

OFFSHORE WIND ACCELERATOR

Clarification Question Responses

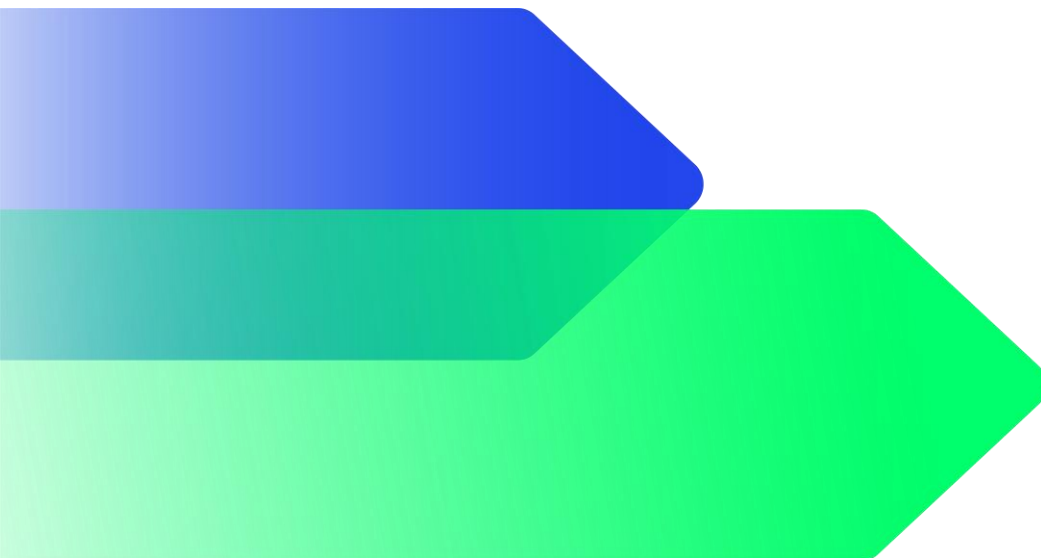
Invitation to Tender for OWA – Support
Structure Damping Discretionary Project

9th of November 2022



The Invitation to Tender was published on 18th of October.

The questions listed in this document were received in the time period between the 18th of October and the 1st of November 2022.



#	Question	Response
1	In the description of WP1 in the first sentence, it is stated that “ <i>dampers</i> ” shall be reviewed. Does dampers mean mechanical damping devices such as vibration dampers only or does it also include damping technologies that use the rotor aerodynamic damping such as an adopted pitch strategy?	<p>Mechanical dampers in the turbine towers and active, passive and hybrid dampers should be considered as part of the project scope.</p> <p>Rotor aerodynamic damping falls outside the project scope.</p>
2	In the description of WP1, it is stated that “three different [water] depths (shallow, medium, deep)” can be considered. Does this mean that 3 different monopiles are provided?	<p>The bidder shall put forward their proposals for three different water depths which they see as relevant and representative for the future buildout of offshore wind. The proposed water depths, along with other parameters, will be agreed with the Project Participants during the early stages of the project.</p> <p>For these various depths and for the various damping technologies, the requirements / parameters for the monopiles and other major structural components for the three depths shall be investigated by the contractor as part of the work.</p>
3	Are the parameters for the monopile available for different sites?	<p>Indicative parameters shall be proposed by the bidder, and these will be agreed with the Project Participants during the early stages of the project. It is envisaged that the parameters for the monopiles and other major structural components will be reviewed during the course of the project as the effects of dampers are understood and considered.</p>

4

If I understand the description of WP1 correctly, the contractor is supposed to use the IEA 15 MW turbine with a monopile for a generic North Sea location and include a soil profile from the PISA project. If I understand it correctly, those data already exist and will be provided to the contractor.

Is it within the scope of this project to design a monopile for a 22MW wind turbine?

The wind turbine model (or models), and which data to use, shall be proposed by the bidder. The bidder should have full access to the models and the data – the bidder should not rely on data or models to be provided by the project. If the bidder does not have access to the required data or models, this should be identified in the bid.

The project would like to consider WTG's greater than 15MW, up to 22MW. The exact size(s) should be proposed by the contractor and discussed with the Project Participants. However, we may be particularly interested in larger turbines (up to 20-22MW) and would like bidders to propose a wind turbine model which can be used.

Generic North Sea site conditions would be preferred.

The Project Participants are keen to be guided by the bidder and are open to the bidder's proposals.

WP1 states that the operational loads shall be “calculated based on the IEA 15 MW reference model and the corresponding site conditions” (with 30 m water depth and soil stiffness parameters specified therein). WP1 also states that it may be best to study one generic site with a soil profile from the PISA project and for three different depths (shallow, medium, deep). Could you please clarify:

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- A. What are the definitions for shallow, medium and deep in the context of this project?
- B. Is one of shallow, medium and deep required to match the IEA reference model water depth of 30 m?
- C. That the study is to be performed for a single soil profile (to be agreed with the Project Parties) for the three different water depths above.

Please refer to the answers to questions 2 and 4 above.

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In WP2, it is stated that “A generic WTG model shall be used in WP2. This shall be provided by the Contractor and approved by the Project Parties”. From what I understood from WP1 those data shall be provided by Carbon Trust?

The model, the parameters and the data to be used for the project shall be proposed by the bidder. This proposal will then be discussed and agreed with the Project Participants. The bidder should have full access to the models and the data – the bidder should not rely on data or models to be provided by the project. If the bidder does not have access to the required data or models, this should be identified in the bid.

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In WP2, it is stated that “A reduced number of fatigue design loads shall be considered.”. What is the expected number of design loads? What is the number of turbines to study (cf. WP1)? What is the number of sites/depth to study (cf. WP1)? What is the expected number of damping devices to evaluate?

Please refer to the answer to question 6 above.

8

[Deliverable] D2.2 is described as “The model(s) used to analyse the lifetime effect, together with the various dampers.” Does that include the aero-elastic code used to carry out the simulations?

We would like the model(s) as a deliverable in as much detail as possible. If there are concerns around IP or commercially sensitive information, then please note this in your bid and the level of detail of the model can be discussed with the Project Participants.

9

In WP1 and WP4, an emphasis is put on cost analysis. What contribution is available from the tendering parties? E.g., detailed cost breakdown, cost model, individual turbine part cost.

The bidder should not rely on data being provided. Please compile your bid on the premise that you will need to source your own data.

10	In WP1, intellectual property is to be reviewed. What is the expected extent of this review?	The bidder shall investigate the IP / commercial landscape and identify any IP / commercial restrictions / limitations placed on the use of the various dampers identified. For instance, certain damper solutions may only be useable with certain other components (such as WTGs) and hence may only be useable on certain wind farm developments. The bidder is invited to propose methods to investigate this in sufficient detail for the Project Participants to understand where a damping technology is of use globally or only in certain settings. This could form part of the engagement with technology providers. A full patent search / freedom to operate search would probably be deemed beyond the scope of this project. We leave it to bidders to propose how they would address this task.
11	Please clarify that the optional deliverable D2.4 should be the extreme event effects model(s)?	Yes, that is correct, D2.4 is referring to the model(s). This was a mistype in the ITT document.
12	Regarding the cost benefit analysis model in WP4, does the OWA have a preferred template or should the Contractor use their own?	There is no preferred model or template. The Cost-Benefit Analysis (CBA) model can be provided in Microsoft Excel, but we will be guided by the bidder if they wish to propose an alternative.

13	<p>Regarding the mitigation methods for identified risks in WP4, please clarify that the scope is to propose appropriate mitigation methods, (such as working with the supply chain in a follow-on project), but that the execution of such a follow-on project is outside of the present scope.</p>	<p>The scope is to propose and describe appropriate mitigation methods, but not to undertake the work.</p>
14	<p>Regarding the 'specification for further work' in WP6, it is noted that this could entail working with the supply chain. Please confirm that the engagement with the supply chain in this instance is expected as a part of the future work, and the requirement in WP6 is simply to develop a specification for further work that could include working with the supply chain?</p>	<p>The scope is to propose / define future work which should be addressed in a follow-up project. Bidders are requested to outline the research needs, propose a work programme and highlight the approach, which could include work or engagement with the supply chain. The delivery / execution of the future work falls outside the scope of the Support Structure Damping project.</p>
15	<p>Please clarify that the deliverable DA.3 Executive Summary Report is the same as deliverable D6.2 Summary Report?</p>	<p>DA.3 and D6.2 are referring to the same report. (Please disregard DA.3 in your proposal and focus on D6.2.)</p>
16	<p>Please clarify that the deliverables DA.4 Final Presentation and DA.5 Delivery of Webinar are the same as deliverable D6.3 Project Final Webinar?</p>	<p>DA.4 means a PowerPoint slide deck to be prepared by the bidder prior to the final webinar. The delivery of the webinar (D6.3) is a separate deliverable, which will include the presentation of the PowerPoint slide deck followed by a Q&A session.</p>

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The guideline breakdown of budget per work package in Section 6.1 of the ITT totals between £200k and £280k, and does not include an estimated budget for WPA. This breakdown does not align with the Total Budget expectation of £210k-£240k. Please can you clarify if the Total Budget values presented remain correct?

Does the Total Budget expectation of £210k-£240k provided in Section 6.1 of the ITT include or exclude the five Optional Work Packages?

The budget of £210,000 to £240,000 is the total for the non-optional work. Optional work packages (WP 1a, 2a, 3a, 4a and 5a) should be costed separately.

The breakdown for the individual work packages given in section 6.1 of the Description of Tender is indicative only, to indicate the approximate weightings we anticipate for the different WP's. These are a guide only and should not be relied upon to create a "total cost". The total cost should be in the £210-240k range for non-optional work.

Bidders are required to provide a budget split per WP.

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Please clarify whether the day rates are expected to remain fixed for the duration of the contract, or if an inflationary review can be planned for after one year – thereby guaranteeing a fair reflection of the cost for both the Bidder and the Carbon Trust.

Bidders are welcome to account for/include for inflation but please blend this over the duration of the project, to provide a single rate for the whole duration of the project for each of the grades listed in the Bid Price Calculation Template.

carbontrust.com

+44 (0) 20 7170 7000

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