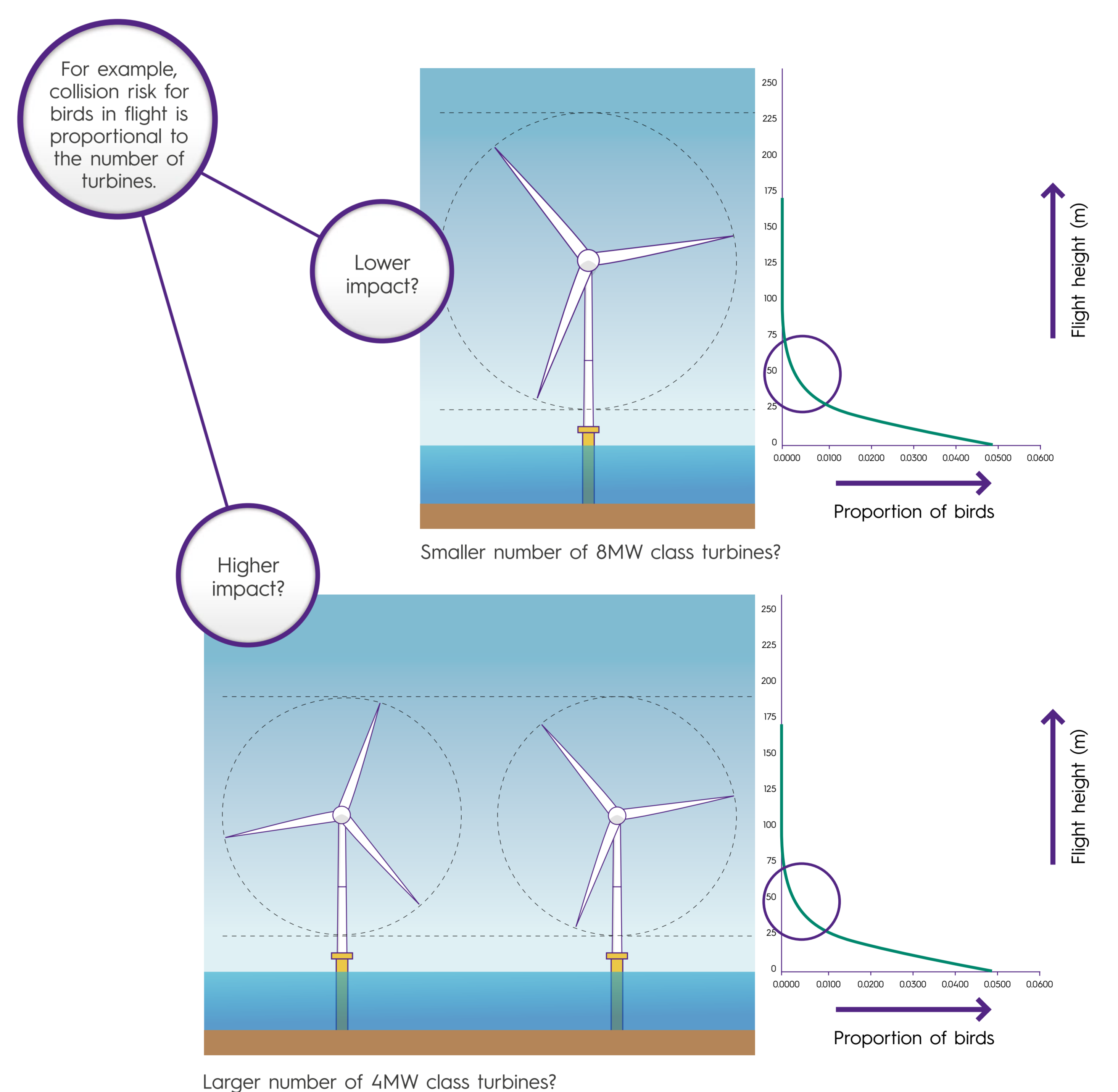
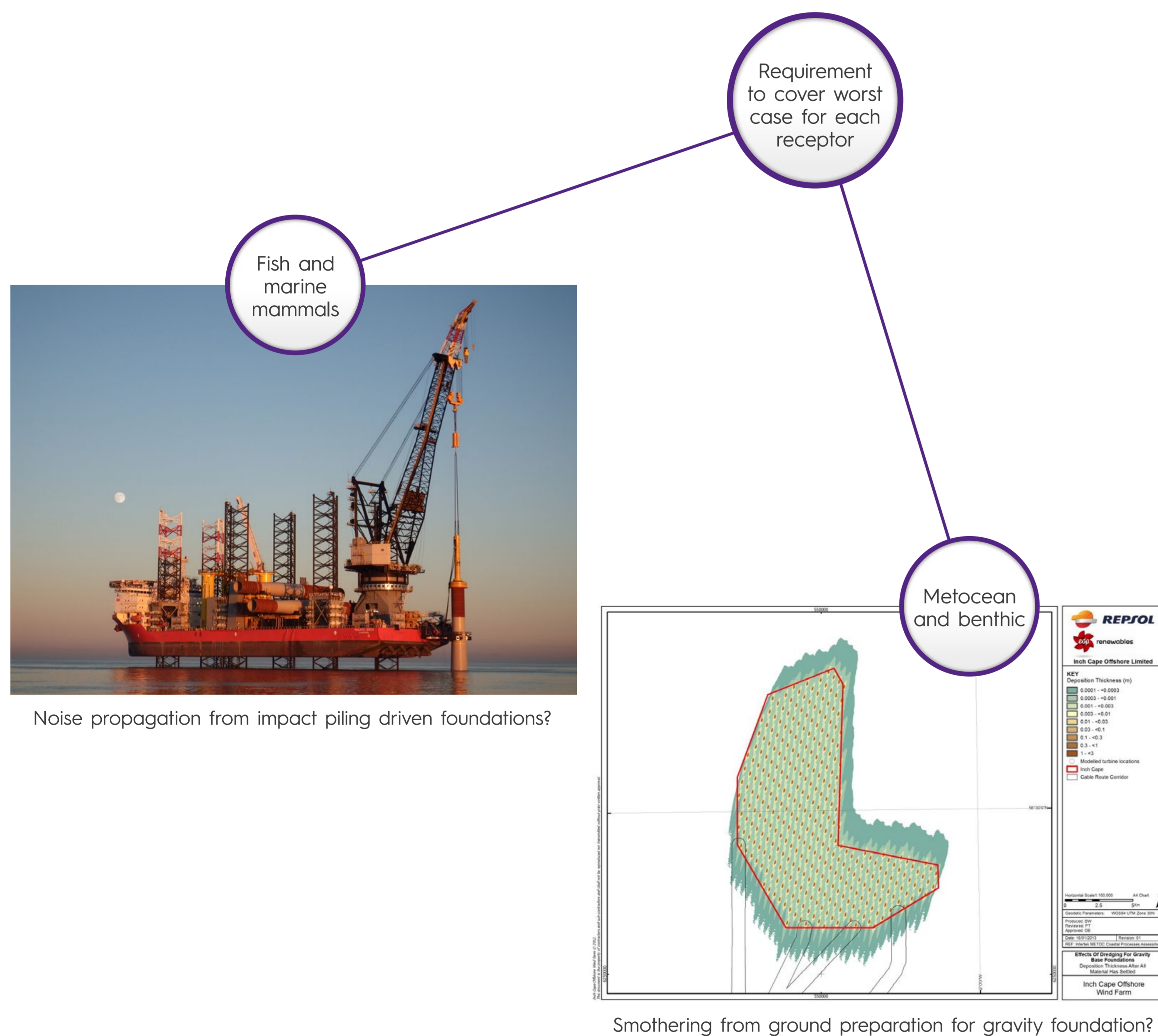
- It enables the developer to de-risk the expenditure associated with expensive geotechnical surveys and resulting foundation design studies, conducting both once permitting has been achieved; and
- Permit award will include 'deployment ready' and bankable turbine technologies, as well as future, aspirational, turbine concepts to ensure that permitted projects can utilize current technology at the time of project financing.

## Consequences for impact assessments

Several foundation concepts included for permit application



Existing, and future, turbine technology require consideration



## Lessons learnt

1. This approach to the Design Envelope has required a step change in approach from the stakeholder within the UK. The use of worst case has meant that recent impact assessments within the UK have, by design, concluded that a greater impact than is likely to result from the projects. Our experience suggests that while assessments have to include 'worst case', contextualizing potential impacts with 'most likely' case can be very helpful for stakeholders to inform their responses to the project;
2. There is an increased stakeholder consultation requirement so that everyone can understand the Design Envelope concept and resulting impact assessments. Don't assume others find it more straightforward than you do, they probably won't;
3. To be successful, this approach requires ecological consultants with detailed knowledge of the receptors present within the zone of influence to work closely with the developer's engineers to provide the definition of the Design Envelope. Experience from the UK indicates that not all areas of flexibility for the Design Envelope are as important to the engineers as others. Therefore, where receptor impacts are pivotal to the permitting process, working together to achieve the required definition can make the difference between permitting and refusal.

