DPS FRAMEWORK SCHEDULE 4: LETTER OF APPOINTMENT AND CONTRACT TERMS

Part 1: Letter of Appointment

Dear Sirs

Letter of Appointment

This letter of Appointment dated 11th September 2020, 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:	CR20060
From:	The Department for Business, Energy, and Industrial Strategy, 1 Victoria Street, Westminster, London, SW1H 0ET ("Customer")
To:	Enerdata SAS, 47 avenue Alsace-Lorraine, Grenoble, France, 38000 ("Supplier")

Effective Date:	11th September 2020
Expiry Date:	22nd January 2021

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

Key Individuals:	[redacted]

Contract Charges (including any applicable discount(s), but excluding VAT):	As per AW5.2 Price Schedule response highlighted within the RM6018 Contract Terms, section; Annex 1 – Contract Charges; £89,922.03 Excluding VAT. The sum of £89,922.03 Excluding VAT will be set at an exchange rate of 1.1107400 that was fixed on (Monday, 3rd August 2020 – as per PROJ1.4 submitted by Enerdata SAS) equating to a fixed sum of €99,880.00.

Insurance Requirements	Additional professional indemnity insurance adequate to cover all risks in the performance of the Contract with a minimum limit of indemnity of £1 million for each individual claim. Product liability insurance cover all risks in the provision of Deliverables under the Contract, with a minimum limit of £5 million for each individual claim.
Liability Requirements	**Suppliers limitation of Liability** (Clause 18.2 of the Contract Terms);
Customer billing address for invoicing:	The Department for Business, Energy, and Industrial Strategy c/o UK Shared Business Services, Queensway House, 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

For and on behalf of the Supplier:

Name and Title: [redacted]

Signature: [redacted]

Date: 18.09.2020

ENERDATA
47, Avenue Alsace Lorraine
38000 GRENOBLE
FRANCE
Tel 33 (0)4 76 42 25 46 - Fax 33 (0)4 76 51 61 45
489 319 111 RCS Grenoble

For and on behalf of the Customer:

Name and Title: [redacted]

Signature: [redacted]

Date: 22 September 2020

APPENDIX A

Customer Project Specification

Introduction

The UK Government and the Devolved Administrations are firmly committed to carbon pricing as an effective tool for achieving our carbon emissions reductions targets. Our future approach will be at least as ambitious as the current EU Emissions Trading System (EU ETS) and will provide a smooth transition for relevant sectors.

We require data on abatement opportunities in the form of Marginal Abatement Cost Curves (MACCs) and the related business as usual emissions (BAUs) path they are derived to match. By business as usual we mean a projection of emissions in the absence of an incentive to abate emissions from an emissions trading scheme, but this still includes the impact of other carbon abatement policies. This is for analysis for policy development of carbon pricing in the UK which, at this time, primarily concerns contributing to the development of a net zero cap for a UK ETS and also for producing the related carbon values for this from internal models using these data (More information on carbon valuation can be found here).

For 2020, BEIS requires UK Business as Usual emissions and Marginal Abatement Cost Curves (MACCs) that are broadly consistent with BEIS' internal assumptions (such as on energy demand, energy supply, policy impact analysis and resulting emissions) for the UK BEIS Carbon Price Model (UK BCPM). Business as usual emissions are those which would occur if there was no carbon price from an EU ETS (EUAs) or UK replacement scheme for it.

In summary, we want to align the evidence and assumptions underpinning our MACCs and BAUs with the most up to date evidence available to BEIS. This is important for future work developing a net zero consistent approach for a future carbon pricing scheme. Hence, we will look to develop an approach with the contractors that reflects broader BEIS evidence on net zero decarbonisation.

Aims & Objectives of the Project

The overall aim of the project is for BEIS to receive tailored data sets of Marginal Abatement Cost Curves (MACCs) with their related Business As Usual emissions (BAUs).

The datasets will need to have broad consistency, as specified and agreed, with BEIS internal assumptions (such as on energy demand, energy supply, policy impact analysis and resulting emissions) under three scenarios. These sets are for central, low and high emissions scenarios.

These data and supporting documentation will then be used in analysis to meet these objectives:

- Evidence to underpin updated UK (short-term) traded carbon values (from the UK BCPM).
- A robust analytical capability within BEIS to estimate the effects of policy options for the future of emissions trading in the UK and for Net Zero in the UK by 2050.

These will be used as inputs in the UK BEIS Carbon Price Model (UK BCPM), and for the UK element in the EU ETS BEIS Carbon Price Model (EU BCPM).

The contractor will need to produce:

i) An agreed approach to obtain consistency with BEIS internal assumptions (such as on energy demand, energy supply, policy impact analysis and resulting emissions – see suggested methodology).
ii) Business As Usual (BAU) emissions and Marginal Abatement Cost Curves (MACCs) for the UK ETS: as consistent with EEP for central, high and low scenarios. These are:
    - UK greenhouse gas (GHG) emissions for the years 2015 – 2050, to be provided at – at least – five yearly interval and disaggregated by sectors and technology within the traded sector and also, it is highly desirable, of the non-traded sector.
    - Corresponding Marginal Abatement Cost Curves (MACCs) for the period.
iii) an accompanying technical report.

To set out the reasoning for their approach, the contractor will also provide:
i) an explanation of their proposals for consistency with BEIS internal assumptions,
ii) the assumptions and methodology they propose to use in detail with reasoning,
iii) a description of the quality assurance process and checks they will undertake and
iv) evidence to indicate that their analysis – and associated quality assurance – will be robust and fit for purpose.

Suggested Methodology

In previous years UK and EU-level BAUs and MACCs have been produced for BAU using a whole-systems energy model capable of providing energy and emissions forecasts at a given GDP level by equilibrating supply and demand through energy prices with feedbacks to technology prices and learning. We remain open to alternative modelling approach so long as these are robust and the contractor can clearly explain how their suggested approach meets our evidence requirements and is fit for purpose. A flexible model is needed as we require it to be adjusted to an agreed consistency with EEP and its inputs / assumptions.

This model should be used to produce:

- BAU greenhouse gas emissions projections for UK economy - split between sectors covered by the ETS and those not covered. BAU is defined as emissions where there is no carbon price from an EU ETS (EUAs) or UK replacement scheme for it.
- Marginal abatement cost curves each year at sensible carbon price increments – for example per unit of currency (in previous years we have obtained this per 25 cents to 50 euros and then per euro) – up to the carbon price at which the maximum amount of abatement could be achieved. We are open to discussion on what would be the most appropriate carbon price trajectory (i.e. linear/curved) to assume in the construction of annual MAC curves.

More detailed information on the scope and level of detail of BAU emissions projections and MACCs is as below, followed by requirements on matching BEIS data and documentation.

- MACCs and BAUs be produced for the period 2020 to 2050

We require historical emissions from 2015 to 2019 and then BAU emissions projections on an annual basis to 2050. We require MACCs on an annual basis to 2050.

In addition, we require the degree of robustness and reliability of outputs and any differences in this for outputs relating to different time periods to be clearly explained. For instance, reduced accuracy for outputs pertaining to later years (e.g. greater uncertainty post-2020/2030) or path dependencies across time periods (e.g. future abatement options being precluded by abatement decisions in the past) should be clearly described.

- MACCs and BAUs to cover all greenhouse gas emissions and sectors in the traded sector (ie. that covered by the EU Emissions Trading System) and the contractor should cover the option of including the non-traded sector.

- MACCs and BAUs to be disaggregated by sector and mitigation option.

Outputs need to be provided at a disaggregated level for each sector and mitigation option separately.[1] We require that the degree of robustness and reliability of outputs and any differences across sectors is clearly explained. For instance, we require any data limitations or policy uncertainty for particular sectors which make particular outputs more or less accurate or reliable than others to be clearly described.

In the case of aviation, this should be disaggregated into domestic (UK only), UK to and from inter-EEA, UK to and from international. We would also appreciate information about the treatment of flights to and from Switzerland and any information about the divide between countries signed up to CORSIA and those not.

- MACCs and BAUs to be provided for three scenarios

Outputs should be provided for three emissions scenarios: in the past this has varied different combinations of fossil fuel prices (prices of coal, gas and oil) and rates of economic growth. BEIS uses these outputs for sensitivity analysis. The three scenarios are described below:

i. Central scenario aligned to BEIS EEP emissions projections for BAU scenario (this is different to a published reference case scenario).
ii. High BAU emissions scenario – where input assumptions are adjusted to produce a realistic scenario where UK BAU emissions are higher than the central estimate.
iii. Low BAU emissions scenario where input assumptions are adjusted to produce a realistic scenario where UK BAU emissions are lower than the central estimate.

The scenarios need to provide a credible **range** suitable for policy development.

- MACC outputs broken down into small increments in currency/tCO2e

[1] Here a "sector" is for the whole emissions reductions in a given sector such as power or industry. We suggest a minimum being Power, Industry, Domestic Aviation, International Aviation and International Maritime and, it is highly desirable, that non-traded sector also be provided. "Mitigation option" represent the actions or measures contributing to these reductions, such a reduction in activity from the sector, fuel switching in a sector, or CCS deployment in a sector amongst others.

MACCs should be provided in small increments as appropriate to the granularity of the data.

- MACCs are technology specific

All assumptions about available technologies underlying each MACC should be clearly stated and explained in the accompanying report. Abatement technology employed across the MACCs will be clearly explained.

- The contractor should work with BEIS to best ensure consistency between BEIS's internal energy and emissions modelling assumptions and their own modelling assumptions.

The supplier will need to:

i) Propose for agreement with BEIS an appropriate approach for consistency with BEIS assumptions using their knowledge and expertise of their own model and applying this to determine suitable matches. A list of data matches is given below alongside the need for them.
ii) To then use and adjust their model to provide BAU and MACC data that are consistent with BEIS data.

We expect to develop the approach to consistency with the contractor using their expertise and understanding to propose consistency approaches with EEP data and matches that were appropriate for the operation of their model, and meet our requirements. For example, for 2019, BEIS purchased BAUs and MACCs that were consistent with Energy and Emission Projections (EEP). In that year, the consistency was achieved by matching on the level of emissions and by providing several key data inputs.This matching meant producing BAUs that were within 2 percent for 2030 and 8 percent for 2020 and 2025 of the equivalent EEP emissions for those years. The data provided were the same population growth, fossil fuel prices, economic growth and exchange rate figures as are used in EEP.

In producing a business as usual emissions trajectory for the UK, it would be desirable for the successful bidder to be able to match BEIS internal modelling with a reasonable level of fidelity on the following variables across the time period:

- Overall ETS-covered emissions split by sector (power generation, industry, aviation)
- Gross inland energy consumption by source (oil, gas, coal, renewables, nuclear)
- Gross final consumption split by source and sector.
- Electricity generation/capacity by source (gas, coal, wind, nuclear, biomass, interconnectors, other).
- Overall non-ETS emissions.

In producing MACCs we would be looking for the contractor to work flexibly with BEIS to ensure that assumptions around costs of different abatement technologies and role out speeds are broadly similar to BEIS's internal assumptions. (Or at least to be able to understand and justify differences which exist).

- Documenting Assumptions and Inputs

Documentation of assumptions and inputs for each scenario (Central, Low and High) should cover:

i Assumptions used in the Contractors' model
ii Inputs used in Contractors' model
iii Quality Assurance

The contractor should note where the data was provided by BEIS and where such data was adjusted before input.

The BEIS suite of assurance products, including the assumptions log, is here:
https://www.gov.uk/government/collections/quality-assurance-tools-and-guidance-in-decc

- Format of data

All BAUs, MACCs and other data should be provided to BEIS in a format/template to be agreed between BEIS and the contractor in the course of the project. This could include but is not limited to data in .xlsx, .csv or other formats suitable for directly ingesting into a database. This should include meta data such as field definitions.

Each deliverable should be accompanied by a document (which may be an email) confirming the QA carried out and summarising any points of interest. In particular:

i Key points of note
  - Central: analysis of how closely BAU emissions match to EEP zero ETS price run
  - High and Low: including differences from Central

ii Brief qualitative discussion of outputs, explaining any anomalies and/or counter-intuitive results

iii Use of data
  - Robustness and reliability of outputs and any differences in this: over time and across sectors
  - Suitability of outputs for use in specific kinds of analytical work (for instance, whether the outputs are suitable for doing some kinds of analysis but not others)
  - Any limitations to the inputs, approach and/or model used to produce the MACCs and BAU emissions projections

iv Quality Assurance

- Accompanying report

MACCs and BAU emissions projections will be accompanied by a short report (around 25 pages excluding annexes) covering the following areas:

i Executive summary

ii Description of model
  - All underlying assumptions and background information which is necessary for understanding the outputs
  - Methodology used in analysis, including derivation of MACCs and BAU emissions projections

iii Approach to producing scenarios
  - BAU scenarios: sectors and mitigation options
  - MACCs
  - Robustness and reliability of outputs and any differences in this (as described in the previous section): over time and across sectors
  - Suitability of outputs for use in specific kinds of analytical work (for instance, whether the outputs are suitable for doing some kinds of analysis but not others)

- Any limitations to the inputs, approach and/or model used to produce the MACCs and BAU emissions projections

iv BAU scenarios
- Central: sectors and options
- High and Low: including differences from Central
- Analysis of matching process.
- Brief qualitative discussion of outputs, explaining any anomalies and/or counter-intuitive results

v MACCs
- Central
- High and Low: including differences from Central
- Analysis of matching process.
- Brief qualitative discussion of outputs, explaining any anomalies and/or counter-intuitive results

vi Quality Assurance
- QA plan (as agreed at project start)
- Including summary of QA log(s) and sign-off confirmation.

- Steering Group Meetings

Progress against milestones set out in the timetable in this specification will be monitored and discussed at Steering Group meetings. The Steering Group will consist of staff from BEIS, other government departments, the Committee on Climate Change (CCC) and the devolved authorities. The two Steering Group meetings will be hosted by BEIS in accordance with any social distancing guidance. We expect one progress presentation and one final presentation. Comments from the Steering Group will need to be incorporated into the outputs.

- Quality Assurance

We require all models and modelling to be quality assured and documented to BEIS standards[2]. We require the contractor to provide – and agree – a quality assurance plan at the start of the project that they will apply to all of the tasks and modelling in this project. This QA plan should be no longer than 1 or 2 sides of A4 paper.[3]

We require the quality assurance plan to:

- specify who will be responsible for quality assurance.
- ensure that quality assurance is done by individuals who were not directly involved in the analysis or model development.
- specify how outputs will be quality assured in house.

We require that QA tasks undertaken be logged in a QA log and this log shared as part of work updates. We require that sign-off for the quality assurance be done by someone of sufficient seniority within the contractor organisation to take responsibility for the work done.

[2] Standards are here: https://www.gov.uk/government/collections/quality-assurance-tools-and-guidance-in-decc
[3] This link contains an externally accessible version of the BEIS Modelling QA guidance, and the BEIS QA log.

Acceptance of the work by BEIS will take this into consideration. BEIS reserves the right to refuse to sign off outputs which do not meet the required standard specified here.

Deliverables

Deliverables include at a minimum:

- An agreed approach to achieving consistency with BEIS assumptions – 11 September 2020
- Historical emissions data on all sectors provided – 2 October 2020
- Business As Usual (BAU) emissions and Marginal Abatement Cost Curves (MACCs) for the UK ETS as adjusted to UK EEP emissions (Central scenario) and inputs (all scenarios). Central BAUs for 2 October, Central MACCs for 16 October, High/Low BAUs for 6 November 2020 High/Low MACCs for 20 November 2020.
- The underlying assumptions and methodology used for the BAUS and MACCs in detail with reasoning alongside delivery of the data,
- Outputs for the Business as Usual scenario, such as for instance fuel consumption, prices, technology deployment, generation, etc. (required). Similar outputs for selected significant MAC curve points (desirable). These should be delivered alongside the relevant data.
- Two Steering Group meetings attended by the contractors on their modelling and assumptions – one face-to-face (depending on travel and social distancing restrictions) and one by conference link the first in the fortnight following delivery of the central MACCs and the second following delivery of the High/Low MACCs.
- A technical report about the data by 23 December 2020.
- An assumptions log outlining internal Quality Assurance plans and validity/impact of each key assumption included in the modelling with the relevant dataset.

In addition, intermediate outputs will need to be provided over the course of the project:

- an agreed plan of work;
- an agreed plan of quality assurance actions and completed quality assurance spreadsheets/logs in line with BEIS's quality assurance framework;
- fortnightly updates by email or telephone on progress against milestones;
- draft final outputs (to be provided for comments before final versions are agreed).

Part 1: Contract Terms

Contract Terms v6.0