

06/11/2023

Dear Sir/Madam,

**Invitation to Tender for the Hydrogen purification cost-benefit analysis project for the Carbon Trust's Clean Hydrogen Innovation Programme**

You are invited to submit a tender for the Hydrogen purification cost-benefit analysis project (the "Purification project" or "Project") which is part of the Carbon Trust's [Clean Hydrogen Innovation Programme](#) ("CHIP"). The key objectives of the Project are to understand hydrogen purity requirements of end-users, the extent to which these requirements can be met with existing or close to market purification technologies and the impact on levelised cost of hydrogen of supplying this required purity across future archetypes.

The Invitation to Tender (ITT) consists of the following documents:

- Description of Tender (this document);
- Suggested archetypes for use in the project<sup>1</sup> (pdf)
- CHIP Phase II Contractors' Conditions;
- Tender Certificate (Word template);
- Bid Price Calculation Sheet (Excel template);
- Clarification Document (if applicable<sup>2</sup>); and
- Project Closeout Form (for information purposes only – no need to complete).

Unless informed to the contrary, tenders and communications shall be sent by e-mail to the following e-mail address: [rob.bloom@carbontrust.com](mailto:rob.bloom@carbontrust.com)

Tenders must be submitted before 2359 GMT 15/12/2023. Any tenders received after this date and time will be deemed non-compliant.

Your tender must consist of the following, the contents of which are described further below:

- Main Bid Document (pdf) – template not provided;
- Signed Tender Certificate (pdf) – template provided; and
- Bid Price Calculation Sheet (xls) – template provided.

The timeline of this procurement process is as follows:

Deadline for clarification questions	22/11/2023
Clarification Document published <sup>1</sup>	24/11/2023
Submission of full tender	2359 GMT 15/12/2023
Bidder interviews	w/c 15/01/2023
Successful Contractor announcement	w/c 05/02/2024
Envisaged Contract award date	w/c 12/02/2024

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<sup>1</sup> Provided in CHIP\_P2\_Project Archetypes\_v1(f)\_24.10.2023.

<sup>2</sup> A Clarification Document will not be published if no clarification questions are received in relation to this ITT.

Please e-mail any clarification questions, including questions about the timing of this ITT, to [rob.bloom@carbontrust.com](mailto:rob.bloom@carbontrust.com) any time before 22/11/2023. The complete set of clarification questions and all answers to clarification questions will be published in the Clarification Document on our website by 24/11/2023 and will hence be visible to all potential Bidders: <https://www.carbontrust.com/news-and-events/tenders>

For information about CHIP, please see the Carbon Trust's website: [CHIP \(carbontrust.com\)](https://www.carbontrust.com)

We look forward to receiving your tender.

Yours sincerely,

Rob Bloom  
For and on behalf of **THE CARBON TRUST**

# THE CARBON TRUST CLEAN HYDROGEN INNOVATION PROGRAMME

## Invitation to Tender for the “Hydrogen purification cost- benefit analysis” Project

### Description of Tender

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## **IMPORTANT INFORMATION FOR BIDDERS**

### **Publishing**

Neither this document, nor any part of it nor any other information supplied in connection with it may, except with the prior written consent of the Carbon Trust, be republished, reproduced, copied, distributed or disclosed to any person for any purpose other than consideration by the recipient of whether or not to submit a tender.

### **Bid evaluation**

The received bids will be evaluated by the Carbon Trust and the parties forming the Steering Committee of the CHIP Phase II (see clause 1.1) against the criteria provided in section 7. A shortlist of Bidders will be created and invited for interview. Carbon Trust will do a vetting of the shortlisted bidders. Carbon Trust may request shortlisted bidders to fill-in a Due Diligence Questionnaire to supply additional information prior to being invited for an interview.

### **Contracting**

Bidders should note that the Scope of Work contained in section 4 of this document does not constitute an offer to contract with the Carbon Trust. It only represents a definition of specific requirements and an invitation to submit a tender addressing these requirements.

Issuance of this Invitation to Tender and the subsequent receipt and evaluation of the tenders by the Carbon Trust does not commit the Carbon Trust to enter into a Contract with any Bidder.

Should your tender be successful, a Final Scope of Work that builds upon the Scope of Work contained in section 4 of this document and your Approach to Work will be mutually agreed between you and the Carbon Trust. Once the Final Scope of Work is agreed, your offer will be formally accepted by the Carbon Trust issuing an Award Letter, the Final Scope of Work, the CHIP Phase II Contractors' Conditions, and any clarifications agreed in writing. The Award Letter, the Final Scope of Work, the CHIP Phase II Contractors' Conditions, and any clarifications agreed in writing will establish the Contract for the Hydrogen purification cost-benefit analysis project (the "**Contract**") between you and the Carbon Trust. With the exception of any minor amendments to the CHIP Phase II Contractors' Conditions which may be requested by the Bidder, the submission of a tender shall constitute unqualified acceptance of the CHIP Phase II Contractors' Conditions. In the event that minor amendments to the CHIP Phase II Contractors' Conditions are requested, such amendments must be clearly stated, and the exact alternative wording must be provided in Annex A of the Tender Certificate. Please note that it is at the sole discretion of the Carbon Trust to accept any of the proposed amendments and that the Carbon Trust reserves the right to require the provision of further information in relation to any such request. No minor changes other than those contained in Annex A of the Tender Certificate at the time of submitting the tender will be considered. No material changes will be considered at any time.

### **Mechanics of the tender process**

Bidders should note that:

- it is at the discretion of the Carbon Trust whether to accept any non-compliant tender or whether to reject any non-compliant tenders without progressing such tenders through the evaluation phase;

- the Carbon Trust reserves the right not to accept the lowest priced tender or any tender whatsoever;
- the Carbon Trust reserves the right to accept more than one tender;
- unless a Bidder makes a formal statement to the contrary, the Carbon Trust reserves the right to accept any part of a Bidder's tender without accepting the remainder;
- formal notification that a tender has been successful will be communicated in writing by the Carbon Trust;
- the costs of tendering are the full responsibility of the Bidder; and
- the pricing set by Bidders shall be valid for a minimum of 90 days.

Bids may be submitted by individuals, companies, organisations or consortia. However, no less than 50% of the value of the work contracted for the Hydrogen purification cost-benefit analysis project must be contracted to parties based in the United Kingdom (including without limitation entities incorporated in the United Kingdom, individual contractors based in the United Kingdom, and/or public bodies situated in the United Kingdom).

Bidders should be aware that dates referred to in this Invitation to Tender may be subject to change where this is necessary in the interests of the Project (such changes will be notified in advance).

The Tender Certificate, Main Bid Document and any correspondence must be written in English. This Invitation to Tender, the Contract, its formation, interpretation and performance is subject to and shall be construed in accordance with the law of England and Wales.

### **Conflicts of interest**

Bidders should be free of any commercial interests, partnership arrangements or contracts underway or other matters which may present a conflict or potential conflict of interest in respect of the provision of these services. As set out in section 3, if a Bidder thinks that it may have any conflict or potential conflict of interest, the Bidder shall describe the details of this conflict and provide details of whether and how it would propose to manage such a conflict in a satisfactory and robust manner in Annex B of the Tender Certificate. The Carbon Trust reserves the right to require the provision of further information in relation to any conflict or potential conflict of interest.

### **Disclaimer**

The information contained in this Description of Tender document and in any documents or information it refers to or incorporates (the "**Disclosed Information**") has been prepared to assist interested parties in deciding whether to make a bid. The Disclosed Information is not a recommendation by the Carbon Trust. It does not purport to be all inclusive or include all the information that a Bidder may require.

Neither the Carbon Trust nor any of its directors, employees, agents or advisers makes any representation or warranty (express or implied) as to the accuracy, reasonableness or completeness of the Disclosed Information. All such persons or entities expressly disclaim any and all liability (other than in respect of fraudulent misrepresentation) based on or relating to the Disclosed Information or any subsequent communication. The Bidder should conduct its own due diligence and seek its own professional, legal, financial and other advice as appropriate. The only information which will have any legal effect and/or upon which any person may rely will be such information (if any) as has been specifically and expressly represented and/or warranted in writing to the successful Bidder in any written contract that may be entered into with the Carbon Trust.

# 1. Introduction to the Clean Hydrogen Innovation Programme

- 1.1 The Clean Hydrogen Innovation Programme (“**CHIP**”) is an industry-driven collaborative research, development and demonstration programme which was initially launched by the Carbon Trust in February 2023 in collaboration with four industry partners and support from UK government’s Department for Energy Security and Net Zero (“**DESNZ**”). At the time of issue of this Invitation to Tender the CHIP Partners are: the Carbon Trust, Levidian Nanosystems Limited, National Gas Transmission PLC, Scottish Power Energy Retail Limited, and SSE Thermal Energy Operations Limited (“the **CHIP Partners**”).
- 1.2 CHIP convenes hydrogen industry players to assess the key innovations needed to increase the cost-competitiveness of clean hydrogen and undertake targeted research and development projects to stimulate the supply chain and accelerate deployment of clean hydrogen in the UK. Through this process, CHIP aims to drive down the end-to-end cost through collaborative innovation.
- 1.3 CHIP is managed by the Carbon Trust and governed by a Steering Committee (“**CHIP SteerCo**”) consisting of representatives of the CHIP Partners and DESNZ. The CHIP SteerCo will supervise the Project, provide technical direction and guidance to the Contractor (where needed) and review the Project Deliverables, findings and other outcomes.
- 1.4 Please note, the term “Contractor”, where used within this document, refers only to the successful Bidder or, in the event that the Contract is awarded to a consortium, the successful Bidders.

## 2. Background and objective of the Purification project

2.1 In early 2023, CHIP focus technologies from across the hydrogen supply chain were identified through a landscape assessment and evaluated based on their cost reduction potential and strategic value for the UK's supply chain development, as part of an extensive Innovation Needs Assessment (INA).

2.2 Purification was identified in the INA as a technology across the supply chain with high potential to unlock hydrogen deployment through innovation. Despite widespread emphasis placed on purity requirements of delivered hydrogen, there is little real understanding of where purification technologies will be needed throughout the supply chain to supply requisite purity for end-use applications as well as which technologies are needed on what scale to deliver this purity.

2.3 From the results of this project CHIP partners will gain a clearer understanding of the hydrogen purification technologies available to the UK market and the extent to which they meet the purification needs of the hydrogen supply chain. The cost implications and trade-offs associated with hydrogen purification will be explored to give a picture of the limitations and benefits of purification on the delivered cost of hydrogen. Through this work, key areas where innovation projects could have market leading impact will be highlighted and used to inform future phases of CHIP.

2.4 The main objectives of this work are to:

- Understand the level of purity needed by, or effect of contaminants on end-users and at other key points throughout the hydrogen supply chain.
- Uncover the extent to which existing and close to market purification technologies can meet these needs, and at what cost to LCOH?
- Given likely requirements of the supply chain and end-users in regard to purity, to explore what value is there in providing low, medium high or very high purity hydrogen and where.
- To understand where innovation in purification technologies is most needed, can be most impactful in meeting current needs and the barriers it will face.

2.5 This work is expected to deliver:

- Through archetype mapping, a clear mapping of hydrogen purity implications and potential contaminants present throughout the hydrogen supply chain.
- Through a purification technology review, a clear understanding of the existing and close to market purification technologies available to the UK market and their performance, as well as their suitability to meet supply chain needs.
- The cost benefit analysis will indicate the impact of purification on the delivered levelized cost of hydrogen (LCOH) in the archetypes in line with purity bands (98/99.9/99.999%) likely to become "industry standard".

- A critical assessment of barriers and innovation needs will deliver a comprehensive understanding of barriers and innovation opportunities for hydrogen purification technologies.
- Following this assessment, clear recommendations for further research and innovation activity will be made which can inform follow on work.

2.6 The benefits of this work are expected to:

- Allow CHIP members and potentially wider industry to improve their understanding of the purity requirements and demand volumes of end users.
- Allow CHIP members and potentially wider industry to have an informed understanding of the cost implications and trade-offs of hydrogen purification on delivered cost of hydrogen.
- Allow CHIP members to understand where they can target innovation activity to improve hydrogen purification technologies for future projects.



### 3. Tender documents for submission

3.1 In response to this Invitation to Tender, Bidders are required to submit:

- i. A Main Bid Document (pdf) – no template provided;
- ii. The signed Tender Certificate (pdf) – template provided; and
- iii. The filled-in Bid Price Calculation Sheet (xls) – template provided.

3.2 The Main Bid Document should be no more than 20 pages excluding appendices and no more than 40 pages including appendices. Font should be clearly legible, and be at least font size 11. The Main Bid Document shall as a minimum include the following information:

- i. the Bidder's proposed detailed Approach to Work (see section 4 and criterion 1 for more details). Bidders shall provide Work Package descriptions in the format set out in Annex 2 to this document. The Approach to Work should:
  - include a Gantt chart which describes the timeline for the Project, showing when each Work Package will start and finish;
  - outline how the Bidder will deliver the Scope of Work and do so on budget and within the allocated time;
  - specify any input data, background IP, hardware or other inputs that the Bidder requires the Carbon Trust and/or the CHIP SteerCo to provide;
  - specify any Alternative Work (i.e. substitute activities to take place instead of certain activities outlined in the Scope of Work in section 4). If Alternative Work forms part of the Approach to Work, the Bidder is expected to highlight, explain and justify the intended deviation from the Scope of Work. Alternative Work will be considered as non-optional when the tender is evaluated; and
  - specify any Additional Work (i.e. activities to take place in addition to the activities outlined in the Scope of Work in section 4). If Additional Work forms part of the Approach to Work, the Bidder is expected to explain and justify why the Additional Work would be beneficial and to provide a separate quotation for these activities. It is at the discretion of the Carbon Trust to consider Additional Work in the evaluation of the tender;
- ii. a pdf copy of the filled-in Bid Price Calculation Sheet;
- iii. the offered Bid Price, including any cost assumptions deemed relevant by the Bidder – see section 6 and criterion 4 for more details;
- iv. an explanation of experience and staff skills, and how these are relevant to the Approach to Work – see criteria 2 and 3 for more details; and
- v. supplementary information to provide experience evidence and skills evidence (e.g. CVs) – see criteria 2 and 3 for more details. This information should be provided as appendices to the Main Bid Document.

3.3 The Tender Certificate must be signed by an authorised signatory. Bidders must fill in the provided template.

3.4 The filled-in Bid Price Calculation Sheet must be provided in Excel format in addition to the information provided in the Main Bid Document. See section 6 and criterion 4 for more details.

3.5 The failure by a bidder to submit either the Main Bid Document, the signed Tender Certificate or the filled-in Bid Price Calculation Sheet shall mean that such tender is a non-compliant tender.

## 4. Scope of Work

- 4.1 The Scope of Work is provided in this section 4.
- 4.2 The Scope of Work comprises 5 Work Packages. The Scope of Work sets out the initial ideas on the key activities that the Contractor is expected to deliver for the Project.
- 4.3 It is expected that the Contractor will report on Project Deliverables to the CHIP SteerCo. The Carbon Trust and the CHIP SteerCo shall review and provide feedback on each Project Deliverable. There will be at least one round of review comments to be accommodated by the Contractor for each Project Deliverable.
- 4.4 The Final Scope of Work will be agreed between the Carbon Trust and the Contractor when entering into the Contract. The Final Scope of Work may reflect any updates, changes or improvements to the Scope of Work as proposed by the Contractor in its Alternative Work or Additional Work and as agreed by the Carbon Trust.
- 4.5 Due to the breadth of skills and experience required for the Project bidders may decide to build a consortium to successfully meet the objectives of the Project. If a bid is submitted by a consortium it is expected that, in the case that the consortium is selected as the preferred Bidder, Carbon Trust will only enter into a Contract with the Project Coordinator, and that the Project Coordinator will subcontract the other members of the consortium.
- 4.6 The Carbon Trust appreciates that it will take a small team of mixed seniority approximately 9 months to complete the Project.
- 4.7 Bidders should use the Scope of Work as set out below to create the Approach to Work. Any Alternative Work or Additional Work shall be stated in the Approach to Work at the end of the relevant Work Package description.
- 4.8 It is expected that simplifying assumptions will be required to complete the work in the given timeframe. These assumptions should, to the extent possible at the time of tender submission, be clearly stated in the Approach to Work. It is expected that during the execution of the Purification Project, any assumptions will be discussed with the SteerCo prior to the start of each Work Package.

# Work Packages

Work Package	Description of work
<b>WP1: Archetype definitions</b>	<p>This work package will seek to characterise use cases for hydrogen purification technologies across the hydrogen supply chain. Through this process, the scope of technologies to be considered will be defined. CHIP has defined a number of supply chain archetypes which can be used to characterise use cases for this project. You can find these in CHIP_P2_Project Archetypes_v1(f)_24.10.2023.</p> <p>The Bidder should hold a workshop with CHIP partners to further refine the list of archetypes to align with the project objectives including (but not limited to): Production volume and profile, off-taker demand volume and profile, hydrogen supply chain stages (e.g. storage).</p> <p>This workshop should also explore the major impurities / contaminants of concern through the considered archetypes. i.e. What purity metrics are important to these archetypes (as defined by key stakeholders in the value chain) – moisture, impurities (H<sub>2</sub>S), contaminants etc. This should build on work conducted as part of the Hy4Heat programme.</p>
<b>Project Deliverables:</b> <ul style="list-style-type: none"> <li>- <b>D01: Workshop with CHIP partners</b></li> <li>- <b>D02: Summary of archetypes for use in this project (pdf)</b></li> </ul>	
<b>WP2: Purification technology review</b>	<p>The Bidder should then conduct a review of existing purification technologies available to the UK market. This review should assess the status of current technologies including (but not limited to):</p> <ul style="list-style-type: none"> <li>• Capital cost (CAPEX)</li> <li>• Operational cost (OPEX)</li> <li>• Assessment of availability to UK market</li> <li>• Technical specification</li> </ul> <p>An analysis of the ability of market ready and close-to-market purification technologies to meet supply chain purification needs should be conducted.</p> <p>The Bidder should then undertake mapping of potential sources of contamination and purity needs throughout the different supply chain archetypes defined in the previous work package. By mapping purification technologies against these needs, a clear guide will be developed to demonstrate where different purification technologies can best meet the needs of the hydrogen supply chain.</p> <p>This work package should be delivered through a combination of desk-based research and stakeholder engagement. The Bidder should</p>

	specifically engage with any relevant parties including (but not limited to): OEMs, research institutions, innovators, trade bodies, end users.
<b>Project Deliverables:</b> <ul style="list-style-type: none"> <li>- <b>D03: Mapping of purification technology landscape (excel)</b></li> <li>- <b>D04: Report chapters on supply chain purification needs, technology review and technology mapping (report pdf)</b></li> <li>- <b>D05: Presentation to CHIP partners on key findings (ppt)</b></li> </ul>	
<b>WP3: Cost benefit analysis</b>	<p>The Bidder should undertake a cost benefit assessment to understand the cost implications of purification on LCOH of the delivered hydrogen cost in the archetypes.</p> <p>This assessment should consider:</p> <ul style="list-style-type: none"> <li>• The implications and accrued costs of providing over/under specified purity hydrogen to specific end use applications (e.g. fuel cells, industrial users).</li> <li>• Purity bands (98/99.9/99.999%) likely to become “industry standard” and the trade-off of specifying each band should be considered in the assessment.</li> </ul> <p>The requirements of these bands and the impact contaminants / impurities as identified in WP1 above.</p>
<b>Project Deliverables:</b> <ul style="list-style-type: none"> <li>- <b>D06: Presentation to CHIP partners on key findings (ppt)</b></li> <li>- <b>D07: Report chapter on CBA for purification technologies meeting purity requirements throughout the value chain (report pdf)</b></li> </ul>	
<b>WP4: Innovation barriers and opportunities</b>	<p>The Bidder should assess what barriers to, and opportunities for innovation are present in the current purification technology landscape.</p> <p>This should include a critical evaluation of where this innovation is most needed referencing the archetypes defined earlier in this work.</p> <p>This work package should be delivered through a combination of desk-based research and stakeholder engagement. The Bidder should specifically engage with any relevant parties including (but not limited to): OEMs, research institutions, innovators, trade bodies, end users.</p>
<b>Project Deliverables:</b> <ul style="list-style-type: none"> <li>- <b>D07: Critical assessment report on innovation barriers and opportunities.</b></li> <li>- <b>D08: Presentation to CHIP partners on key findings (ppt)</b></li> </ul>	
<b>WP5: Recommendations and next steps</b>	<p>Through the previous work packages, the Bidder should collate recommendations for addressing innovation barriers and trade-offs. These should be included in a short report with clear potential actions for the CHIP members and or future CHIP projects.</p>

	Where possible, areas for future innovation and demonstration activity should be identified and included in this report.
<b>Project Deliverables:</b> <ul style="list-style-type: none"> <li>- <b>D09: Innovation opportunities report (pdf)</b></li> <li>- <b>D10: Presentation to CHIP partners on key findings (ppt)</b></li> </ul>	
<b>WPA. Project Management</b>	<p>The Bidder should stipulate how it will manage the Project efficiently and effectively.</p> <p>In particular, the following activities should be included (and hence budgeted for)</p> <ul style="list-style-type: none"> <li>• project management time (including sufficient time for review processes);</li> <li>• regular update calls with the Carbon Trust Project Manager and/or CHIP SteerCo as required;</li> <li>• the preparation of monthly flash reports (Carbon Trust template) containing key financial data and information of the delivery status of the Project; and</li> <li>• towards the end of the Project <ul style="list-style-type: none"> <li>○ the production of a 3 page Executive Summary Report for the entire Project for internal dissemination;</li> <li>○ time dedicated to presenting the main results, findings and outcomes of the Project in the form of a 1-hour webinar to the CHIP Partners and DESNZ.</li> <li>○ the preparation of a Project Closeout Form (Carbon Trust template) which includes a short summary of areas for future research and a documentation of all Project Deliverables;</li> </ul> </li> </ul> <p>Bidders should be aware that the Carbon Trust and the CHIP SteerCo usually require 2-3 weeks to review and provide feedback on each Project Deliverable, with at least one round of review comments to be accommodated. This should be considered when calculating your Bid Price.</p>
<b>Project Deliverables:</b> <ul style="list-style-type: none"> <li>- <b>D11: Monthly flash reports</b></li> <li>- <b>D12: Executive Summary Report</b></li> <li>- <b>D13: Delivery of webinar</b></li> </ul>	
<b>Expenses</b>	<p>The Bidder should detail the amount of expenses it expects to incur throughout the Project. Expenses will be paid as incurred up to the amount specified and any unused balance will not be paid.</p>

## 5. Intellectual Property, Knowledge and Input Data

- 5.1 Full details of the intellectual property requirements and conditions can be found in the attached CHIP Phase II Contractors' Conditions.
- 5.2 The Carbon Trust and/or the CHIP SteerCo are able to make available the following input data, background IP or other resources to the successful Bidder for the purposes of the completing the Project, subject to the conditions in the CHIP Phase II Contractors' Conditions:
  - a. None

## 6. Bid Pricing

- 6.1 To provide Bidders with greater clarity on the nature, level and type of work involved in the various Work Packages, the Total Budget for the delivery of this Project is expected to range between £100k and £125k (excl VAT).
- 6.2 The Bid Price submitted with the tender must be derived from the cost breakdown in the Bid Price Calculation Sheet, and must include all expenses. The Bid Price is the price for the activities that will address the Scope of Work (and any Alternative Work proposed by the Bidder). The Bid Price Calculation Sheet and the Bid Price shall not include the price of any Additional Work suggested by the Bidder. Instead, the price for such Additional Work Packages shall be stated separately to the Bid Price in the Main Bid Document.
- 6.3 If the Bid Price exceeds the expected range of the Total Budget as stated under section 6.1, to avoid receiving a lower score for criterion 4, in the Main Bid Document the Bidder should provide a clear and justified reason why the Bid Price exceeds the expected budget.
- 6.4 All costs and rates quoted in the Main Bid Document and Bid Price Calculation Sheet must be in GBP (£) and all staff rates quoted in the tender must represent the **Day Rate** for employment of staff members.
- 6.5 Any expenses must be separately included under Expenses.



## 7. Tender Evaluation Criteria

Bidders should take the following evaluation criteria into account when preparing and submitting their tenders.

### CRITERION 1: APPROACH TO WORK (WEIGHTING: 30%)

Description	Information required from Bidders
<b>Proposed Approach</b>	<p>In the Main Bid Document, Bidders are required to provide a clear and detailed description on how they plan to deliver the work for this Project.</p> <p>The description should include an initial overview on the approach followed by a description on how each Work Package and task will be delivered.</p> <p>Also, Bidders need to justify how their proposed approach meets the objectives of the Project.</p>
<b>Additional Work</b>	<p>If there is any Additional Work proposed by the Bidder, these aspects will be evaluated separately. The suggestion of Additional Work by the Bidder will not have a negative impact on the evaluation of the tender.</p>
<b>Project management</b>	<p>Bidders are required to describe how they will manage the Project utilising appropriate resources and describe how they will work with the various stakeholders, such as the CHIP SteerCo, to get information and manage potentially conflicting relationships.</p>

### CRITERION 2: EXPERIENCE (WEIGHTING: 30%)

Description	Information required from Bidders
<p><b>Experience in and knowledge of purification technologies for current and emerging hydrogen applications.</b></p> <p><b>Experience in conducting cost benefit analyses, especially when examining effect of specific technologies on levelized cost of hydrogen.</b></p> <p><b>Experience in and knowledge of technology market appraisal including assessment of innovation needs, preferably relating to clean hydrogen.</b></p>	<p>In the Main Bid Document, Bidders should elaborate on experience of the criteria described and explain how these past experiences are relevant for this tender.</p> <p>In addition, Bidders should provide at least two examples (with reference to specific roles, responsibilities and activities the Bidder undertook) of previous work which illustrates the Bidder's skills, capabilities, and experience in all of these areas (Bidders may wish to make reference to submitted examples of previous work for other clients).</p> <p>Bidders are advised that experience is considered a key important criterion and partnerships with other companies to support certain areas of experience are welcomed. All experience / case studies should be attached as an appendix to the Main Bid Document.</p>

### CRITERION 3: STAFF SKILLS (WEIGHTING: 15%)

Description	Information required from Bidders
<b>CVs/Resumes</b>	Bidders are required to provide detailed CVs/Resumes for any key personnel who will be involved with this Contract together with proposed Project structure, intended position of the key personnel in the Project, and main responsibilities. CVs should include professional memberships of proposed staff working on this Project.
<b>Applicable skills</b>	Bidders should elaborate on the most relevant skills of the key personnel that will be involved in the Project.
<b>Prior experience from involved staff</b>	Please include examples of similar work performed by the proposed staff members, explaining how is relevant to the Approach to Work.
<b>Expert engagement</b>	A close working relationship with key stakeholders such as purification OEMs, research institutions, innovators, trade bodies, end users., as well as the CHIP SteerCo are seen relevant to the success of this Project. Please supply ideas of how these groups can be engaged and leveraged.

### CRITERION 4: BID PRICE (WEIGHTING: 25%)

Description	Information required from Bidders
<b>Day rates and man hours (man-h) for all staff grades</b>	In the Bid Price Calculation Sheet, Bidders are required to provide day rates for all staff grades and to input the man-h involved in each Work Package.
<b>Price for the delivery of the Project</b>	<p>In the Bid Price Calculation Sheet, Bidders are required to provide a cost breakdown by Work Package, including man hours and day rates of personnel completing the work as specified in section 5.</p> <p>Bidders are required to specify expected expenses separate from the estimated budget for each Work Package.</p> <p>The Bid Price will be assessed on the price for the Approach to Work (which includes the price of the Work Packages in the Scope of Work and any Alternative Work proposed by the Bidder).</p> <p>If there is any Additional Work proposed by the Bidder, this will be evaluated separately. The suggestion of Additional Work by the Bidder will not have a negative impact on the evaluation of the tender.</p> <p>Carbon Trust will reimburse reasonable expenses at cost and receipts may be requested. Pre-approval will be required for travel costs over £150 per return journey and combined hotels &amp; subsistence cost exceeding £200 per day.</p> <p>Bidders will be required to confirm or comment on their ability to carry out the activities detailed in the Scope of Work within the initial term of the Contract and provide an outline plan of work.</p>

## 8. Glossary

Approach to Work	Has the meaning set out in section 3.1.
Additional Work	Any activities that are proposed by the Bidder in addition to those in the Scope of Work. It is at the discretion of the Carbon Trust to consider Additional Work in the evaluation of the tender. The suggestion of Additional Work by the Bidder will not have a negative impact on the evaluation of the tender.
Alternative Work	Deviations from the Scope of Work that are proposed by the Bidder, which replace work or tasks in the Scope of Work. Alternative Work will be treated as non-optional in the evaluation of the tender.
Award Letter	A letter, issued by Carbon Trust, informing the Contractor about the award of the Contract. The Award Letter is issued together with the Final Scope of Work and the CHIP Phase II Contractors' Conditions.
Bidder	An individual, a company, an organisation or a consortium submitting a bid for the Project.
Bid Price	The total price for the Bidder to complete the Project in line with the Approach to Work. The Bid Price shall include the price for all Work Packages described in the Scope of Work and any Alternative work proposed by the Bidder. The Bid Price shall not include the price of any Additional Work suggested by the Bidder.
Bid Price Calculation Sheet	An Excel template provided by the Carbon Trust that is to be provided by the Bidder in addition to the Main Bid Document.
Carbon Trust Project Manager	The Carbon Trust employee who serves as first point of contact in relation to this ITT and the Project.
CHIP	Clean Hydrogen Innovation Programme.
CHIP Partners	Has the meaning set out in section 1.1.
CHIP SteerCo	Has the meaning set out in section 1.3.
Clarification Document	A document containing all received clarification questions and Carbon Trust's responses to these questions.

Contract	A document consisting of the Award Letter, the Final Scope of Work, the CHIP Phase II Contractors' Conditions, and any clarifications agreed in writing.
Contractor	The Bidder (or in the case of a consortium, Bidders) selected for the delivery of the Project.
Description of Tender	This document.
DESNZ	Has the meaning set out in section 1.1.
Due Diligence Questionnaire	A questionnaire that is to be completed by shortlisted Bidders should Carbon Trust's bidders vetting process give reason to conduct a due diligence. In case of a consortium, the Due Diligence Questionnaire is to be filled-in by the designated Project Coordinator.
Executive Summary Report	A 3-page report containing a high-level description of the Work Programme and a summary of the relevant results, findings and conclusions of the Project. Information can be taken from summaries written for previous Work Packages
Final Scope of Work	The agreed Work Programme for the Project, based on the Scope of Work and the Approach to Work, which is mutually agreed between the Carbon Trust and the Contractor.
Flash Report	A template provided by the Carbon Trust at Project start.
Invitation to Tender (ITT)	The following group of documents: Description of Tender (this document); CHIP Phase II Contractors' Conditions; Tender Certificate template; Bid Price Calculation Sheet template; and Clarification Document (if applicable <sup>3</sup> ).
Main Bid Document	Has the meaning given in section 3.1. No template is provided.
Project	The Hydrogen purification cost-benefit analysis or Purification project.
Project Closeout Form	A template provided by the Carbon Trust towards the end of the Project.

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<sup>3</sup> A Clarification Document will not be published if no clarification questions are received in relation to this ITT.

Project Deliverables	The individual deliverables including, but not limited to, any reports, technical notes, documents, drawings, models, data, webinars to be produced by the Contractor according to the Scope of Work (see section 4) or as otherwise agreed in the Final Scope of Work.
Tender Certificate	A declaration that is to be provided by the Bidder (in case of a consortium: by the designated Project Coordinator) in addition to the Main Bid Document.
Total Budget	The expected amount of money available that will be made available from CHIP to the Contractor for the delivery the Project.
Work Package	A group of related tasks to be delivered under the Project.
Work Programme	The entirety of all Work Packages.