

# Invitation to Tender – No 338

## COMMERCIALLY CONFIDENTIAL



**Closing date Friday 25 September 2009**

Invite capable businesses, consultants and universities to support the acceleration of the route to market for a novel wind turbine concept, through provision of CFD modelling and wind tunnel testing to confirm the predicted performance benefits.

### 1. SUMMARY

**Renewables East** (“RE”) is engaged in programmes with the East of England Development Agency (EEDA) to accelerate the route to market of very early stage renewable energy technologies, increasing both the quantity and quality of investable concepts capable of growing across the two regions.

### 2. Background

The Renewable East Technology Acceleration Scheme helps entrepreneurs, businesses and other technology developers create successful and innovative renewable energy solutions. It does this by providing early-stages funding and other support to help ideas reach a level of development and credibility at which other significant funding options become viable. The general objectives of the scheme are to:

Increase the strength of the renewable energy engineering and service sector in the East of England.

Help adoption of renewable energy technologies by producers and consumers in the region.

### 3. About Renewables East

Renewables East is a private company delivering the services associated with being the renewable energy agency for the East of England. The Company is funded by the East of England Development Agency (EEDA) and officially designated as an EEDA sister organisation. For the year 2007/08, RE has been allocated £1.2m from various sources including EEDA, EMDA, EU, Local Authorities and central government to continue its mission.

The objectives of the Company are:

a. To enable the East of England to meet its adopted target for the production of energy from renewable resources, within the context of national energy policy and the need to move towards a lower carbon economy; and

b. To maximise the rate of growth of the renewable energy sector and the economic benefits to the region, especially through stimulating investment and job opportunities, supply chain development and innovation.

Renewables East's primary work areas are Bioenergy (Biomass and Biofuels,) Offshore/Onshore Wind, Planning, Supply Chain Development and the Mass Market Renewables agenda. If you have not already done so, you may find a visit to our web-site useful [www.renewableseast.org.uk](http://www.renewableseast.org.uk).

#### 4. Scope of Work

Renewables East wish to appoint specialist to conduct the following:

##### Phase 1 – Initial Test and CFD validation

An outline wind tunnel test programme to investigate the effect of:

- i) blade pitch (4 settings; 0°, 5°, 10°, 15° & 20°)\*
- ii) a second mechanical variable (4 settings)\*

Comparison of the outline data with previously conducted CFD analysis to verify CFD correlation aspects and thereby support the study via investigation of:

- i) Sinusoidal blade pitch variation around an operating cycle,
- ii) One other mechanical variable\*

The work will involve post processing and comparison of both wind tunnel and CFD data sets, and the presentation of the data in a short report. Key recommendations from this phase will confirm the next steps, but it is likely to incorporate the following:

##### Phase 2 – Final Test and CFD validation

A further period of wind tunnel tests to investigate the effect of:

- iii) blade pitch (5 additional settings; between 0° and 20°)\*
- iv) a second mechanical variable (4 settings)\*

Test data will be used to validate the CFD analysis and thereby understand the fidelity of the predicted data. Further CFD analysis will then be required to optimise the mechanical arrangement, without the need for further wind tunnel testing, and potentially incorporating a number of alternative developments e.g. minor changes to blade profile and/or introduction of a cowling\*

The work will involve post processing and comparison of both wind tunnel and CFD data sets, and the presentation of the data in a final report and presentation. Key recommendations from this final phase should inform the innovator of the following:

- Current design performance attributes including anticipated torques
- Performance aspects that are worthy of further study – i.e. not fully understood or captured within this activity
- Outline design changes that would enhance the potential performance
- Variables that would have a detrimental effect upon performance, but that are not modelled/tested within these two phases (i.e. assumed component forms/jointing methods, surface finishes, non-scaled aspects [if any])

#### **NOTES:**

- \*details will be disclosed to the successful organisation
- Each test will be repeated to ensure repeatability verification.
- It is expected that full account is made of any aerodynamic hysteresis effects within the test schedule via appropriate procedure / methodology.

#### **COSTS:**

Costs should be broken down for each of the two phases as follows:

- Wind tunnel time/rate/support materials
- Technician support activities
- CFD usage & rates
- Research time
- Supervision time

## 5. Tender Details

Applicants who wish to submit a tender bid must include a covering letter which is to include the Tender Title, Novel Turbine Concept Tender and ITT No 338, Postal address, contact details, indicate if they are an SME or not, and total number of pages.

The tender submission should be page numbered with the Company/Consultant name on the bottom of each page, the tender criteria should form the page headings for the main body of the tender submission. You should also include your public liability insurance, organisation structure and details of the team that would be working on the project.

Tenders must include a total cost, inclusive of VAT and expenses.

Tenders on average should be no longer than 8 pages.

Responses to this tender should be submitted electronically and must be received by Renewables East no later than **1200hrs on Friday 25 September 2009**. They should be sent via email to:

**John Heath**  
**Delivery Manager**  
**Renewables East**  
[johnheath@renewableseast.org.uk](mailto:johnheath@renewableseast.org.uk)

The successful applicant will be notified by Monday 5 October 2009 at the latest and must be in a position to start work immediately upon notification.

## 6. Tender Process

Applicants are advised to ensure that they are fully conversant with the nature and extent of the obligations to be accepted by them if their Tenders are accepted.

Renewables East reserves the right to extend proposed timescales if extensive Tender clarification is required during evaluation or for any other reason.

Applicants should be aware that queries raised by Applicants that affect the Tender process will be circulated to all Applicants. Responses of a commercially sensitive nature will be confined to the correspondent(s).

Any Applicant who directly or indirectly canvasses any member or officer of Renewables East concerning the award of the Contract for the provision of the Services, or who directly or indirectly obtains or attempts to obtain information from any such member or officer concerning any other Tender or proposed Tender for the Services will be disqualified.

It is the responsibility of Applicants to obtain for themselves and at their own expense all information necessary for the preparation of their Tenders. Information supplied by Renewables East (whether in these Tender Documents or otherwise) is supplied solely for general guidance in the preparation of the Tenders. Applicants must satisfy themselves by their own investigations with regard to the accuracy of any such information and no responsibility is accepted by Renewables East for any inaccurate information obtained by Applicants.

All information supplied by Renewables East in connection with this Invitation to Pre-qualify and Tender shall be regarded as confidential by the Applicant except that such information may be disclosed for the purpose of obtaining sureties and quotations necessary for the preparation of the Tender. Renewables East reserves the right to ask all Applicants to complete a separate Confidentiality Agreement and if deemed necessary this will be forwarded under separate cover for completion and return within a specific timescale no later than the tender return date.

The Tender Documents are and shall remain the property of Renewables East and must be returned upon demand.

No servant or agent of Renewables East has authority to vary or waive any part of the Tender Documents or procedure other than the Authorised Officer nominated by Renewables East who shall only do so in writing.

Renewables East will not consider individual requests for extension of the closing date and the time specified above, but may at its own absolute discretion extend generally the closing date and time.

Renewables East reserves the right to request such further information from Applicants as it deems necessary to assist the clarification of Tender submissions.

Renewables East reserves the right to dismiss those tender applications that do not meet the specific tender details required.

## **7. Tender Criteria and Weighting**

The tenders will be assessed against the following criteria:-

1. Value for money and ability to deliver - 30% weighting
  - a. Total price - including VAT & Expenses
  - b. Completeness of response (tender scope), clear and concise proposal
  - c. Discounting structures offered
  - d. Added value beyond the scope of the tender
  - e. Project management and reporting mechanisms evidenced
2. Expertise and Experience – 50% weighting
  - a. Key staff CV's and publications
  - b. Facilities that are appropriate for the workscope(s)
  - c. Similar activities undertaken within the past 5 years
  - d. Knowledge of existing VAWT technologies

3. Innovator Management – 20% weighting
  - a. Experience with SME's
  - b. Experience with innovations
  - c. Experience with funding opportunities

## **8. Fees**

Payment will be made to an agreed schedule, which will include the provision of required evidence; report & action items and receipt of invoice(s), subject to our standard conditions (available on request). Payments are normally made within 30 days.

## **9. Further information**

Should you require any further information on this brief to complete your tender submission, please contact John Heath by e-mail or post:

[johnheath@renewableseast.org.uk](mailto:johnheath@renewableseast.org.uk)

John Heath  
Delivery Manager  
Renewables East  
ZICER Building  
School of Environmental Sciences  
University of East Anglia  
Norwich  
NR4 7TJ

## **10. Restricted and Commercially Confidential**

PLEASE NOTE THAT THE INFORMATION CONTAINED WITHIN THIS TENDER DOCUMENT AND ASSOCIATED DOCUMENTS IS NOT IN THE PUBLIC DOMAIN AND REMAINS COMMERCIALY CONFIDENTIAL. THE INFORMATION IS NOT TO BE USED FOR ANY PURPOSES OTHER THAN TO RESPOND TO THE TENDER.