

Question No.	Question	Response
1	WP3 – There is a suggestion of physical testing of cables (mechanical and electrical). Should this be warranted within the investigation approach, will the Carbon Trust OWA programme be in a position to provide suitable and representative cable samples?	The OWA TWG-C will not be providing representative cable samples as part of this work. It is expected that the analytical research (e.g. finite element modelling) will be conducted as part of this project, and that the study will define the scope (including methodology, costs, and requirements) of future testing, which may be undertaken in additional work.
2	WP2 – Would any members from the developers be willing to provide letters/email of introduction to any of the present suppliers they are working with?	Whilst it may be possible for the OWA TWG-C to suggest contacts and companies relevant to the market review, the Contractor should assume no support from the OWA TWG-C for the stakeholder engagement.
3	WP3 – How many different cross-sections of cables are envisaged to be studied?	<p>The OWA TWG-C welcome input from bidders for the key cross-sections of relevance. Bidders should assess the most relevant cross-sections and include this within the proposal.</p> <p>It is expected that, at a minimum, the Contractor will investigate 150mm<sup>2</sup> and 800mm<sup>2</sup> cross-sections, with potential for a mid-range size (e.g. 500mm<sup>2</sup>).</p>
4	WP3 – How many different iterations of screens are to be studied (e.g. copper wire, copper sheath, aluminium sheath, etc.)?	<p>The OWA TWG-C welcome input from bidders for the key screen types of relevance. Bidders should propose the most relevant screens to be incorporated into the study.</p> <p>It is expected that, at a minimum, the following are included:</p> <ul style="list-style-type: none"> <li>• Exclusively copper wires/tapes;</li> <li>• Copper wires + aluminium foil.</li> </ul>
5	WP3 – Is it just array cables that are to be modelled?	The core focus of this scope is for inter-array cables. Where learnings are applicable (or otherwise) to export cables, the Contractor should assess throughout the project delivery.
6	WP3 – Is it just static cables to be modelled, or is it envisaged that dynamic cables will also be in the study?	The modelling should focus on static cables, i.e. those for bottom-fixed offshore wind farms. However, such static cables may experience some dynamic loading.

7	<p>WP3 – Would the TWG-C be willing to provide material data (suitably anonymised) for cables they have previously installed?</p>	<p>It should be assumed that such data may not be provided for the project. Proposals that clearly state estimated data sources will be viewed favourably.</p>
8	<p>WP3 – Will the TWG-C members be providing any cable samples for the mechanical and electrical testing? If so, what dimensions are expected (e.g. cable length, cross-section, type, etc.)?</p>	<p>See response to Question 1.</p>
9	<p>WP3 - How many different scenarios for the installation are expected to be modelled (e.g. load out, first pull-in, installation on the seabed at water depth, second pull-in, cable burial, etc.)?</p>	<p>Whilst the OWA TWG-C do not expect a full installation scenario to be modelled <i>per se</i>, it is important to understand the effect of all loads experienced by the cable throughout its lifetime, which includes the full installation process and operation.</p> <p>The loads of interest are primarily bending and crushing (sidewall and squeeze pressure), which can be modelled and tested directly.</p>
10	<p>WP3 - What operating temperature range is expected to be modelled (for example -20 to +40 degrees C)?</p>	<p>Proposals should suggest an appropriate ambient temperature range for modelling. The cable's internal operating temperature modelled should be up to the theoretical temperature limit of the cables.</p> <p>An example temperature range could include 5, 20, and 70 degrees C, to cover the change in state of bitumen, installation conditions, and operational conditions.</p>
11	<p>WP3 - The work package description says that the <i>Contractor should conduct appropriate finite element modelling and testing to identify the different failure modes and limits for the most relevant cross-sections.</i></p>	<p>See response to Question 1.</p>

	<p>Is it expected that the testing, using a suitable test rig(s), be conducted as part of this study or is it the case that the expected deliverables from the study be test definition/specifications, test methodology and costing/planning with testing itself to be part of follow-on project or additional work?</p>	
--	---	--