

Clarification Questions: ‘Review of current and planned monitoring of seabird behaviour across operational wind farms’ project for the Carbon Trust’s Offshore Renewables Joint Industry Programme (ORJIP) for Offshore Wind

Clarification Question		Response
1)	The ITT is very focused on a technology led approach to estimating avoidance rates for collision risk modelling. Would a bid developing a questions led approach that created testable hypotheses and the methods to test these (regardless of technology) be considered?	If a contractor is proposing a deviation from the original scope of work, bid responses must comply with Section 4.2 of the ITT Description when proposing such ‘alternative’ work. A contractor’s bid price will need to include such ‘alternative’ work as outlined in Section 5 of the ITT Description.
2)	The ITT appears to focus on micro-avoidance behaviour (i.e. avoidance of turbine blades) due to the types of technology suggested. Is the intention to focus only on micro-avoidance behaviour, or should a bid also consider approaches to estimating meso-avoidance (avoidance of turbines within the wind farm) and macro-avoidance (total avoidance of the wind farm) as well?	Both meso & macro scale reactive behaviour are considered as focus areas for this project noting ITT Description Section 4 Work Package 2 Bullet point ‘v’ which requests: “How has the data been (or is intended to be) used to estimate macro-avoidance rates? What other information was required to do this?”
3)	The ITT suggests undertaking power analyses (WP3). However, it is unclear whether this means a statistical power analysis of the likelihood of finding an effect if one occurs. This relies on determining a suitable statistical test to be applied to data. The ITT appears to be asking for the efficacy of technology detecting a collision should one occur, which is determining a rate rather than the power of a statistical test to determine whether two distributions are significantly different. Can you confirm whether WP3 is intended to undertake a statistical power analysis (and if so on which data comparisons) or whether WP3 is intended to determine the most effective technology at correctly detecting collisions?	The phrase “power analysis” is sometimes used only to refer to calculation of statistical power to detect differences between groups, but is sometimes (see, for example, Horswill, Humphreys & Robinson, 2018) also used in the broader context of referring to calculations that study the relationship between sample design and uncertainty (of which standard power analyses are a special case). To clarify, we are using the term “power analysis” in the latter, broader, way, to refer to an analysis (based on simulation) that will look at how uncertainty in estimating key quantities (e.g. collision rate) vary under different scenarios and sampling strategies. The questioner is correct that interest within this analysis lies in determining a rate, rather than in testing for a difference between distributions/groups, and that, as such, it is different from many standard power analyses.

		<p>The power analysis is being used in this tender partly to compare technologies, but also to look at how uncertainty changes in relation to the scale and type of survey effort, and thereby to examine whether realistic study designs are capable of achieving acceptably low levels of uncertainty.</p> <p>The main practical steps required for the power analysis will be (a) simulation of data, and (b) analysis of each simulated dataset to yield an estimate of the rate(s) of interest. The specific methods to use for simulation and analysis are likely to vary depending upon the technology being used, and the rate being considered. Tenderers should propose possible methods to be used for these, and demonstrate that they have the relevant expertise (in statistics and programming) to implement these, but the final choice of methods will be decided within the project, based upon the outcomes of WP2.</p>
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