DPS FRAMEWORK SCHEDULE 4: LETTER OF APPOINTMENT AND CONTRACT TERMS

Part 1: Letter of Appointment

Dear [redacted]

Letter of Appointment

This letter of Appointment dated Thursday, 25th November 2021, is issued in accordance with the provisions of the DPS Agreement (RM6018) between CCS and the Supplier.

Capitalised terms and expressions used in this letter have the same meanings as in the Contract Terms unless the context otherwise requires.

Order Number:	PS21133 Supply chains to support a hydrogen economy
From:	The Department for Business, Energy and Industrial Strategy (BEIS), 1 Victoria Street, London, SW1H 0ET ("Customer")
To:	Optimat Ltd, Torus Building, Rankine Avenue, Scottish Enterprise Technology Park ("Supplier")

Effective Date:	Monday, 29th November 2021
Expiry Date:	Thursday, 31st March 2022 Notice Period of Cancellation is 30 days

Services required:	Set out in Section 2, Part B (Specification) of the DPS Agreement and refined by: · the Customer's Project Specification attached at Annex A and the Supplier's Proposal attached at Annex B;

Key Individuals:	[redacted]

Contract Charges (including any applicable discount(s), but excluding VAT):	The Customer shall pay the Supplier the sum of £79,950.00 excluding VAT for delivery of these Services. For the avoidance of doubt, the Contract Charges shall be inclusive of all third party costs. All charges shall be in alignment with the submitted price schedule located in Annex A to these contract terms.

Insurance Requirements	Additional public liability insurance to cover all risks in the performance of the Contract, with a minimum limit of £5 million for each individual claim Additional employers' liability insurance with a minimum limit of £5 million indemnity Additional professional indemnity insurance adequate to cover all risks in the performance of the Contract with a minimum limit of indemnity of £2 million for each individual claim.
Liability Requirements	**Suppliers limitation of Liability** (Clause 18.2 of the Contract Terms);
Customer billing address for invoicing:	All invoices should be sent to should be sent to ap@uksbs.co.uk or Billingham (UKSBS, Queensway House, West Precinct, Billingham, TS23 2NF).

GDPR	As per Contract Terms Schedule 7 (Processing, Personal Data and Data Subjects)

FORMATION OF CONTRACT

BY SIGNING AND RETURNING THIS LETTER OF APPOINTMENT (which may be done by electronic means) the Supplier agrees to enter a Contract with the Customer to provide the Services in accordance with the terms of this letter and the Contract Terms.

The Parties hereby acknowledge and agree that they have read this letter and the Contract Terms.

The Parties hereby acknowledge and agree that this Contract shall be formed when the Customer acknowledges (which may be done by electronic means) the receipt of the signed copy of this letter from the Supplier within two (2) Working Days from such receipt

[redacted]

Date: 30th November 2021 Date: 2nd December 2021

ANNEX A

Customer Project Specification

1. Background

The Department for Business, Energy and Industrial Strategy (BEIS) wishes to appoint a contractor (or consortium) to perform research to examine the supply chains needed to support a UK hydrogen economy.

Low carbon hydrogen will be a key enabler for the UK to meet its net zero target and the UK's Hydrogen Strategy outlines the UK Government's vision for the development of a UK hydrogen economy, with an ambition for 5GW of hydrogen production by 2030, the development of hydrogen networks and storage, and a range of possible end-users.

To realise the economic opportunities that a thriving hydrogen economy holds for the UK, the Hydrogen Economy team, part of the Industrial Energy Directorate within BEIS, is looking to commission research to develop HMG's evidence base in order to improve our understanding of the supply chains needed to support a future hydrogen economy.

The research project will need to combine knowledge based upon existing literature, data and analysis related to hydrogen supply chains with new research and analysis to develop our understanding of the supply chains needed to meet UK ambitions.

While existing studies have examined a range of supply chain related issues, there is a need to develop a more granular understanding of the supply chain needs for a future UK hydrogen economy. At this early stage in the development of the hydrogen economy, this includes developing a detailed assessment of the supply chains needed for hydrogen technologies and infrastructure (identifying key systems, components and materials at different tiers within these supply chains), estimating the future demand that these supply chains will need to meet and identifying potential opportunities or risks for the UK supply base.

The evidence from this new research will help government to identify where supply chains might need to be supported, or established, and better understand the opportunities for the UK to take advantage of domestic and global export opportunities arising from the deployment of hydrogen. This will support the development of policies to ensure that the UK meets its hydrogen ambitions in 2030 and beyond, while maximising the associated economic benefits.

The findings from this research will directly inform the Hydrogen Sector Development Action Plan, due to be published in early 2022. The research will also guide and support broader work within government on hydrogen supply chains and we anticipate that further work will likely be necessary to deepen our understanding across the full hydrogen value chain as the sector develops.

2. Aims and Objectives of the Project

The proposed research project aims to deliver a better understanding of the supply chains needed to deliver the technology and infrastructure for a future hydrogen economy. This will provide an evidence base and analytical tools to build upon in future as the Hydrogen Economy team's work in this area continues to develop.

The broad aims of this research are to:

- develop a detailed understanding of the supply chains needed for hydrogen technologies and infrastructure, including identifying the key systems, components and materials within different tiers of these supply chains
- estimate the future demand that these supply chains will need to meet and their associated economic benefits
- examine existing supply chain capabilities and their ability to meet future demand, identifying opportunities or risks for the UK supply base

The evidence from this research will help the to identify where supply chains might need to be supported, or established, and contribute to our objective of ensuring that the UK can achieve its hydrogen ambitions for 2030 and beyond while maximising the economic benefits of doing so.

Detailed objectives and research questions

By combining knowledge from previous studies with new research and analysis, the project will need to address the detailed objectives and research questions below.

As outlined in the detailed objectives below, the research project should begin by assessing those supply chains needed across the hydrogen economy, before performing more detailed analysis of specific supply chains. While the long-term aim is to improve our understanding of supply chains needed across the full hydrogen economy, for this initial research it is anticipated that detailed analysis (points 2 – 5) will focus upon those supply chains related to:

- hydrogen production (including different methods)
- transmission, distribution & storage
- fuel cells (across different applications)

The research should also consider any important cross-cutting or supporting technologies.

The *primary objectives* are to:

1. Review the key supply chains needed to support a future UK hydrogen economy.

Question: What are the key supply chains that are needed to support a UK hydrogen economy?

Detailed objectives:

- Provide an overview of the supply chains needed to support key technologies and infrastructure required across different parts of a future hydrogen economy, including production, distribution & storage and end-use in different sectors.

2. Characterise supply chains, identifying the key systems, components and materials required and their associated value chains.

Question: What are the key systems, components and materials required for different hydrogen technologies and infrastructure, and what are their associated value chains?

Detailed objectives:

- Develop a detailed understanding of the different elements (systems, components and materials) within tiers of supply chains, develop a taxonomy to categorise these elements, and indicate the TRL (Technology Readiness Level) of technologies.
- Provide diagrams outlining each of the supply chains for hydrogen technologies and infrastructure to show the key elements within different tiers of these supply chains.
- Determine relevant quantities, costs, investment, value-added and employment requirements associated with the different elements within these supply chains.
- Indicate those elements that are hydrogen-specific and those that are standard and used in other sectors or applications.

3. Determine the potential future demand for systems, components and materials that supply chains will need to deliver and their associated economic opportunities.

Question: What will the demand for systems, components and materials be due to the future deployment of different hydrogen technologies and infrastructure, and what are their associated economic benefits?

Detailed objectives:

- Based upon domestic and global scenarios developed with BEIS, estimate the potential supply chain requirements associated with meeting domestic demand and opportunities to supply to global markets.
- Quantify the required systems, components and material needs and estimate when demand for these will materialise.
- Determine the potential value of different supply chain opportunities (quantifying the investment required, total GVA and jobs (by type) associated within different elements and tiers of the supply chain).
- Identify high-value supply chain opportunities and rank/prioritise these for the UK.

The *secondary objectives* are to:

4. Examine existing supply chain capabilities, the ability of supply chains to meet future demand, and map UK strengths and weaknesses against economic opportunities.

Question: What are the existing supply chain capabilities, what is the ability of supply chains to meet future demand, and how do UK strengths and weaknesses map against economic opportunities?

Detailed objectives:

- Identify existing UK and international capabilities and expertise within different tiers of supply chains (identifying relevant companies), with reference to the technology TRLs and highlighting transferrable capabilities and expertise from other sectors.
- Examine the ability of domestic and international supply chains to meet future demand, considering both capability and capacity, and noting any competition for supply chains from other future technologies and fuels.
- Highlight existing UK strengths and weaknesses within supply chains and map these against their associated economic opportunity to identify areas that the UK could seek to develop capabilities in.

5. Identify potential constraints or gaps that risk delaying or preventing the deployment of hydrogen technologies and infrastructure.

Question: Which supply chain constraints or gaps could risk delaying or preventing the deployment of hydrogen technologies and infrastructure?

Detailed objectives:

- Identify potential UK supply chain constraints or gaps and categorise these (for example due to costs, capability, capacity, resource availability or other concerns).
- Identify the ability of overseas suppliers to address any constraints or gaps.
- Identify those gaps that could provide high-value economic opportunities.
- Rank/prioritise the importance of constraints or gaps identified for the UK.

Expected outcomes

The work will provide evidence to enable a better understanding of:

- The supply chains needed to support a hydrogen economy and the future demand that these supply chains will need to meet.
- Potential opportunities to maximise the economic benefits of a hydrogen economy.
- Existing supply chain capabilities, the ability of supply chains to meet future demand and constraints or gaps that could hinder deployment.

In line with the UK Hydrogen Strategy, the evidence from this research will help the UK Government to identify where supply chains might need to be supported, or established, and contribute to our objective of ensuring that the UK can achieve its hydrogen ambitions for 2030 and beyond while maximising the economic benefits of doing so.

The findings will be used to inform the Hydrogen Sector Development Action Plan (due to be published in early 2022) and will be shared within BEIS and wider UK government departments to provide a basis for future work across government aiming to develop our understanding of supply chains.

While this research will provide evidence to inform decision-making, it is not expected to make recommendations about specific actions needed to address the issues or opportunities identified.

3. Suggested Methodology

While we welcome tenderers to propose the methods that they think will best meet the aims and objectives of the project, suggested methodologies include:

- Reviewing existing literature, data and evidence (potentially drawing upon a range of academic, industry, government and other sources).
- Producing quantitative datasets of supply chain characteristics (quantities, costs, value added, jobs intensity and other relevant metrics) and developing analytical models to estimate future demand and associated economic benefits.
- Carrying out interviews and engagement with industry and other stakeholders to determine and validate supply chain information and supply chain capabilities.
- Developing datasets capturing supply chain capabilities to provide an assessment of UK strengths/weaknesses and gaps.
- Drawing upon in-house knowledge and expertise related to hydrogen technologies, supply chains or other relevant/transferrable expertise to add value to the project.

Any modelling work should be conducted in line with BEIS guidance and Aqua Book approaches to quality assurance, including producing detailed assumptions logs and appropriate modelling guidance. All modelling and associated documentation will be provided to BEIS, as part of the sign-off processes. Any models should allow BEIS analysts to examine the impact of changing the inputs and assumptions and should include detailed sources for any data used.

We expect that contractors will work closely with BEIS to help ensure work is of high rigour and value e.g. sharing database of literature sources, ensuring new evidence is highlighted and gaps are appropriately signposted. All analysis should look to articulate and understand the uncertainty that exists.

Where data is to be collected direct from industry and other stakeholders, the contractors will be expected to agree questions, interview discussion guides and the sample for any interviews with BEIS in advance of this stage. Bidders should set out their approach to quality assurance undertaken within any data collection and analysis process.

4. Deliverables

The required deliverables for the project include:

- Presentation slides and reports outlining findings for internal government use, both interim and final versions delivered as per the timeframes described below.
- A version of the final report for external publication (to be agreed with BEIS).
- Diagrams and datasets characterising supply chains.
- Analytical models to explore future supply chain demands and to calculate the associated economic benefits.
- Datasets and information outlining existing or potential UK and overseas supply chain capabilities.
- Any data and models should be provided in an excel spreadsheet format.
- Full details of the project methodology and assumptions, including associated quality assurance documentation for all qualitative and quantitative analysis.
- A Quality Assurance (QA) plan applied to all of the research tasks and modelling. This QA plan should be no longer than 2 sides of A4 paper. It should include the delivery of a BEIS QA Log. The QA log should be filled during the project and submitted at project completion as a deliverable to demonstrate the QA undertaken.

- Supplementary annexes, including interview discussion guides and transcripts / records of any communication with stakeholders that have contributed to the research.

Timing of deliverables:

- Interim reports and presentations focussed upon (but not necessarily limited to) addressing the primary objectives (1 – 3) should be delivered by the end of December 2021.
- Draft versions of deliverables addressing all objectives should be delivered by the end of February 2022.
- Final versions of deliverables should be delivered by the end of March 2022.

The outputs will be shared within BEIS and across wider government departments and will inform and feed into the Hydrogen Sector Development Action Plan, due to be published in early 2022.

As this project will inform the direction of future supply chain analysis related to hydrogen, it is crucial that:

- Outputs provide suitable frameworks and approaches to support further analysis and enable wider hydrogen supply chains to be studied in future.
- Findings are reported such that key opportunities or risks are clearly identified (for example, using a RAG categorisation as part of ranking/prioritisation of issues to clearly highlight the most and least important).
- Limitations, gaps in evidence and areas requiring further work are clearly identified and discussed to inform further work.

We propose monthly performance reviews with weekly update calls to monitor progress, review interim findings and inform the direction of research as the project develops.

Payments will be linked to the delivery of key milestones in December and March. These are indicative milestones and specific dates will be agreed with the contractor.

Quality Assurance (QA)

All models and modelling must be quality assured and documented.

Contractors should include a Quality Assurance (QA) plan that they will apply to all of the research tasks and modelling. This QA plan should be no longer than 2 sides of A4 paper. It should include the delivery of a BEIS QA Log.

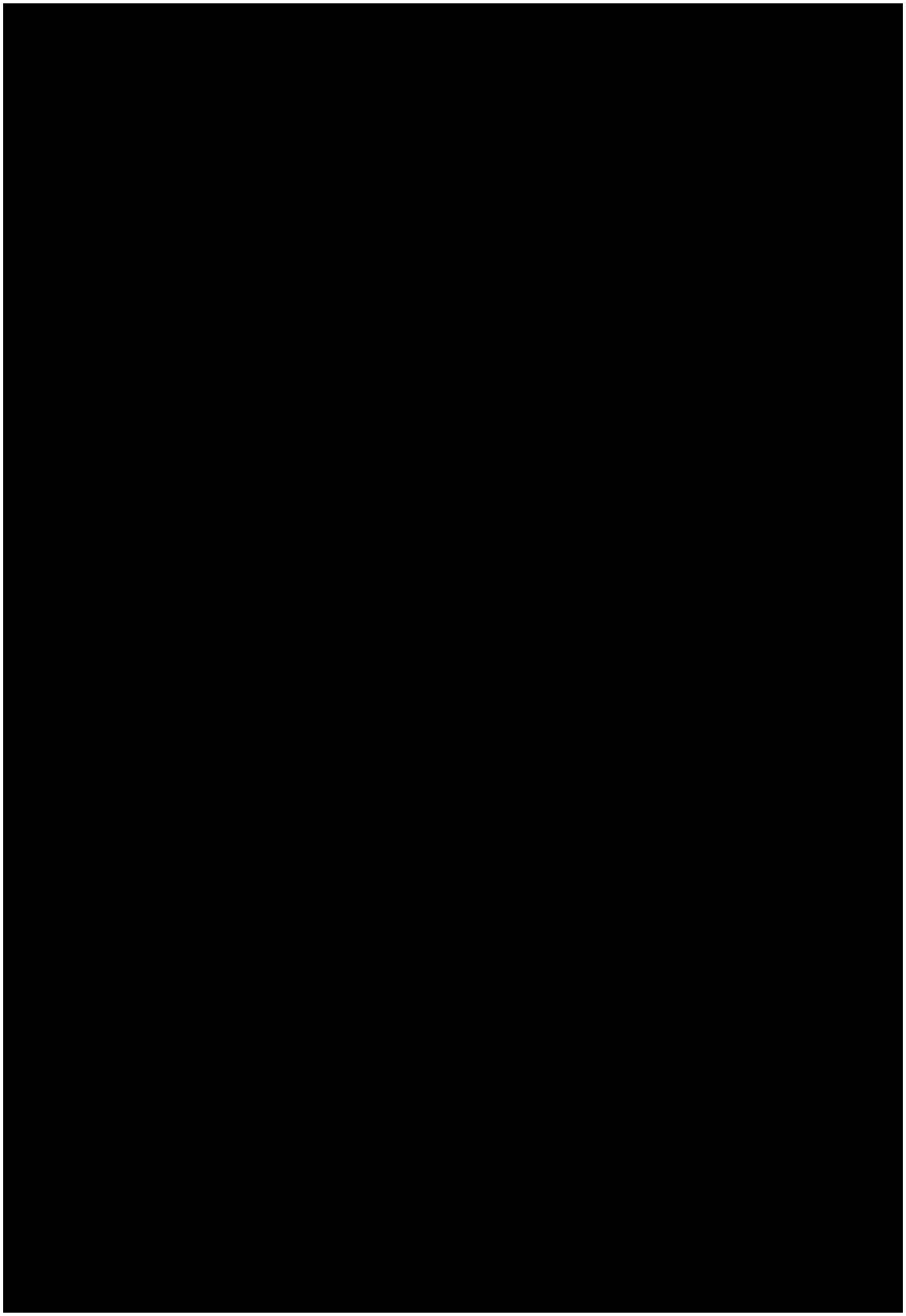
This link contains an externally accessible version of the BEIS Modelling QA guidance, and the QA log: The QA log should be filled during the project and submitted at project completion as a deliverable to demonstrate the QA undertaken.

When models are submitted to BEIS, during the project or at completion, they should be accompanied by confirmation by a senior (partner or equivalent) of the contracting organisation, that the assurance has taken place in accordance with approaches outlined in the QA plan agreed with BEIS. Evidence of testing through development provided in support of the QA Log ratings greatly improves the level of confidence in it.

For all projects Contractors must supply quality assurance evidence for any existing models they wish to submit to BEIS. This must be:

ANNEX B

Supplier Proposal



Part 2: Contract Terms

Contract Terms v6.0