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## Programme Area: Marine

### Project: Tidal Modelling

## Title: Tidal Modelling (Modelling Tidal Resource Interactions around the UK) - Request for Proposal

### Context:

Launched in October 2011 this project involved Black & Veatch, in collaboration with HR Wallingford and the University of Edinburgh to develop a model of the UK Continental Shelf and North European Waters, 100 times more accurate than existing marine data. This has been used to assess the tidal energy potential around the UK (tidal range and tidal streams), to inform the design of energy harnessing schemes, to assess their interactions, and to evaluate their impact on European coasts. It can also be used to renew and inform flood defences, coastal erosion and aggregate extraction. Now completed, the project has been launched to market under the brand of SMARTtide. This is available to the marine industry under licence from HR Wallingford.

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## Request for Proposal (RfP)

Title of Services for which Proposals are Requested:

### **Tidal Modelling (Modelling Tidal Resource Interactions around the UK)**

Request Issue Date:

24<sup>th</sup> February, 2011

Deadline for Notification of Intention to Submit a Proposal:

Midday, Wednesday 9<sup>th</sup> March, 2011

Closing Date:

Proposals must be received before midday, Monday 28<sup>th</sup> March, 2011

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## **1. Introduction and Overview of ETI Requirements**

### **1.1. Introduction to the Energy Technologies Institute**

The Energy Technologies Institute LLP (ETI) is a private organisation formed as an innovative Limited Liability Partnership between international industrial energy companies and the UK government.

Our mission is to accelerate the development, demonstration and eventual commercial deployment of a focused portfolio of energy technologies, which will increase energy efficiency, reduce greenhouse gas emissions and help achieve energy and climate change goals.

We will do this by leveraging the skills, capabilities and market access routes of our members, working with other organisations worldwide to take the most challenging large-scale energy projects to full system demonstration, thereby bridging the gulf between laboratory proven technologies and full scale commercially tested systems. Our projects will also develop knowledge, skills and supply-chains, and will inform the development of regulation, standards and policy. Hence we aim to overcome major barriers, de-risk the future development and shorten the lead times to market for secure, affordable, low-carbon energy systems for power, heat and transport.

Our portfolio includes programmes in areas such as Wind, Marine, Distributed Energy, Transport, Energy Storage and Distribution, Carbon Capture & Storage and Buildings.

Further information can be found on our web-site at [www.energytechnologies.co.uk](http://www.energytechnologies.co.uk).

### **1.2. Background to the Project**

Tidal energy can be classified into tidal stream and tidal range, both of which may make a strategically significant contribution to meeting UK energy requirements.

Tidal stream extracts energy from the kinetic energy of the passing tide. Suitable sites are those where the spring tidal velocity exceeds a given limit, and are generally found where the local bathymetry results in high velocities, typified by the conditions in the Pentland Firth.

Tidal range captures the energy of the tide behind a barrier in the form of either a barrage or lagoon. The energy is then extracted by releasing water through a series of turbines.

Although the mechanisms by which energy is extracted by both tidal stream and tidal range are different, the fundamental source of energy is the same, and there may be significant non-linear coupling between installed systems, with the effects extending over a geographically significant area.

There is an increasing potential for more of the UK tidal resource to be extracted by some combination of tidal stream and tidal range technologies in the future, and therefore the interactions between distant installations may become more significant.

The aim of the project described in this Request for Proposals is to develop a set of basic, but flexible, assessment tools to allow an examination of these interactions, and to conduct an initial analysis of them up to the scale of the flow of the Atlantic tidal wave around the British Isles and European shorelines.

### **1.3. ETI approach to Health & Safety**

The health and safety of those who may be affected by ETI projects is of paramount importance to the ETI. The ETI expects those who receive ETI funding to demonstrate a commitment to best practice in health, safety and environmental management as well as demonstrating that legal requirements are met.

#### 1.4. Required Outcomes

Interactions between various installed tidal range and/or tidal stream systems may have a significant primary impact on UK tidal energy resources, and resultant secondary effects on the UK and European shorelines. It is important therefore to improve understanding in this area to ensure any limitations to the deployment of future technologies are understood, and to ensure that any future evolution of a network of systems can be managed efficiently.

The ETI has already commissioned a separate project (PerAWAT) which will, amongst other things, investigate the effects of interactions between multiple tidal stream systems within a localised area, e.g. the Pentland Firth. This Tidal Modelling Project should not repeat the work of PerAWAT, but instead should focus on the higher order effects of the UK Tidal Energy Resource as it flows around the UK and beyond, and the interactions between geographically separated sites. For example, what effect would tidal energy extraction from Orkney Waters have on the characteristics of the energy resources available at the Pentland Firth?

The following fundamental issues need to be understood:

- a) How will the interactions between tidal range and tidal stream systems positioned around the UK's waters combine to form an overall effect?
- b) Will the extraction of tidal energy resource in one area impact the tidal energy resource at distant sites around the UK, potentially up to the flow of the Atlantic tidal wave around the British Isles and European shorelines?
- c) What constraints might these interactions place on the design, development and location of future systems?

In addition to providing an answer to these questions this Project shall also provide a resource to further explore this area in the future, should that be required.

The Project shall deliver the following high-level outcomes:

- A working hydrodynamic numerical model of the UK Continental Shelf (the "UK Continental Shelf Model") that can be used to simulate any combination of tidal range (e.g. barrages, lagoons, etc) and tidal stream systems in UK waters for the purpose of estimating combination hydrodynamic effects and energy outputs; the model shall be capable of loosely coupled integration with detailed models of tidal range and tidal stream extraction schemes<sup>1</sup>.
- Insights into the effects of the interaction between different tidal range and tidal stream energy extraction schemes, using different site scenarios. These insights will include both localised effects (e.g. around the Pentland Firth for tidal stream), UK wide effects and wider European shoreline effects.
- Tools to support future investigations that may be required, specifically a parametric Cost of Energy model to allow future refinement of tidal range site assumptions based on technology advances; a detailed tidal range hydrodynamic numerical model capable of representing various future tidal range installation approaches, and being loosely coupled to the UK Continental Shelf Model; and an ability to loosely couple tidal stream models from the PerAWAT project in the future.

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<sup>1</sup> It is not intended that the model should represent individual tidal stream arrays, but rather the overall collective effect of all arrays within a particular area.

Critical Success Factors, include the following:

- The Project should significantly advance the understanding of the effects of interacting tidal energy extraction schemes on the UK and European shorelines.
- The Project should provide clear recommendations and constraints to add to the knowledge base informing the physical and economic optimisation of the positioning and type of tidal energy extraction systems.
- The Project should provide a robust and flexible resource to allow the effects of future tidal installations to be assessed.
- The confidence limits on the extent to which the model and its boundary conditions are representative of the response of the UK tidal energy system should be analysed and reported.
- Any additional critical success factors identified by the Respondents should be described in the Proposal.

## **1.5. ETI Requirements**

### **1.5.1 Project Requirements**

The Project will develop and verify a set of modelling tools, and perform an initial analysis of the impact of energy extraction at various potential tidal range and tidal stream energy extraction sites on the UK's Tidal Energy Resource.

The core of the Project is the development of a UK Continental Shelf hydrodynamic model, capable of representing the effects of alternative tidal range and tidal stream site combinations, and assessing their potential interactions.

In support of the UK Continental Shelf model, other models will be developed by this Project to provide a toolkit to allow future investigations should that be required, and to complement the work underway in the PerAWAT project.

The ETI expects that any computer models generated by a Project are delivered to the ETI and therefore should use widely available software languages/computer codes and be capable of being hosted on unmodified desktop PCs. If a Respondent is unable to meet this requirement within the time and budget constraints of this Project, they should clearly indicate within their response why this is the case, and how they propose to provide the capability for the ETI and its Members to access UK Continental Shelf modelling in the future, and their commitment to open access once this Project has been completed.

The Project is a modelling Project, and should NOT include the collection of physical calibration data beyond published sources; a detailed analysis of the supply chain; matching of energy production to demand (beyond assuming that smoothing the supply through individual cycles and maximising energy yield are desirable); or grid reinforcement and extension costs beyond costs incurred in transmission of the scheme outputs to the nearest realistic grid connection point (the ETI is happy to advise on this point).

The development and use of the models, as well as their verification may require the use of either Participants' own data or third party data. The ETI expects Respondents to ensure that these data, for example bathymetry data, or any derived data, are free and unencumbered for the ETI and its members to use beyond the conclusion of this Project if such use is required to run any models generated. However, if any costs are required to ensure this requirement is met, they should be included within the scope of the Respondents' proposal for the Project. Further, if there are costs associated with the licensing of data for use in the future this must be clearly identified in the proposal.

The ETI is willing to provide further relevant data on request to the successful Respondent, subject to any confidentiality constraints, regarding the output data capabilities of the PerAWAT models.

#### 1.5.2 Work Package Descriptions and Deliverables

Respondents should determine the most appropriate way to organise and structure their programme of work to deliver the desired Project outcomes.

The ETI suggests a possible series of work packages, tasks and deliverables in section 1.5.3. Respondents may choose to use this Work Breakdown Structure (WBS) or to propose their own. In either case, the Respondents should ensure that the choice and definition of work packages and tasks is consistent and sufficient to deliver the Project outcomes.

If Respondents choose to propose their own WBS they should review the ETI suggested approach to improve their understanding of the type and number of deliverables expected, and to better understand assumptions and limitations.

The Respondents' proposal should clearly identify the proposed Work Breakdown Structure, task breakdown within work package, deliverables, and the flow of activity from one package to another.

#### 1.5.3 ETI suggested Work Breakdown Structure and Deliverables

The ETI suggests the Project is organised into technical work packages, and offers the following descriptions as a suggestion for Respondents:

- WP 1 – Characterise the UK Tidal Energy resource, and determine likely sites for tidal range and areas for tidal stream systems.
- WP 2 – Develop a UK Continental Shelf model, including simple, parameterised representations of the effects of tidal range and tidal stream energy extraction.
- WP 3 – Develop a series of scenarios to investigate interaction effects, and to perform a sensitivity analysis on the parameterised representations of the effects of tidal range and tidal stream extraction within the model.
- WP 4 – Use the model to assess the interactions and analyse the effects in each of the scenarios.
- WP 5 – Develop a parameterised Cost of Energy model which can be used to further refine the list of likely tidal range sites based on technology choices and advances in the future.
- WP 6 – Develop a Tidal Range model of a representative site capable of modelling different technology choices and advances in the future, and capable of providing parameterised representations of the effects of tidal range extraction for use in the UK Continental Shelf model.
- WP 7 – Conduct a workshop with members of the PerAWAT project, to produce an agreed interface specification determining the outputs required from detailed Tidal Stream models necessary to provide parameterised representations of tidal stream systems for use in the UK Continental Shelf model.

Work packages 1 and 3 should be completed before significant work is undertaken in work package 2. This represents model definition and how the model will be used within the Project, and will be subject to a Stage Gate Review. See section 1.8 for more detail.

Following the Stage Gate review work packages 2 and then 4 may be completed. Work packages 5, 6, and 7 are not interdependent with work packages 1, 2, 3 and 4, and as such they may proceed in parallel, noting the requirements to demonstrate the loose coupling of the tidal range model produced in work packages 6 with the UK Continental



Shelf Model of work package 2, and that early completion of work package 7 may simplify elements of work package 1.

#### Work Package 1 – Resource Characterisation

This initial work package involves reviewing the present evidence base and existing methodologies<sup>2</sup> to identify generating sites of interest; to establish boundary limits for the UK Continental Shelf Model; and to provide a preliminary estimate of total practicable UK tidal resource and technically feasible sites.

This work package should include the following:

- a) Develop tidal site characteristic requirements for potential tidal range schemes (tidal range, current, basin area, depth, and potential energy) for all UK tidal areas with a mean range exceeding 4m ( $M2 > 2.0m$ ) and list potential barrage and lagoon schemes exceeding 100MW peak power. Review technically feasible modes of operation for those tidal range schemes that maintain at least 80% of the natural tidal range in line with expected environmental consenting requirements, and produce preliminary power and energy output estimates.
- b) Review locations for tidal stream farms based on previous studies and list potential areas, water depth, extent, and estimated power and energy output for tidal farms that are considered viable.
- c) Define and justify the geographic boundaries for the UK Continental Shelf Model based on the above and any other supporting evidence.
- d) Define the requirements for the UK Continental Shelf model including the simple, parameterised representations of the effects of tidal range and tidal stream energy extraction.

Respondents should explain what sources of data will be used in this work package, what approach will be taken and how this builds on existing knowledge, especially that of the subcontractors or Consortium members.

Deliverables shall include:

- a) A technical report covering output from the work package including preliminary resource estimates for all feasible tidal range and tidal stream schemes in the UK exceeding 100MW peak power in size.
- b) A requirement document covering the scope and architecture of the UK Continental Shelf model.
- c) Any computer models used in the estimation of resource and written instructions in their use.

#### Work Package 2 – UK Continental Shelf Model Development

Develop a UK Continental Shelf hydrodynamic model with a demonstrable method of loosely coupling with more detailed tidal range and tidal stream hydrodynamic models, which may be run separately, and is capable of running multiple scenarios based on differing site predictions for tidal range and tidal stream systems.

This work package should include the following:

- a) Construct a computational model of the UK Continental Shelf compliant with the requirements defined in work package 1.
- b) Verify the model against observed current tidal elevation and mass flux data at the UK and European scale and account for any identified discrepancies.

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<sup>2</sup> This is not expected to be more than a critical review of the existing evidence, including, for example, the 2005 study by Black & Veatch, Phase II UK Tidal Stream Energy Resource Assessment.



- c) Develop and demonstrate a method for loosely coupling detailed tidal range and tidal stream hydrodynamic models to the UK Continental Shelf Model, and account for any identified discrepancies. The method chosen should allow for a high level, but sufficient, representation of differing tidal range and stream systems and should allow for a sensitivity analysis of key assumptions.

Respondents should explain which software languages/computer codes will be used, how the model will be constructed, how calibration will be completed, what data sources will be used, and what computational resources are required and their availability. Respondents should provide clear statements of capability and how this work package will build on existing knowledge. Major capability gaps in commercial codes required to deliver this part of the Project should be identified and any required code development reported as a required task for this work package.

Deliverables shall include:

- a) A technical report describing the model functionality and limitations, and the results from the verification exercises.
- b) the UK Continental Shelf Model and written instructions in its use. The model should use commercial software languages/computer codes and be suitable for use on a standard Desktop PC. Note however, the possible exception to this explained at the beginning of section 1.5.1.

### Work Package 3 – Scenario Development

This work package develops the scenarios to be investigated using the UK Continental Shelf Model. This work package therefore needs to define combinations of site choices for tidal range and tidal stream energy extraction around the UK shores, in order to fully investigate interaction effects. The Respondent should propose the number of scenarios to investigate, but the ETI would expect this to number less than 50. In addition, this work package should design a sensitivity analysis to explore the sensitivity of the results to differing technology choices in the parameterised representations of tidal range and tidal stream.

This work package should include the following:

- a) A definition of, and rationale for, scenarios to be investigated in work package 4 using the UK Continental Shelf model, including variation in the selection of sites for both tidal range and tidal stream energy extraction.
- b) Defining a sensitivity analysis which will examine the sensitivity of the UK Continental Shelf Model results to the choice of tidal range and tidal stream representation assumptions, i.e. the characteristics of the technologies chosen.

Deliverables shall include:

- a) A technical report explaining and justifying the choices of scenario and a description of the sensitivity analysis to be performed.

### Work Package 4 - Analysis

This work package provides a high-level assessment of the UK tidal energy resource in each of the scenarios identified in work package 3. These insights should include both localised effects (e.g. around the Pentland Firth) for tidal stream, UK wide effects, and wider European shoreline effects. The work package should also investigate the sensitivity of the results to the technology choices assumed within the parameterisation of the representation of tidal range and tidal stream energy extraction. This sensitivity analysis has been identified in work package 3.

This work package should include the following:

- a) Execution of the scenarios developed in work package 3.
- b) Execution of the sensitivity analysis developed in work package 3.
- c) Analysis of the results to assess the impact of changes in the energy field on the performance of the tidal range and tidal stream schemes, and an evaluation of the energy yield in each scenario, including an understanding of the impact of coupling effects on individual sites, and the sensitivity to site, build order, technology choice, etc. The analysis should include a visualisation of the data/outputs. The Respondent should explain in their proposal how the data/outputs will be presented.
- d) Identifying the critical factors that should be considered in optimising tidal range and tidal stream systems. The respondents should propose these factors, but they should include: overall cost of energy; impact on valuable natural habitats, impact on sea defences; time series interactions (i.e. the final overall scheme significantly alters the economics or design requirements of individual schemes to an extent that build order impacts viability); and the impact of overall scenario and individual scheme design on the smoothing and control of power production.
- e) An exploration of the degree to which the choice of sites could be optimised against the critical success factors and an evaluation of the likely computational and labour intensity of this optimisation.

Deliverables shall include:

- a) A technical report on the conclusions of the work package including a summary of the key schemes and insights, a visual representation of the data/outputs, and a report on the sensitivity of the results to any assumptions.

Respondents should note that the ETI may wish to make elements of this work package available to the wider marine industry and the general public, and therefore it is important to ensure that all outputs from this work package will be free from or unencumbered by background and 3<sup>rd</sup> party intellectual property.

#### Work Package 5 - Cost of Energy Model

Develop a simple parametric Cost of Energy model for tidal range systems which can be used in future to refine the list of candidate tidal range sites based on differing technology assumptions. It is for the Respondents to determine the most appropriate approach, but the ETI expects this work package to take no more than a month to complete, and for example, to be built using a spreadsheet.

This Work Package should include the following:

- a) Review construction and deployment methodologies and operational maintenance experience for tidal range technologies.
- b) Develop a flexible parametric installation cost and cost of energy model. Parameterisation for tidal range should be on the basis of operating mode, tidal range, average water depth, impounded basin volume, installed capacity and energy yield, and length of installation.
- c) Explore the limits of currently foreseen technologies on the Cost of Energy of tidal range systems.

Deliverables shall include:

- a) A technical report on the assumptions and conclusions of the work package, including the choice and justification of input parameters related to currently foreseen technologies.
- b) The cost of energy model and associated documentation, including limitations of the model.

### Work Package 6 – Detailed Tidal Range Model

Detailed models are required to enable developers to work separately from the UK Continental Shelf Model to optimise the selection of scheme operating modes and to assess environmental impacts in an efficient manner. The detailed models must be able to draw appropriate boundary conditions from the UK Continental Shelf Model and to generate inputs to that model appropriately.

The ETI is currently developing detailed models of tidal stream systems in the PerAWAT project. This work package will develop a hydrodynamic model of a tidal range system capable of representing the effect of the installation on the local environment and optimising energy output for any given technology solution. The level of the representation is for the Respondents to propose, but it must characterise the effect the system has on the environment, and be structured such that feedback effects can be re-integrated into the UK Continental Shelf Model. It must also allow different technology solutions and assumptions to be investigated through the manipulation of model inputs.

This Work Package should include the following:

- a) Select and justify a Reference Site to support development of the model and its validation.
- b) Develop a requirement specification for a computational model of the Reference Site compliant with the input requirements for the UK Continental Shelf Model.
- c) Develop an interface specification capturing the requirements to be met for the Tidal Range model to be loosely coupled to the UK Continental Shelf Model, such that alternative Tidal Range models may be integrated at a future date if desired.
- d) Construct and document the model, such that it can be understood and used by a third party.
- e) Validate the model against publicly available observations of tidal elevation and mass flux data and report / account for any discrepancies.
- f) Compare the model against the boundary conditions in the UK Continental Shelf Model and report / account for any discrepancies.
- g) Develop and refine the model to represent a tidal range scheme at the Reference site in a form such that different technologies may be tested through the selection of input parameters.
- h) Select and justify a number of possible future technology solutions for tidal range systems and parameterise these for model usage. The Respondents should determine the appropriate number of technology solutions to investigate, but the ETI expects less than five, and these should be agreed with the ETI.
- i) Run the model to determine energy yield using each of these possible future technology solutions for tidal range systems.
- j) Demonstrate the transference of boundary conditions from this model to the UK Continental Shelf Model.

Respondents should explain which commercial software will be used to create the model, how the model will be constructed, how calibration will be completed, and what data sources will be used. Respondents should provide clear statements of capability and how this work package will build on existing knowledge. Major capability gaps in commercial codes required to deliver this part of the Project should be identified and any required code development reported as a required task for this work package.

Deliverables shall include:

- a) A technical report describing the model and its construction, how boundary conditions are transferred between the model and the UK Continental shelf models, instructions for use, selection and justification of technology assumptions, results from model runs and the conclusions drawn.
- b) An interface specification for Tidal Range models
- c) Working copies of the model and written instructions in their use. These models should use commercial software languages/computer codes and be suitable for use on a standard Desktop PC.

#### Work Package 7 - Interface Specification for Tidal Stream Models

The ETI is developing detailed models of tidal stream systems in the PerAWAT project. Those detailed models and the UK Continental Shelf Model should be capable of being loosely coupled. This will require co-ordination between this Project and the PerAWAT project team.

This work package will develop and run a workshop with members of the PerAWAT team to define a mutually agreeable interface specification to ensure the PerAWAT models are able to produce the required data to couple with the UK Continental Shelf Model in the future.

Deliverables shall include:

- a) A workshop with the PerAWAT team, resulting in a technical report describing the agreed interface specification.

#### 1.5.4 Value Proposition to the ETI

Whilst the creation and capture of value can take many forms, in this specific Project the ETI expects to achieve value in the following areas as a minimum:

- Creation of a modelling resource which is readily accessible to the ETI and its members to support their own investment and planning decisions.
- Addition to the publicly accessible knowledge base surrounding the UK's Tidal Energy Resource.

Respondents are expected to clearly describe how their approach will create value in these two areas and others as appropriate.

#### 1.5.5 Acceptance Criteria

The Respondent should include a schedule of deliverables, their scope, and proposed acceptance criteria in their proposal. Deliverables should include technical deliverables (e.g. reports, models etc) and Project Management Deliverables (e.g. Stage Gates, Design Reviews, Project Reviews etc). Section 1.8 identifies Project Management deliverables required by the ETI.

Technical reports will need to be reviewed and agreed by the ETI. Acceptance of each report will be achieved if it is of sufficient quality and provides sufficient detail to enable the required outcomes and critical success factors outlined in section 1.4 to be met.

Respondents are encouraged to submit report drafts to the ETI in advance of the agreed schedule dates for deliverables, to ensure a smooth acceptance process.

If the Respondent chooses to adopt the ETI suggested WBS from section 1.5.3, the following table would summarise the deliverables from 1.5.3 and 1.8.

<b>Title</b>	<b>Deliverable Scope</b>	<b>Additional Acceptance Criteria</b>
WP1 – Technical Report, Requirements Document, Resource estimation models	See section 1.5.1	A presentation of this material will also be required as part of the Stage Gate Review.  The Stage Gate Review will be a “go or no-go” decision point in the Project.
WP2 – Technical Report, UK Continental Shelf Model	See section 1.5.1	The respondent should propose how the UK Continental Shelf Model will be Design Reviewed. The ETI may wish to attend this process.  The ETI will test the model and user instructions by attempting to run the model without the support of the Respondent.
WP3 – Technical Report	See section 1.5.1	A presentation of this material will also be required as part of the Stage Gate Review.  The Stage Gate Review will be a “go or no-go” decision point in the Project.
WP4 – Technical Report	See section 1.5.1	A presentation of this material will also be required as part of Project Review # 1
WP5 – – Technical Report Cost of Energy Model	See section 1.5.1	A presentation of this material will also be required as part of Project Review # 2  The Respondent should propose how the Cost of Energy Model will be Design Reviewed. The ETI may wish to attend this process.  The ETI will test the model and user instructions by attempting to run the model without the support of the Respondent.
WP6 – Technical Report, Interface Specification, Tidal Range Model	See section 1.5.1	A presentation of this material will also be required as part of Project Review # 2  The Respondent should propose how the Tidal Range Model will be Design Reviewed. The ETI may wish to attend this process.  The ETI will test the model and user instructions by attempting to run the model without the support of the Respondent.
WP7 – Interface Specification	See section 1.5.1	A presentation of this material will also be required as part of Project Review # 2
Stage Gate Review	See section 1.8	This will be a one day review held at the ETI offices to the satisfaction of the ETI.  The Stage Gate Review will be a “go or no-go” decision point in the Project.

		A draft of the Presentation material is required at least 2 weeks in advance of the Stage Gate Review.
Project Review # 1	See section 1.8	This review will include a briefing of the analysis results from the UK Continental Shelf modelling, as well as a review of the model limitations, and overall conclusions.  This Project Review should be held at the ETI's offices to the satisfaction of the ETI.  A draft of the Presentation material is required at least 2 weeks in advance of the Project Review.
Project Review # 2	See section 1.8	This review will include a briefing of the results from Work packages 5, 6 and 7.  This Project Review should be held at the Respondent's offices to the satisfaction of the ETI.  A draft of the Presentation material is required at least 2 weeks in advance of the Project Review.
Dissemination Event	See section 1.8	A draft of the Presentation material is required at least 4 weeks in advance of the Dissemination Event.

#### 1.5.6 Project Timescales

Respondents are expected to include a detailed schedule in their response. However, the ETI expects this Project to take approximately 1 year, and must be completed by the end of October, 2012 at the latest.

#### 1.6. **ETI and State Aid**

Funding from the ETI for this Project will constitute state aid. The ETI has a specific state aid clearance from the European Commission. In relation to their Proposals, Respondents should note:

- a) Further information may be required to support the specific state aid requirements of any Proposal during the procurement process.
- b) Successful Respondent(s) will be required to provide certain details of costs throughout the Project to ensure both the Participant(s) and the ETI comply with EU state aid law.
- c) Participants will need to agree to certain contractual obligations related to the state aid requirements including the duration of Project records and obligations to return ETI funding in certain exceptional circumstances.

#### 1.7. **Project Organisation Structure**

It is possible that a number of Participant organisations / entities may be required to work together in order to provide all the necessary knowledge, skills, experience and inputs to complete the Project. In this case Participants may choose either:



- a) to form sub-contracts between themselves and one of their number who shall act as 'Prime Contractor', who shall form a contract with the ETI, and shall manage the Project and act as primary interface with the ETI; or
- b) to form a Consortium, contracted with the ETI, governed by its own Consortium Agreement and led by a 'Lead Coordinator' to manage the Project and act as primary interface with the ETI.

The ETI has a strong preference for the contracting structure to be based on the Prime Contractor arrangement. However, in both cases there must be a single organisation (Lead Coordinator or Prime Contractor) leading and acting as the primary interface with the ETI. This organisation shall appoint a Project Manager to lead and coordinate all activities of the Project Participants, and to liaise regularly with the ETI's Project Manager to whom he/she is accountable on behalf of the Participants. This organisation shall also act as the Respondent for the purposes of this Request for Proposals.

Under either contracting arrangement, it is critical that the Lead Coordinator or Prime Contractor is sufficiently empowered to lead the Project and accept accountability for delivery to the ETI. It is also important that the arrangements enable sufficient flexibility for ongoing delivery optimisation to maximise value for money and achieve the Project aims and critical success factors. In the case of option (a) above, in which there is no natural contractual hierarchy, bidders are required to explain fully in their Proposal the agreed principles of their Consortium Agreement.

It is a requirement that the ETI approves:

- a) any Consortium Agreement;
- b) any Subcontractor (and may review Subcontracts).

The ETI places great emphasis on two critical roles in major projects – Project Manager and Chief Technologist.

The Project Manager is responsible for managing and progressing the project team and programme of work to time and cost, handling information flows and commercial issues, ensuring effective team-working and the continued engagement and support of key stakeholders. In essence this responsibility is to make sure that the ETI benefits from a result at the end of the programme of work that meets the agreed outcomes within time and cost.

The Chief Technologist is responsible for the technical quality and content of the work, ensuring the competence of key technical staff allocated to individual work packages, the effective review of key outputs and the effectiveness of detailed technical planning to ensure that the emerging results of work are fed back into the forward plan. In essence this responsibility is to assure the technical quality of the Project and its outcomes.

The ETI will assess the competence, experience and authority of these two people and their ability to work together as critical to Project success. The ETI expects these two roles to be filled by the same people throughout the life of the Project. The Project Manager and Chief Technologist do not need to be from the same Participant organisation.

Respondents should identify specific separate named individuals for these key positions, including deputies, and other key roles as appropriate. Respondents should state the amount of each individual's time which will be dedicated to the Project, and detail their experience – with CVs included in an Appendix (maximum 2 pages per individual).



## 1.8. Project Governance

Throughout the duration of the Project the ETI expects to hold monthly review meetings with the Project Manager and Chief Technologist, which may be at the ETI or contractor's premises as appropriate. The ETI may involve advisors, external consultants, key industrial stakeholders, or representatives from the ETI member organisations as appropriate.

The ETI expects the Project will contain a Project Kick Off meeting, one Stage Gate Review, two Project Reviews and a stakeholder dissemination event. The timing and scope of the reviews are as follows:

**Project Kick Off:** This will be held within two weeks of the Project start date. The purpose of the meeting is to review within the team and the ETI the scope of the Project, planned timescales, deliverables, and the way of working and interfacing with the ETI. It is anticipated that this review will be held at the contractor's premises and take no longer than one day.

**Stage Gate Review 1:** The purpose of the stage gate review is to review and confirm that the requirements for the UK Continental Shelf Model are clear, understood, and the model development and planned scenarios will satisfy the required outcomes and critical success factors, outlined in Section 1.4.<sup>3</sup> It is anticipated that this review will be held at the ETI premises and for planning purposes will take no longer than one day. On completion and acceptance of the Stage Gate Review the Project shall be able to undertake UK Continental Shelf model development and then to use this model.<sup>4</sup> Respondents may begin work on model development prior to this Stage Gate Review at their own risk.

**Project Review 1:** This will be held on completion of all UK Continental Shelf Model development, testing, analysis and the technical report. The purpose is to review the results of the modelling analysis and any model limitations within the delivered set of models and tools and to provide the ETI with a summary of the key findings, conclusions, recommendations, and presentation material ahead of the stakeholder dissemination event described below. It is anticipated that this review will be held at the ETI's premises and take no longer than one day.

**Project Review 2:** This will be held on completion of the planning work associated with the remainder of the scope of work<sup>5</sup> at a suitable point in the schedule. The purpose is to review these Work Packages to ensure that the planned approach and assumptions will meet the required outcomes and critical success factors, outlined in Section 1.4. It is anticipated that this review will be held at the contractor's premises and take no longer than one day.

**Stakeholder Dissemination:** This will be held at the end of the Project on completion of all tests and data analysis. The purpose is to brief the ETI and its stakeholders on the Project, test results, key findings, conclusions and recommendations for further work. It is anticipated that this event will be held at the ETI's premises and take no longer than one day.

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<sup>3</sup> Stage Gate will be held on completion of Work Packages 1 and 3 if the ETI suggested WBS is adopted.

<sup>4</sup> i.e. Work Packages 2 and 4 if the ETI suggested WBS is adopted

<sup>5</sup> i.e. Work Packages 5, 6, and 7 if the ETI suggested WBS is adopted

## 2. Procurement Process and Estimated Timeframes

### 2.1. Response to Request for Proposal

Respondents shall notify the ETI of their intention to submit a proposal. This notification shall be in writing to the Address for Submission of Proposals, no later than the Deadline, all as listed on the front cover of this RFP. Respondents shall also return a signed Non Disclosure Agreement (NDA) at the time of notifying the ETI of their intention to bid. Once received, the ETI will supply the respondents with copies of the ETI's standard terms and conditions of the draft Project Contract. The ETI has also set aside a date where meetings can be arranged with Respondents to answer any clarification questions.

The ETI plans to hold a Selection Panel where Respondents may be required to present their bid and answer questions. The Selection Panel, in addition to ETI staff, may include experts selected by the ETI to provide the necessary expertise to consider the technical, commercial, legal and financial aspects of each bid. This may include experts drawn from ETI Members and third parties.

The following timetable outlines the anticipated schedule for the procurement process. The timing and the sequence of events resulting from this Request for Proposal may vary and shall ultimately be determined by the ETI.

Event	Anticipated Date(s)
Deadline for Notification of Intention to Submit a Proposal	9 <sup>th</sup> March, 2011
Deadline for returning signed NDA by all Participants	9 <sup>th</sup> March, 2011
Bidders clarification meetings	14 <sup>th</sup> March – 15 <sup>th</sup> March
Closing Date for Responses to RFP	28 <sup>th</sup> March, 2011
Possible presentation to the ETI	w/c 11 <sup>th</sup> April, 2011
Preferred Respondent(s) Notified	21 <sup>st</sup> April, 2011
Project Detailing and Contract Negotiation	8 weeks
Contract Award	End June
Project Start	Mid July
Estimated Project Duration	12 months

### 2.2. Project Shaping and Contract Negotiation

Following selection of a preferred Respondent (or Respondents), a process of detailing the proposal, due diligence and contract negotiation will be entered into. An overall period of approximately 8 weeks has been allowed for this phase. This will include (as required and dependent on the level of detail provided in the Respondent's proposal):

- a) Negotiation and agreement of the detailed commercial offer;

- b) Detailing of the proposed technical programme, including definition of deliverables and acceptance criteria;
- c) Detailing and agreement of Project Stage Gates and Reviews, where Project performance, and the business case are critically reviewed and decisions taken on whether to proceed with the Project;
- d) Detailing and due diligence relating to the breakdown of costs of the Project;
- e) Further intellectual property due diligence;
- f) Other due diligence activities as required: refer to Appendix C for further details;
- g) Negotiation and agreement of outstanding contractual issues;
- h) Agreement (and approval by the ETI) to terms of other key contractual arrangements (eg Sub-contracts, Consortium Agreement, if required);
- i) Gaining all necessary Respondent and ETI approvals to undertake the Project; and
- j) Any further information or assessment that may be necessary to meet state aid requirements.

Respondents are required to identify and provide a plan to address Project Shaping and Contract Negotiation and confirm that they will be able to make the key technical, commercial and legal resources available to meet the deadline.

### 3. Request for Proposals Process and Terms

#### 3.1. Content and Format of Submissions

Interested organisations are required to make a collective Submission through their nominated Respondent as described in Section 1.7 above. The Submission shall comprise five components.

1. Detailed Proposal, arranged according to the structure set out in Appendix A. The content must clearly demonstrate how the bidding organisation/Consortium will meet the requirements and criteria set out in Sections 1 to 4 of this Request for Proposal. The Proposal must be written in a succinct manner and must not include imprecise statements, generalities or repetition. The Proposal must be easily readable with appropriate font sizes (11pt or larger), margins, etc, and **shall not exceed a maximum of 30 pages**.
2. Supporting information as specifically set out in Appendix A.
3. Risk Register, as described in Appendix A, Section 8.
4. Due-diligence information as set out in Appendix C.
5. Statement of Compliance and, if appropriate, supporting information, confirming compliance with or identifying exceptions to the specification or contractual requirements, as set out in Appendix D. This must be signed by the Respondent: if a Consortium structure is proposed, every member organisation of the Consortium must provide a separate Statement of Compliance.

Additional information (such as organisational brochures, etc) may be provided to accompany the Submission, but such additional information will not be taken into account when reviewing Proposals.

The Submission shall consist of **one (1) hard copy, with each component separately bound, and one (1) electronic copy**. The latter shall be provided in both PDF and Microsoft Word formats.

#### 3.2. Acceptance, Review and Selection of Proposals

Proposals will be reviewed and judged primarily against the criteria listed below and the supporting evidence supplied. Failure to meet minimum standards in any criterion may result in the ETI rejecting a Proposal.

Proposals will be reviewed and judged primarily against the criteria listed below:

- Completeness of information content, structure and quality of Proposal (against areas listed in Appendix A).
- Compliance with technical specification (i.e. Section 1.5 of this RfP).
- Knowledge, skills and experience, which must include ALL of the following. A table should be provided to identify which Participant(s) is/are proposed to satisfy each of the following criteria:
  - (a) Generic Criteria:
    - Availability and stability of deployable resources to mobilise sufficiently rapidly and for sufficient durations.
    - Record and ability in quality, timely and on-budget delivery (of technology programmes) to the full satisfaction of the main stakeholders.
    - Knowledge and previous experience of industry, environment, technologies, and of this type of study, etc.

- Ability and experience in collaborative working.
  - For the lead organisation particularly, project management expertise.
- (b) Specific Technical Criteria:
- Modelling and analysis of tidal systems at national scale.
  - Modelling and analysis of tidal systems at a scheme or farm scale.
  - Integration and coupling of multi-scale computational models.
  - Design and performance analysis of tidal generation machinery.
  - Design, selection and analysis of tidal generation schemes.
  - General understanding of the installation and operation of tidal stream and tidal range technologies.
  - General understanding of the operation of the UK electricity system.
- (c) Commercial Criteria:
- Value for money.
  - Effectiveness of the contracting, organisational, governance and control structures and processes proposed for the participating entities / organisations.
  - Project approach and plan, including Gantt chart, suitable stage gates & payment milestones, and proposed management of specific risks and issues.
  - Respondent's willingness to materially comply with the terms and conditions of the proposed Project Contract.
  - Demonstration that there are no material Background IP (including third party IP) which would prevent the Project proceeding or the Arising IP being exploited.
  - Appropriate proposal to deliver and/or manage and make available after the Project any Models created during the Project.

### 3.3. Disclaimer Notice

- a. The ETI at its discretion may request clarification of a Proposal, and may reject any Proposal which is unclear.
- b. Neither the issue of any documentation in the Request for Proposals process nor any of the information presented in it should be regarded as a commitment or representation on the part of the ETI or any other person to enter into a contractual arrangement. The Request for Proposals is not an agreement to purchase goods or services, and the ETI is not bound to enter into any contract with the Respondent. By responding to this Request for Proposals, the Respondent does not commit itself to entering into a contract with the ETI.
- c. All decisions made by the ETI relating to the acceptance, review and selection or otherwise of Proposals are final.
- d. All documents, including Proposals, submitted to the ETI become the property of the ETI. They will be received and held in confidence by the ETI, subject to the terms of the Non Disclosure Agreement (Appendix E). No part of a Proposal, or documents provided by Respondents, shall be returned.

- e. The ETI reserves the right to (i) change the basis of, or the procedures for, the Request for Proposals process, including the timetable or Closing Date, (ii) make modifications to, or alter any of the information within, the Request for Proposals at any time until the execution of the Project Contract, (iii) reject any or all of the Proposal received, and (iv) not invite any Respondent to proceed further. In cases (i) and (ii) the ETI shall provide a minimum of five working days written notice.
- f. Neither the ETI nor any of its agents or advisers accepts any liability or responsibility for the accuracy, adequacy or completeness of any of the information provided or any opinions contained in this Request for Proposals or of any other information made available during the Request for Proposals process. No representation or warranty, express or implied, is or will be given by the ETI or any of its agents or advisers with respect to such information provided or opinion given therein. Any liability is thereby expressly disclaimed.
- g. Respondents must assess the information and terms contained in this Request for Proposals independently, having taken professional advice if necessary. The Respondent will be deemed to have examined all the documents enclosed with this Request for Proposals and by its own independent observations and enquiries will be held to have fully informed itself as to the nature and extent of the requirements of the Request for Proposals. The Respondent must rely on its own enquiries and on the terms and conditions contained in any agreement, when and if finally executed, subject to such limitations and restrictions as may be specified therein.
- h. Respondents shall be wholly responsible for the costs they incur in the preparation and submission of their responses to the Request for Proposals. The ETI shall not be responsible for, and shall not pay, any costs and expenses which may be incurred by the Respondent in connection with its participation in the Request for Proposals process, including but not limited to any costs or expenses incurred up to the execution of the Project Contract.
- i. The ETI may, at its discretion, shortlist Respondents for the next phase. The ETI does not undertake to accept the lowest bid or to accept part or all of any Proposal and the acknowledgement of receipt of any Proposal shall not constitute any actual or implied agreement between the ETI and the Respondent.
- j. The submission of a Proposal will confirm acceptance of the foregoing provisions by the Respondent without qualification. Any attempt to qualify any of the foregoing provisions in this Disclaimer Notice, either expressly or impliedly, may result in a Respondent being disqualified.
- k. The copyright in the documentation and any other materials supplied by the ETI and/or its advisers in this Request for Proposals process, in whatever format, belongs to the ETI or its appointed advisers. Such documentation and materials may not, either in whole or in part, be copied, reproduced, distributed or otherwise made available to any other third party or used without the prior written consent of the ETI, except in relation to the preparation of the Proposal in the course of the Request for Proposals process. All documentation supplied by the ETI in relation to this Request for Proposals process must be returned on demand, without any copies being retained by the Respondent.
- l. This Request for Proposals, and any dispute or claim arising out of or in connection with it (including any dispute or claim relating to non-contractual obligations), shall be governed by and construed in all respects in accordance with the laws of England and Wales and the parties agree that the Courts of England and Wales

shall have exclusive jurisdiction to settle any dispute or claim arising out of or in connection with this document (including any non-contractual disputes or claims).



#### 4. Project Funding and Payment

The ETI intends to fund this Project on a “**fixed price**” basis, so that the level of the ETI Funding which may be provided is fixed at an amount agreed with the successful Respondent(s) prior to the Agreement.

The ETI intends to fund this Project to a fixed amount of the order of £450,000. The ETI may consider proposals that are significantly above or below £450,000. However, in these circumstances, the Respondents will be expected to set out:

- A full proposal for scope of work and value against the planned budget of £450,000;
- Why a different level of funding is appropriate;
- In an additional and separate section provide full details of the incremental work over and above the planned budget of £450,000; and
- The benefit and value that this additional work would provide.

The successful bidding organisation will have to demonstrate the significant progress they aim to achieve in the state of the art within the time and funds available.

The Project Contract will include defined deliverables, with acceptance criteria, and defined Payment Milestones by which one or more deliverables will have been completed. Payments will be made against each defined Payment Milestone, subject to the ETI acceptance of the Milestone Completion Report. Unless otherwise agreed as part of a formal contract variation process, the ETI shall not be liable for any payments above the maximum stated in the Project Contract.

The ETI’s expectation is that the following payment milestones will be included:

**Payment milestone 1** – on completion and acceptance of the following deliverables:

1. Technical Report (as described in example WBS, WP1)
2. Requirements Document (as described in example WBS, WP1)
3. Resource Estimation Models (as described in example WBS, WP1)
4. Technical Report (as described in example WBS, WP3)
5. Stage Gate Review

**Payment milestone 2** – on completion and acceptance of the following deliverables:

1. Technical Report (as described in example WBS, WP2)
2. UK Continental Shelf Model<sup>6</sup> (as described in example WBS, WP2)
3. Technical Report (as described in example WBS, WP4)
4. Project Review #1
5. Dissemination Event

**Payment milestone 3** – on completion and acceptance of the following deliverables:

1. Technical Report (as described in example WBS, WP5)
2. Cost of Energy Model( as described in example WBS, WP5)
3. Technical Report (as described in example WBS, WP6)

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<sup>6</sup> if deliverable – see 1.5.1

4. Interface Specification (as described in example WBS, WP6)
5. Tidal Range Model (as described in example WBS, WP6)
6. Interface Specification (as described in example WBS, WP7)
7. Project Review #2

## **5. Terms and Conditions for Project Contract**

During the Project Detailing phase, a Project Contract will be drawn up by the ETI based on its standard contracts for such work and incorporating appropriate information from the ETI's Request for Proposals and the Respondent's Proposal and information drawn up and agreed during the Project Detailing and Contract Negotiation Stage. Full terms and conditions will be agreed at that time, but a Summary of Terms is included in Appendix B. On receipt of the properly executed non-disclosure agreement, the ETI will release a template of the Project Contract to the Respondent.

If the Project is to be undertaken by a Consortium, then the Consortium members will be required to execute a Consortium Agreement between all parties prior to signature of the Project Contract with the ETI. The ETI may request a copy this Agreement for review / approval, and a Model Consortium Agreement is available from the ETI.

## Appendix A Content and Format of Proposals

The Proposal shall be arranged according to the structure defined below and shall explicitly include all the information listed.

### 1. **Executive Summary** *[maximum 1 page]*

A summary of the Proposal, describing briefly:

- The organisation / Consortium undertaking the work
- Summary of the technical approach and **key** deliverables
- Confirmation of compliance with the Specification detailed in the Request for Proposals and/or brief summary of **key** exceptions/deviations
- Total Project cost and duration.

### 2. **Project Objectives** *[typically ≤ ½ page]*

The overall Project objectives will be as specified in the Request for Proposals. The Respondent may provide subsidiary objectives if they think these are appropriate. The Respondent should also describe any Critical Success Factors which either characterise a successful Project outcome or which are required to facilitate a successful Project outcome.

### 3. **Background to Proposed Participants**

#### 3.1 **Project Participants** *[maximum 1 page per Participant]*

The Respondent should provide a brief description of each of the proposed Participant organisations, including any major Subcontractors including:

- Key skills, knowledge, experience and previous track record in the area (technical, commercial and project management, including any UK-specific issues such as technology applicability to UK systems, UK industry practice, UK market/industry knowledge, etc)
- Key staff members involved (including a designated Project Manager, and a designated Chief Technologist), with the amount of each individual's time and role which will be dedicated to the Project, and detailing their experience – with CVs included in an Appendix (maximum 2 pages per individual)
- Alternate resources available to be deployed in the event that the above key members become unavailable

#### 3.2 **Collaborative Working** *[typically 1 page]*

If the Project is to be undertaken by a group of organisations (whether as a Consortium or as Subcontractors), a table *[typically ½ page]* should also be provided to identify which Participant(s) is/are proposed to satisfy each of the specific criteria (skills, experience, etc) listed in the '3.2 Acceptance, Review and Selection of Proposals' section of the Request for Proposals.

Also if the Project is to be undertaken by a group of organisations (whether as a Consortium or as Subcontractors), evidence of previous collaborative working (or subcontract management as appropriate) should be provided, both within and outside the Participant group *[typically ½ page]*.

**4. Project Organisation and Management** *[typically 2 pages]*

The Respondent should provide Project organisational, project management, governance and control structures and processes (particularly for Consortia).

The Respondent should indicate in the structure each Participant (including the ETI) and the position of the key individuals identified in Section 3.1 (including the Respondent's Project Manager).

The Respondent should identify in their Proposal any foreseen issues or difficulties in executing a Consortium Agreement and/or subcontracts (as appropriate).

**5. Programme of Work** *[typically 5-10 pages]*

The Respondent should provide a summary of the overall approach to delivery of the Project, and a Task-by-Task breakdown of the proposed work, identifying for each Task:

- the Task leader
- other Participants involved
- key dependencies
- the technical approach (including use of any specific methodologies, techniques or tools)
- the Task objectives
- deliverables, including for each deliverable a specification (e.g. quality, appearance, scope, function and purpose as appropriate) and proposed Acceptance Criteria

Any issues or assumptions in defining the programme or schedule (e.g. inputs required from the ETI or other projects) should be explicitly stated.

A specific project management Task (or Tasks) should be identified describing all the activities in this area (e.g. regular meetings, reporting, Stage Gates etc).

If appropriate, a work flow diagram should be provided to illustrate the relationships between Tasks.

Any relevant activities related to but not included within this Project and the relationships with these activities, should also be described.

**6. Deliverables and Payment Milestones** *[typically 2 pages]*

Following the detailed specifications of each deliverable in the previous section, a summary table should be provided here listing all the Project Payment Milestones (i.e. key points in the Project where one or more Deliverables will have been provided and payment is requested from the ETI), and their constituent deliverables, with due dates for each deliverable and Payment Milestone.

Refer also to Appendix A Section 11.

**7. Project Schedule** *[typically 1 page]*

The Respondent should provide a time schedule for the Project (e.g. in the form of a Gantt chart) showing the main Work Packages, Project stages and main Tasks within each Work Package and stage. This should clearly identify:

- Task durations and dependencies (including any inputs required from the ETI or other parties and any other external dependencies)
- Project Deliverables
- Payment Milestones and other relevant milestones

- Project Stage Gates, if appropriate (i.e. major review point(s) in the Project).

## 8. **Risk Management** [*typically 2 pages plus risk register*]

The Respondent should describe the proposed Risk Management Strategy (i.e. how risks to the successful delivery of the Project will be identified and managed throughout the Project). They should also separately provide a Risk Register, identifying the key challenges, risks (including any assumptions or dependencies identified earlier), issues and opportunities which may affect the successful delivery of the Project outcomes and identifying planned activities to address / mitigate each item.

Whilst not being prescriptive about the style and format of the Risk Register, it is expected that it will:

- a) Show clear evidence of triage into: those risks which are so serious in terms of frequency and impact that they need to be kept under review by the Project leadership (and regularly shared with the ETI); those risks that are sufficiently serious that they need to be managed within the project team; and those risks which have been recognised but which are not judged as material;
- b) Identify the causes of the risk and the likelihood of them occurring during the Project;
- c) Identify the consequences of the risk and the scale of impact on Project delivery and key stakeholders;
- d) Identify the degree of knowledge or uncertainty about the risk;
- e) Identify who is the risk (or issue) manager;
- f) Show what actions are in place to reduce the likelihood of the risk materialising (controls);
- g) Show what precautions or provisions will be implemented to reduce the impact of the risk, should it occur (mitigation);
- h) Identify any actions in place to investigate or increase knowledge of poorly understood risks; and
- i) Identify any systems or actions that will be implemented to detect that a specific risk is developing, has started to occur or its likelihood or impact has increased (monitoring).

It is expected that no more than ten risks would be managed by the top team, rather more at the next level and many more that have been recognised with no further action planned. The ETI will only consider to the top two categories, but proposers may provide the complete register.

A summary of key risks should be included in the proposal, with a complete risk register as described above provided as a separate document.

## 9. **Health, Safety & Environment Management (HSE)** [*maximum ½ page*]

The anticipated work required for this study is a desk based study using available information. It is not anticipated that any site visits, field trials, experimental or laboratory work will be required.

Respondents must advise if any work which is not desk based is included in their Proposal. In those circumstances where non-desk based work is anticipated in the Project, the ETI will carry out a competency assessment of relevant Participants and

require the Participants to agree to an appropriate performance assurance framework that provides the ETI with ongoing assurance that health and safety is being proactively managed throughout the Project.

## 10. Intellectual Property [typically 2 pages or less]

### Arising IP:

Any Project commissioned by the ETI will be subject to the appropriate ETI terms and conditions: a summary of which is included in Appendix B.

The Respondent should provide a brief overview of the nature of any anticipated Arising IP from the Project.

In this Project, all Arising IP is to be owned by the ETI.

Any licensing of Arising IP from the ETI to the Participants may be discussed if appropriate. If Participants wish to discuss any licence to use the Arising IP, Participants should note that under state aid rules profit cannot be paid for the Project in addition to the grant of a licence of Arising IP.

### Background IP:

The Respondent should describe any Background IP (e.g. patents, proprietary data, computer algorithms, know how or other IP) only to the extent there is Background IP:

- which is needed (whether by the ETI, or to be licensed from one Participant to another Participant or a Subcontractor, or to be licensed by a Subcontractor to a Participant or to another Subcontractor, or otherwise) to carry out the Project or which may be used during the Project; or
- which may be needed by the ETI to exploit the Arising IP.

The description of any such Background IP should detail:

- the nature of the IP (including the legal nature of the IP right),
- rights to that IP, and
- ownership and control, whether this is by any of the Project Participants or by any third parties.

Please note that due diligence on Background IP will be required at both Stage 1 and Stage 2 (see Appendix C).

### Academic Institutions/Publishing:

Generally, the ETI will grant rights to Participants who are academic institutions for the purposes of academic research and teaching if requested. Publication of appropriate parts of the Project results will generally be permitted subject to an approval process. Participants should include details of their desired requirements in relation to academic research, teaching and publication in their Proposal.

## 11. Project Finances [typically 1 page]

The Respondent should provide as set out in the following table:

- a figure for the **total contract value**;
- a **breakdown** by Milestones; and
- for consortia or other Participant groups, **between Participants against each Milestone**.

If there are any assumptions or limitations to this price, these should be clearly stated.



	Date	Participant 1 (Lead Coordinator or Prime Contractor)	Participant 2	Participant 3	Participant 4	Participant 5	Total
Milestone 1							
Milestone 2							
Milestone 3							
<b>TOTALS</b>							

**12. Insurance** *[included – typically ½ page]*

Respondents should identify how they intend to insure against risks in the Project. The Respondents will need to work with the ETI and its insurers in the contract detailing stage to ensure appropriate coverage of Project risks.

**13. Contacts list** *[typically 1 pages]*

For each Participant or major sub contractor please provide contact details for the following personnel:

	Participant 1 (Lead Coordinator or Prime Contractor)	Participant or major sub contractor 2	Participant or major sub contractor 3	Participant or major sub contractor 4	Participant or major sub contractor 5
Organisation registered office	Address				
Technical lead	Name Address Tel Mobile Fax Email				
Project manager					
Contractual lead					
Finance lead					
Publicity lead					
Any other key personnel					

**14. Plan for Project Detailing and Contract Negotiation** *[typically 1/2 page]*

Respondents must clearly confirm in the submission that their key technical, commercial and legal resources will be available to meet the Contract Award deadline.

## Appendix B Summary of Terms and Conditions for Project Contract

### Introduction

The following represents a summary of the key contractual terms which the ETI would expect to be included in the Project Contract.

### Structure

1. Where the Project will be carried out by a Prime Contractor, the Prime Contractor will manage the Project. Where there are Subcontractors, the Prime Contractor shall be solely responsible for the management and coordination of the activities of the Subcontractors. The Prime Contractor will be responsible for and administer payment for all of its Subcontractors.
2. Where the Project will be carried out by a multi-party consortium, the Project Participants shall be represented in dealings with the ETI by a Lead Co-ordinator, who shall, in the majority of instances, be the intermediary for any communication between the ETI and the Project Participants. This role includes providing notices of meetings and other activities to the ETI, reviewing and commenting on Project reports (as required under the Project) and administering payment of invoices for all Project Participants.

### Project Management

3. The Prime Contractor or, in the event of a consortium, the Participants will appoint a Project Manager for the day-to-day management of the Project. The ETI will appoint a Programme Manager to act on behalf of the ETI with regards to the Project.
4. Where the Project will be performed by a consortium, the Participants shall form a Steering Committee to make decisions on day-to-day matters (excluding decisions affecting the overall scope, structure and timing of the Project). The frequency of meetings of the Steering Committee will be agreed with the ETI. The ETI and its members shall be entitled to attend any meetings of the Steering Committee.
5. The Prime Contractor or, in the event of a consortium, the Participants must fulfil various reporting obligations. The requirements for reports will depend upon the nature of the Project, the deliverables under it and the duration of the Project but are likely to include monthly reports and a final report. Each report must address a specified list of topics required by the ETI.
6. The ETI will require the right to carry out a Stage Gate review on completion of a Stage (or from time to time at a frequency to be agreed) in order to assess whether the Project continues to deliver against the ETI outcomes and also in order to carry out a validation exercise against the business case. The ETI may carry out Stage Gate reviews more frequently if the Project is in jeopardy. The need for Stage Gate reviews and the definition of a stage will depend upon the nature of the Project.
7. The ETI will require that the Project is carried out in accordance with health and safety law and will require reports and information as evidence of such compliance from time to time (tailored to the Project).

### Finance

8. The Project Participant[s] will be obliged to fund their share of the Project costs in accordance with agreed funding milestone.

9. The ETI will pay fixed sums against agreed milestones for the work done under the Project.
10. Acceptance of milestones will be determined by the ETI against acceptance criteria agreed with the Project Participant[s]. Any increase in costs in carrying out the Project over and above the agreed contractual amounts will only be payable by the ETI when such charges are agreed in accordance with the contractual variation control procedure.
11. Costs are payable in Sterling and the ETI will pay valid invoices within 30 days of receipt of invoice following acceptance of a milestone. An accountant's report will be required to support selected financial reports and invoices, in accordance with a standard the ETI matrix.
12. The ETI reserves the right to require the return of funding in certain circumstances (such as in the event of corruption or fraud, overpayment, costs incurred in respect of unapproved Project changes and failure to comply with State Aid obligations).

### **Representatives, Warranties and Covenants**

13. The Project Contract will contain representations and warranties in favour of the ETI as to the accuracy of information provided by the Project Participant[s] to the ETI prior to entry of the Contract including relating to Background Intellectual Property.
14. The Project Contract will contain on-going covenants on Project Participant[s].

### **Key Personnel**

15. Project Participant[s] will be obliged to retain key personnel involved in the Project, throughout the term of the Contract.

### **Confidentiality**

16. Restrictions on disclosure of any other party's confidential information will apply. Any publication of results (if appropriate) will be subject to the confidentiality provisions in the agreement.

### **Audits and Records**

17. The ETI will require the right to audit the Project, the Prime Contractor (alternatively, in the event of a consortium, the Participants) and any and all Subcontractors during the Project and, in certain circumstances, up to 7 years from the end of the Project on financial or technical grounds.
18. The parties will be required to maintain the majority of Project records for a minimum of 10 years from the Project end date to comply with state aid rules.
19. The Project Participant[s] will be required to keep relevant Project records for more than 20 years where the records relate to registered intellectual property rights.

### **Sub-contracting and assignment**

20. Sub-contracting or assignment (other than by the ETI) is not permitted without consent. However, details of known sub-contractors (and therefore the requisite consent) can be given in the Project Contract at signing.
21. The terms of any material sub-contract will be subject to the prior approval of the ETI.

### **Variation**

22. Any variations to the Project must be made via the variation control procedure.

### **Liability**

23. The liability provisions relating to Project Participant[s] will be tailored on a case-by case basis. It is expected to be capped at no less than the amounts payable under the Project except in relation to the agreed indemnities, return of funding or other liabilities which

cannot be limited or certain excluded by law. For those indemnities and liabilities, no cap will apply. Recovery of indirect, consequential etc. damages will usually be excluded.

24. The ETI will require an indemnity in respect of (a) third party infringement claims (b) certain claims brought by any third parties against the ETI as a result of the acts or omissions of the Project Participant[s] under the Project and in relation it, the terms of which will be negotiated on a case by case basis.

#### **Insurance**

25. Project Participant[s] will be obliged to carry appropriate insurance which will be tailored on a project by project basis.
26. Project Participants will be obliged to report any self-insurance throughout the Project.

#### **Withdrawal**

27. Withdrawal from the Project is only possible with the ETI and in the case of a consortium, the unanimous consent of all other contracting parties. Withdrawing Participant[s] cannot recover outstanding costs, unless otherwise agreed.

#### **Termination and Suspension**

28. The ETI reserves the right to terminate the agreement in certain circumstances (such as breach by a Participant, withdrawal of a Participant, insolvency, change of control of a Participant etc).
29. The ETI also reserves the right to terminate the agreement unilaterally upon giving a (to be agreed) period of notice to the Project Participants. Upon unilateral termination, the ETI will pay the eligible costs (pre-approved by the ETI) incurred by the Project Participant[s] up to the date of termination.
30. The ETI will reserve the right to suspend the Project in certain defined circumstances.

#### **Intellectual Property**

31. The ETI will own all Arising IP from this project. Project Participant[s] may request appropriate licence provisions to access the Arising IP where appropriate.
32. The Project Participant[s] will be required to licence their Background IP: (i) to other Project Participants on a royalty free basis where required for the purposes of the Project; (ii) to the ETI or sub-licensees of the ETI, on fair and reasonable terms, where required for the use or exploitation of the Arising IP.

#### **Governing Law**

33. The Project Contract will be governed by English law and the parties will submit to the exclusive jurisdiction of the English Courts.

## Appendix C Due Diligence Information Requirements

The ETI requires due diligence information in two stages: (1) submission of the Proposal and (2) contract detailing and negotiation. Certain information is required with the Proposal as part of the first stage of the procurement process. Further information will be required if any Proposal is selected to proceed to the contract detailing and negotiation.

Please note that successful completion of all elements of the due diligence is a pre-requisite to any contract award: failure to meet due diligence requirements at any stage may result in the exclusion of that Respondent or the Proposal from the ETI's selection process.

### 1. Submission of the Proposal

#### 1.1 State Aid

All Consortium Members shall confirm that there are no potential, threatened, pending or outstanding recovery orders by the European Commission in respect of any funding received by any Consortium Member.

#### 1.2 General Due Diligence

All Consortium Members (except the ETI Members, universities / higher education institutions and UK/EU government laboratories / agencies) which provide more than 20% of the resources for the Project or which provide an input which is critical to the Project's success, shall provide due diligence Information to the ETI according to Table 1.

#### 1.3 Insurance

The Respondent should confirm that insurance cover for the following risks is held, and should confirm levels of cover and expiry for each. The ETI will require evidence of these during the Project Detailing phase.

- Property damage (both any Property occupied by the Participants and any third party properties)
- Business interruption
- Employer's liability
- Public liability
- Product liability (or justify its exclusion if not appropriate)
- Professional Indemnity
- The Respondent should identify if it self-insures for any of these risks.
- The Respondent should identify if it is intending to take out any Project-specific insurance for the Project and the scope and intended beneficiaries of such insurance.

#### 1.4 Intellectual Property

The Respondent should provide details of how the proposed technology is protected through intellectual property rights.

This should include a detailed description of all Background IP which is needed to carry out the Project or which may be used during the Project, or, which may be needed by the ETI member to exploit any Arising IP. The details should include:

- the nature of the IP (including in the case of any registered IP, all applications for or granted registered rights in all jurisdictions);
- rights to that IP;
- ownership and control, whether this is by any of the Project Participants or by third parties; and
- details of the relationship with the owner of any third party rights identified.

### **1.5 Contract Detailing & Negotiation Requirements**

These are only required if a Proposal is selected to proceed to the Project Detailing and Contract Negotiation Stage, and will include:

- a) Financial due diligence on the breakdown of costs for the Project to enable the ETI to assess value for money and ensure that it meets State Aid requirements;
- b) Copies of insurance policies;
- c) Any other information that the ETI reasonably requires in order to fund the proposed Project including any information necessary to meet state aid requirements.

**Table 1 – General Due Diligence Information**

<b>Details of organisation</b>
Full name:
Registered Office:
Type of Business (sole trader, limited company, partnership etc):
Names of directors/partners/owner:
VAT number:
<b>Details of directors, partners or associates</b>
Have any directors, partners or associates of the organisation been involved in any organisation which has been liquidated or gone into receivership? (Yes/No)
Have any directors, partners or associates of the organisation been convicted of a criminal offence relevant to the business or profession? (Yes/No)
Please give (and attach if necessary) full details if you have answered 'Yes' to either of the two previous questions.
<b>Audited Financial Accounts</b>
Please supply Audited Financial Accounts for the last 3 years for the organisation, or relevant part thereof.
<b>Claims or litigation</b>
Please provide (and attach if necessary) details of any claims or litigation against the organisation, outstanding and/or anticipated.
<b>Insurance</b>
<p>Please confirm that you have insurance cover for the following risks, and confirm levels of cover and expiry for each. ETI will require evidence of these during the Project Detailing phase.</p> <ul style="list-style-type: none"> <li>• Property damage</li> <li>• Business interruption</li> <li>• Employer's liability</li> <li>• Public liability</li> <li>• Product liability (or justify its exclusion if not appropriate)</li> <li>• Professional Indemnity</li> </ul>



## Appendix D Statement of Compliance

The Respondent shall provide a statement that the Proposal is fully compliant with the Specification and all other aspects of the Request for Proposals, or shall state clearly any exceptions, deviations, alternative approaches or additions to the required Specification, with justification. **Note that in the absence of any specifically-stated deviation in this section of the Proposal, in the case of any subsequent dispute, the ETI's specification will take precedence over the Proposal.** Additional comments and clarifications should also be listed where appropriate (for example to clarify interpretation of requirements), but these must be differentiated from any deviations / exceptions above.

The Respondent shall provide a Statement of Compliance which confirms:

- That the Respondent has full authority to submit a bid on the basis of this Request for Proposal;
- That the Submission has been appropriately reviewed by technical, commercial, financial and legal representatives; and
- The level of internal approval obtained by key subcontractors in order to make the Proposal (letters of support from each key subcontractor should be included).

In the case of a Respondent responding on behalf of a Consortium, a separate Statement of Compliance must be signed by an authorised signatory of each Consortium Member.

With respect to the Project Contract, the Respondent must either:-

- Expressly confirm that the Proposal is made on the basis of the terms and conditions of the Project Contract; or
- Expressly confirm that the Proposal is made on the basis of the terms and conditions of the Project Contract subject to major clarifications and major exceptions which are listed in a separate commentary setting out the reason for those clarifications and exceptions.



## Appendix E Non Disclosure Agreement

# MULTI-PARTY CONFIDENTIALITY AGREEMENT

**THIS AGREEMENT** is made on \_\_\_\_\_ of \_\_\_\_\_ 2011

### **BETWEEN:**

- (1) **ENERGY TECHNOLOGIES INSTITUTE LLP**, a limited liability partnership (company no. OC333553) whose registered office is at Holywell Building, Holywell Way, Loughborough, Leicestershire, LE11 3UZ (the “**ETI**”); and
- (2) **The parties named in Schedule 1 of this Agreement** (the “**Respondents**”),  
  
(collectively the “**Parties**” and individually a “**Party**”)

### **BACKGROUND:**

The Parties intend to exchange certain Information on or after the Effective Date for the Purpose. The Parties agree to receive such Information, which shall be treated as confidential information, for the Purpose on the following terms and conditions.

### **IT IS AGREED:**

In consideration of the above and for other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, the Parties agree as follows:

- 1 In this Agreement, unless the context requires otherwise, the following words shall have the following meanings:

“**Bidders Workshop**” means the workshop to be held at the ETI on 14<sup>th</sup> and 15<sup>th</sup> March 2011;

“**Disclosing Party**” means any Party that discloses Information pursuant to this Agreement;

“**Effective Date**” means the date of this Agreement;

“**ETI Affiliates**” means the Secretary of State for Business, Innovation and Skills (and any successor governmental department or agency from time to time) and any other entity which is entitled to appoint the directors or otherwise having the ability to direct management policies of the ETI (together with any affiliates of those entities), together with their respective officers, employees, agents and consultants;

“**Information**” means any and all confidential information or data submitted in respect of or further to the Purpose or prepared in relation to the Purpose, including but not limited to written proposal documentation, due diligence materials, contractual documentation, reports, and the fact that the Parties have entered into this Agreement and are discussing and considering a business relationship;

“**Procurement**” means the procurement by the ETI of the Project including any stages set out in the RFP or as later may be notified or published by the ETI;

“**Project**” means the proposed research and development project, to be funded (in part or in whole) by the ETI to model tidal resource interactions around the UK;

“**Purpose**” means:

- a the preparation of documents and the making of any proposal in response to the RFP or for Stage 2;
- b any activities related to the assessment of a Respondent’s proposal or proposals for the Project including, but not limited to, any technology, commercial offer, financial information, management systems and intellectual property; and
- c any related exchanges of Information, clarifications, discussions, meetings, or negotiations in respect of the RFP, the Procurement and the Project (including such exchanges made at the Bidders Workshop);

“**Receiving Party**” means any Party that receives Information pursuant to this Agreement;

“**Respondent Affiliate**” means any undertaking that is:

- a a holding company of such Respondent;
- b the ultimate holding company of the group to which such Respondent belongs; or
- c a subsidiary of any holding company or subsidiary of the group to which such Respondent belongs,

and for the purposes of this definition, the terms above are as defined in section 1159 of the Companies Act 2006;

“**RFP**” means the request for proposals relating to the Project, issued by the ETI on 24<sup>th</sup> February 2011; and

“**Stage 2**” means the second stage of the Procurement following the ETI’s initial selection of any proposals received in response to the RFP and as described in the RFP and further notified or published by the ETI.

- 2 The Receiving Party shall with regard to any Information disclosed pursuant to this Agreement by or on behalf of a Disclosing Party on or after the Effective Date:
  - a hold the Information in confidence and except as is otherwise stated herein or agreed in writing by the Disclosing Party, shall not disclose or make available the Information by publication or otherwise to any third party (including for the avoidance of doubt, disclosure in any patent application or to any patent office) and shall use any Information disclosed to it pursuant to this Agreement only for carrying out the Purpose;
  - b make copies of the Information (or any further information derived from the Information) in whatever form or medium only to the extent that the copies are reasonably necessary for the Purpose and clearly mark all such copies as confidential;

- c take all necessary and proper security precautions (and at least as great as those it takes to safeguard its own information) to safeguard every part of the Information to prevent it from being disclosed or otherwise made available to any third party except as permitted by this Agreement; and
  - d at the request and direction of the Disclosing Party, and without delay, return or destroy any Information provided to it pursuant to this Agreement and any copies of such Information, except that one copy may be kept by the Receiving Party for archival purposes and for the purpose of defending itself against any claims arising in connection with this Agreement.
- 3 The obligations set out in clause 2 shall not apply to Information that:
- a the Receiving Party can prove (using written or electronic records), was lawfully known to the Receiving Party or in its possession prior to its communication by or at the direction of the Disclosing Party and was not communicated to the Receiving Party subject to any restrictions on disclosure or use; or
  - b is or becomes a part of the public domain through no wrongful act of the Receiving Party or any person on its behalf, provided that this clause 3(b) shall only apply from the date that the relevant Information so enters the public domain; or
  - c the Receiving Party receives from a third party without similar obligations of confidence in circumstances where the third party did not obtain that Information as a result of a breach of an obligation of confidence; or
  - d is required to be disclosed or made available by the Receiving Party pursuant to any applicable law, governmental regulation, or decision of any court or tribunal of competent jurisdiction or any government body, agency or regulatory body.
- 4 If a Receiving Party believes it is required by law to disclose any Information under clause 3(d) above, the Receiving Party shall (in each case and to the extent not prohibited in law):
- a provide the Disclosing Party with prompt written notice of such requirement or obligation, (together with a copy of any relevant access request, court order or other evidence giving rise to such belief) to enable the Disclosing Party to seek appropriate protective relief and/or to take other steps to resist or narrow the scope of any required disclosure;
  - b where it is not permitted in law to notify the requirement for disclosure in advance of the required disclosure, notify the Disclosing Party as soon as reasonably practicable after the disclosure confirming the nature of and extent of the disclosure; and
  - c co-operate with the Disclosing Party with respect to such matters, and in any event disclose only such Information as it has ascertained, after taking advice, it is legally compelled to disclose.
- 5 ETI shall be entitled to disclose or make available any Information it receives from the Respondents to such of the ETI Affiliates, and either the ETI's or the ETI Affiliates' employees, officers, secondees, agents, consultants, sub-contractors, proposed sub-contractors, professional advisers and proposed professional advisers where such disclosure is necessary for the Purpose, provided that in the case of disclosure of Information to ETI Affiliates, that this is limited to disclosure as is reasonably necessary for the purpose of ETI's governance of the Procurement and the Project.

- 6 ETI shall be entitled to disclose or make available any Information it receives from the Respondents to the Department of Business, Innovation and Skills (or other relevant Government department) and to the European Commission and their advisers as is necessary to seek advice in relation to the application of state aid, to notify or as part of any detailed assessment of state aid in the Project.
- 7 ETI shall ensure that all such persons to whom any Information under clause 5 of this Agreement is disclosed are bound by obligations of confidentiality and ETI shall be responsible for breaches of the obligations by such persons.
- 8 ETI shall be entitled to disclose or make available any Information it receives from a Respondent to any other Respondent where it is necessary for the Purpose.
- 9 Each Respondent shall be entitled to disclose or make available any Information it receives from the ETI or any other Respondent to such of its employees, officers, consultants, subcontractors and professional advisers where such disclosure is necessary for the Purpose provided that all such persons to whom any Information is disclosed are bound by obligations that are no less restrictive than those in this Agreement. The Respondent disclosing Information shall be responsible for breaches of the obligations by such persons.
- 10 Each Respondent shall be entitled to disclose or make available any Information it receives from the ETI to any other Respondent where it is necessary for the Purpose.
- 11 The Receiving Party expressly agrees and accepts that except in the case of fraud, no representation or warranty, express or implied, is made by the Disclosing Party as to the accuracy, completeness, reasonableness or otherwise in respect of the use of the Information, and that neither the Disclosing Party or any of its affiliates nor any of its or their respective employees, officers, secondees, agents, consultants, sub-contractors and professional advisers (as applicable) shall have any liability to the Receiving Party as a result of the Receiving Party's possession or use of the Information.
- 12 The Parties agree that money damages would not be a sufficient remedy for any breach of this Agreement and that the Disclosing Party shall be entitled to specific performance and injunctive or other equitable relief as a remedy for any such breach. Such remedy shall not be deemed to be the exclusive remedy for breach of this Agreement, but shall be in addition to all other remedies available at law or equity.
- 13 No rights or obligations other than those expressly set out in this Agreement are to be implied and nothing contained in this Agreement:
  - a constitutes an offer by or on behalf of the Disclosing Party; or
  - b confers upon the Receiving Party a licence or other transfer of rights in respect of any Party's interest in any Information or in any present or future patent or patent application; or
  - c affects the present or prospective rights of the Disclosing Party under the patent laws of any country or precludes the filing or prosecution of any patent applications by the Disclosing Party.
- 14 This Agreement represents the entire agreement between the Parties in relation to the subject matter contained herein and supersedes all other agreements and representations, whether oral or written. This Agreement may only be modified if such modification is in writing and signed by a duly authorised representative of each Party.

- 15 Neither Party will make any public announcements, statements or otherwise publicise the subject matter of this Agreement (or its existence) without the prior written consent of the other Party and neither Party will use the business names or trade marks of the other Party in any way without that Party's prior written consent.
- 16 This Agreement shall come into force on the Effective Date and shall continue in full force and effect, notwithstanding the completion of the Purpose, for a period of seven years from the Effective Date unless extended or superseded by a subsequent written agreement.
- 17 It is not intended that a third party (other than an ETI Affiliate) should have the right to enforce a provision of this Agreement pursuant to Contracts (Rights of Third Parties) Act 1999.
- 18 The rights of the Disclosing Party under this Agreement are in addition to and not exclusive of rights under the general law and may be waived only in writing and specifically. Delay in exercising or non-exercise of any right under this Agreement is not a waiver of that or any other right, partial exercise of any right under this Agreement shall not preclude any further or other exercise of that right or any other right under this Agreement and waiver of a breach of any term of this Agreement shall not operate as a waiver of breach of any other term or any subsequent breach of that term.
- 19 If any provision of this Agreement is or become illegal, invalid or unenforceable in any jurisdiction, that shall not affect:
  - a the legality, validity or enforceability in that jurisdiction of any other provision of this Agreement; or
  - b the legality, validity or enforceability in any other jurisdiction of that or any other provision of this Agreement.
- 20 Nothing in this Agreement is intended to or shall operate to create a partnership or joint venture of any kind between the Parties, or to authorise either Party to act as agent for the other, and neither Party shall have authority to act in the name or on behalf of or otherwise to bind the other in any way.
- 21 Except as provided otherwise, no person may assign any of its rights under this Agreement or any document referred to in it.
- 22 This Agreement may be executed in any number of counterparts, each of which when executed and delivered shall constitute an original of this Agreement, but all the counterparts shall together constitute the same agreement. No counterpart shall be effective until each Party has executed at least one counterpart.
- 23 This Agreement shall be construed in accordance with and governed by English law and the Parties hereby submit to the non-exclusive jurisdiction of the English Courts.

The Parties have caused this Agreement to be executed by their duly authorised representatives.

**ENERGY TECHNOLOGIES INSTITUTE LLP**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



SCHEDULE 1

Respondents	Signature
<p><i>[Insert name of Company] (company no. [Insert Company number])</i></p> <p><i>[Insert address of Company]</i></p>	<p>By: _____</p> <p>Name: _____</p> <p>Title: _____</p>
<p><i>[Insert name of Company] (company no. [Insert Company number])</i></p> <p><i>[Insert address of Company]</i></p>	<p>By: _____</p> <p>Name: _____</p> <p>Title: _____</p>
<p><i>[Insert name of Company] (company no. [Insert Company number])</i></p> <p><i>[Insert address of Company]</i></p>	<p>By: _____</p> <p>Name: _____</p> <p>Title: _____</p>
<p><i>[Insert name of Company] (company no. [Insert Company number])</i></p> <p><i>[Insert address of Company]</i></p>	<p>By: _____</p> <p>Name: _____</p> <p>Title: _____</p>
<p><i>[Insert name of Company] (company no. [Insert Company number])</i></p> <p><i>[Insert address of Company]</i></p>	<p>By: _____</p> <p>Name: _____</p> <p>Title: _____</p>

## Appendix F Glossary

Term	Definition
Arising IP	Any intellectual property which is created by or for any Participant during the Project or for the purposes of the Project.
Background IP	Any intellectual property which existed prior to any Participant's commencement of the Project and which was created by or for the Participant.
Consortium	The group of organisations which may decide together to submit a Proposal to carry out the Project and be governed by a Consortium Agreement between themselves. This will not include the ETI itself or any Subcontractors.
Consortium Member	An organisation which forms part of the Consortium.
Consortium Agreement	The agreement to be entered into between the organisations together forming a Consortium, which governs the execution of the Project within the Consortium.
ETI	The Energy Technologies Institute LLP, a limited liability partnership (Company no. OC333553) whose registered office is at Holywell Building, Holywell Way, Loughborough, Leicestershire LE11 3UZ.
Lead Coordinator	The organisation which is a Consortium Member, and which manages and coordinates the activities of all the Consortium members, and which acts as the primary interface between the Consortium and the ETI.
Participant	Either the Prime Contractor or a Consortium Member.
Payment Milestone	A contract milestone with defined constituent deliverables, associated deliverable acceptance criteria, and milestone value (all to be detailed in the Respondent's Proposal and agreed in the Project Contract) which should be completed in order to reach the said milestone, and at which, subject to acceptance by the ETI that the milestone has in fact been reached, payment may be claimed from the ETI.
Prime Contractor	A sole organisation which contracts with the ETI to manage the Project. It may have Subcontractors.
Programme Manager	The individual appointed by the ETI to manage the overall ETI programme to which this Project is affiliated, and to whom the Project Manager is accountable.
Project	The project for which the purpose, scope of work and other details are described in this Request for Proposals.
Project Contract	The contract to be entered into between the ETI and the Participants (whether between the Consortium Members or a Prime Contractor)
Project Manager	The individual who is appointed by the Lead Coordinator or Prime Contractor, or is otherwise agreed by the Project Participants, to carry out its responsibilities.
Project Organisation	The entity or group of entities / organisations, and the contracting and management structure which they adopt, which together will carry out the Project if commissioned by the ETI and includes any Consortium Members or Prime Contractor and any Subcontractors.
Proposal	The proposal for the Project submitted to the ETI, in response to this Request for Proposals.
Public Funding	Any funding provided by a public authority or agency.
Respondent	The organisations submitting a Proposal to the ETI.
Review Point	A Project review involving Project Participants and ETI representatives at which the overall progress in Project or a specific Work Package will be critically reviewed and following which a formal decision will be made on the future Project programme.

Stage Gate	A major Project Review Point involving Project Participants and ETI representatives at which the overall performance and business case for the Project will be critically reviewed and following which a formal decision will be made whether to continue with the Project, based on whether agreed Stage Gate Criteria have been met.
Subcontract	A contractual arrangement between a Participant and another organisation to which work for the Project has been subcontracted.
Subcontractor	An organisation which has a Subcontract.
Submission	The components, including the Respondent's Proposal submitted by the Respondent in response to this Request for Proposals.
Task	A significant activity or group of activities (within a Work Package) which results in completion of a deliverable or a significant part of one, or which represents a significant step in the process towards one.
Work Package (WP)	A major section of the Project scope of work, which may be identified in this Request for Proposals or in the Respondent's Proposal, in order to break up the scope of work into separate manageable parts. A Work Package will usually consist of a number of Tasks.