



Professional Service Contract

Contract Data Forms

June 2017

(with amendments January 2019)

This agreement is made between the *Client*, the *Consultant* and the Named Suppliers.

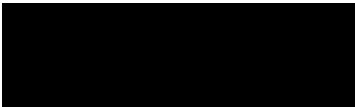
Terms in this agreement have the meanings given to them in the contract between the Environment Agency and WSP UK Limited for the provision of MACC Project (the *service*).

The Consultant offers to Provide the Services in accordance with these conditions of contract for an amount to be determined in accordance with these conditions of contract.

The Consultant was appointed to the framework and executed the framework agreement (with reference number RM6165).

Executed under hand

by



..(Client)



. . (Consultant)

19 February 2024

Contract Data

PART ONE – DATA PROVIDED BY THE CLIENT

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

1 General

The *conditions of contract* are the core clauses and the clauses for the following main Option, the Option for resolving and avoiding disputes and secondary Options of the NEC4 Professional Service Contract June 2017 (with amendments January 2019)

Main Option	<div>A</div>	Option for resolving and avoiding disputes	<div>W2</div>
Secondary Options	<div>X2, X9, X10, X11, X18, Y(UK)1, Y(UK) 2, Y(UK)3, Z1, Z2, Z7, Z8, Z9, Z10, Z12, Z125, Z130</div>		
The <i>service</i> is	<div>a bespoke analysis of marginal abatement cost curves to suit the Environment Agency's duties, activities and organisational requirements.</div>		

The *Client* is

Name	<div>Environment Agency</div>
Address for communications	<div><div></div></div>
Address for electronic communications	<div><div></div></div>

The *Service Manager* is

Name	<div><div></div></div>
Address for communications	<div><div></div></div>
Address for electronic communications	<div><div></div></div>

The <i>Scope</i> is in	<div>PSC scope MACC_v4</div>
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The <i>language of the contract</i> is	<div>English</div>		
The <i>law of the contract</i> is the law of	<div>England and Wales, subject to the jurisdiction of the courts of England and Wales</div>		
The <i>period for reply</i> is	<div>2 weeks</div>	except that	
• The <i>period for reply</i> for	<div>n/a</div>	is	<div>n/a</div>
• The <i>period for reply</i> for	<div>n/a</div>	is	<div>n/a</div>

The *period for retention* is

6

 year(s) following Completion or earlier termination

The following matters will be included in the Early Warning Register

n/a

Early warning meetings are to be held at intervals no longer than

2 weeks

2 The *Consultant's* main responsibilities

If the <i>Client</i> has identified work which is set to meet a stated <i>condition</i> by a <i>key date</i>	The <i>key dates and conditions</i> to be met are	
	<i>condition to be met</i>	<i>key date</i>
	(1) <div>n/a</div>	<div>n/a</div>
	(2) <div>n/a</div>	<div>n/a</div>
	(3) <div>n/a</div>	<div>n/a</div>

If Option A is used	The <i>Consultant</i> prepares forecasts of the total <i>expenses</i> at intervals no longer than	<div>4 weeks</div>
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If Option C or E is used	The <i>Consultant</i> prepares forecasts of the total Defined Cost plus Fee and <i>expenses</i> at intervals no longer than	<div>N/A</div>
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3 Time

The *starting date* is

01 February 2024

The *Client* provides access to the following persons, places and things

access	access date
(1) <input type="text" value="n/a"/>	<input type="text" value="n/a"/>
(2) <input type="text" value="n/a"/>	<input type="text" value="n/a"/>
(3) <input type="text" value="n/a"/>	<input type="text" value="n/a"/>

The *Consultant* submits revised programmes at intervals no longer than

If the *Client* has decided the *completion date* for the whole of the *service* The *completion date* for the whole of the *service* is

If no programme is identified in part two of the Contract Data The period after the Contract Date within which the *Consultant* is to submit a first programme for acceptance is

4 Quality management

The period after the Contract Date within which the *Consultant* is to submit a quality policy statement and quality plan is

The period between Completion of the whole of the *service* and the *defects date* is

5 Payment

The *currency of the contract* is the
The *assessment interval* is

If the *Client* states any expenses

item	amount
<input type="text" value="n/a"/>	<input type="text" value="n/a"/>
<input type="text" value="n/a"/>	<input type="text" value="n/a"/>

The *interest rate* is % per annum (not less than 2) above the rate of the bank

If the period in which payments are made is not three weeks and Y(UK)2 is not used The period within which payments are made is

If Option C or E is used and the *Client* states any locations The locations for which the *Consultant* provides a charge for the cost of support people and office overhead are

If Option C is used

The *Consultant's share percentages* and the *share ranges* are*share range**Consultant's share percentage*

less than	<input type="text" value="n/a"/>	%	<input type="text" value="n/a"/>	%
from	<input type="text" value="n/a"/>	% to	<input type="text"/>	%
from	<input type="text" value="n/a"/>	% to	<input type="text"/>	%
greater than	<input type="text" value="n/a"/>	%	<input type="text" value="n/a"/>	%

If Option C or E is used

The *exchange rates* are those published inon (date)

6 Compensation events

If there are additional

These are additional compensation events

8 Liabilities and insurance

If there are additional
*Client's liabilities*These are additional *Client's liabilities*(1) (2) (3) The minimum amount of cover and the periods for which the *Consultant* maintains insurance are

EVENT	MINIMUM AMOUNT OF COVER	PERIOD FOLLOWING COMPLETION OF THE WHOLE OF THE SERVICE OR TERMINATION
The <i>Consultant's</i> failure to use the skill and care normally used by professionals providing services similar to the <i>service</i>	<input type="text" value="£1 million"/> in respect of each claim, without limit to the number of claims	6 years following Completion of the whole works or earlier termination
Loss of or damage to property and liability for bodily injury to or death of a person (not an employee of the <i>Consultant</i>) arising from or in connection with the <i>Consultant</i> Providing the Service	<input type="text" value="Whichever is greater of £5 million or the amount required by law"/> in respect of each event, without limit to the number of events	12 months
Death of or bodily injury to employees of the <i>Consultant</i> arising out of and in the course of their employment in connection with the contract	<input type="text" value="Whichever is greater of £5 million or the amount required by law"/> in respect of each event, without limit to the number of events	For the period required by law

The *Consultant* provides these additional insurances

(1) Insurance against

Minimum amount of cover is

The deductibles are

(2) Insurance against	n/a
Minimum amount of cover is	n/a
The deductibles are	n/a
(3) Insurance against	n/a
Minimum amount of cover is	n/a
The deductibles are	n/a
The <i>Consultant's</i> total liability to the <i>Client</i> for all matters arising under or in connection with the contract, other than the excluded matters is limited to	
	£1 million

Resolving and avoiding disputes

The *tribunal* is

Litigation in the courts

If the *tribunal* is arbitration The *arbitration procedure* is

TBC

The place where arbitration
is to be held is

TBC

The person or organisation who will choose an arbitrator if the Parties cannot agree a
choice or if the *arbitration procedure* does not state who selects an arbitrator is

The *Senior Representatives* of the *Client* are

Name (1)

'To be determined at referral stage'

Address for communications

Address for electronic communications

Name (2)

Address for communications

Address for electronic communications

The *Adjudicator* is

Name

'to be confirmed'

Address for communications

'to be confirmed'

Address for electronic communications

'to be confirmed'

The *Adjudicator nominating body* is

Institution of Civil Engineers

X2: Changes in the law

If Option X2 is used

The *law of the project* is

The law of England and Wales, subject to the jurisdiction of the courts of England and Wales

X9: Transfer of Intellectual Property Rights

X10: Information modelling

If Option X10 is used

If no *information execution plan* is identified in part two of the Contract Data

The period after the Contract Date within which the *Consultant* is to submit a first Information Execution Plan for acceptance is

4 weeks

X11: Termination by the Client

X18: Limitation of liability

If Option X18 is used

The *Consultant's* liability to the *Client* for indirect or consequential loss is limited to

£1 million

The *Consultant's* liability to the *Client* for Defects that are not found until after the *defects date* is limited to

£1 million

The *end of liability date* is

6

years after the Completion of the whole of the *service*

Y(UK)1: Project Bank Account

Charges made and interest paid by the *project bank* The *Consultant* **is not** to pay any charges made and to be paid any interest paid by the *project bank*.

Y(UK)2: The Housing Grants, Construction and Regeneration Act 1996

If Option Y(UK)2 is used and the final date for payment is not fourteen days after the date on which payment becomes due The period for payment is days after the date on which payment becomes due

Y(UK)3: The Contracts (Rights of Third Parties) Act 1999

If Option Y(UK)3 is used	term	beneficiary
	<input type="text" value="'No terms under this contract'"/>	<input type="text" value="'no beneficiaries under this contract'"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

If Y(UK)3 is used with	term	beneficiary
Y(UK)1 the following entry is added to the table for Y(UK)3	<input type="text" value="The provisions of Options Y(UK)1"/>	

Z: Additional conditions of contract

If Option Z is used

The *additional conditions of contract* are as follows**Z1 Disputes:**

Option W2 subclause W2.1(4) is deleted. The Parties agree that adjudication under Clause option W2 should only commence if the dispute resolution procedure has been exhausted and that the dispute resolution procedure in the Scope, takes precedence over Option W2.

Z2 Prevention

The text of clause 18 Prevention is deleted.

Delete the text of clause 60.1(12) and replace with:

The service is affected by any of the following events

- War, civil war, rebellion, revolution, insurrection, military or usurped power;
- Strikes, riots and civil commotion not confined to the employees of the Consultant and sub consultants,
- Ionising radiation or radioactive contamination from nuclear fuel or nuclear waste resulting from the combustion of nuclear fuel,
- Radioactive, toxic, explosive or other hazardous properties of an explosive nuclear device,
- Natural disaster,
- Fire and explosion,
- Impact by aircraft or other aerial device or thing dropped from them.

Z8 Requirement for Invoice

Insert the following sentence at the end of clause 51.1:

The Party to which payment is due submits an invoice to the other Party for the amount to be paid within one week of the Service Manager's certificate.

Delete existing clause 51.2 and insert the following:

51.2 Each certified payment is due on the later of

- one week after the paying Party receives an invoice from the other Party and
- three weeks after the assessment date, or, if a different period is stated in the Contract Data, within the period stated.

If a certified payment is late, or if a payment is late because the Service Manager has not issued a certificate which should be issued, interest is paid on the late payment. Interest is assessed from the date by which the late payment should have been made until the date when the late payment is made, and is included in the first assessment after the late payment is made.

Z9 Conflict of Interest

The Consultant immediately notifies the Client of any circumstances giving rise to or potentially giving rise to conflicts of interest relating to the Consultant (including without limitation its reputation and standing) and/or the Client of which it is aware or which it anticipates may justify the Client taking action to protect its interests. Should the Parties be unable to remove the conflict of interest to the satisfaction of the Client, the Client, in its sole discretion, may terminate this Contract.

Z10 Change in Control

The Consultant shall notify the Client as soon as reasonably practicable, in writing, of any agreement, proposal or negotiations which will or may result in a Consultant Change in Control and shall give further notice to the Client when any Change in Control has occurred. The Client may terminate this contract with immediate effect by notice in writing and without compensation to the Consultant within six (6) months of being notified that a Change of Control has occurred, or, where no notification has been made, the date that the Client becomes aware of the Change of Control, but shall not be permitted to terminate where the Client's prior written acceptance was granted prior to the Change in Control. A Change of Control is defined as per the Deed of Agreement, Z14.4.

Z12 Waiver

No waiver shall be effective unless it is expressly stated to be a waiver and communicated to the other Party by the Service Manager in writing in accordance with the Contract, and with express reference to Clause Z12. The failure of either party to insist upon strict performance of the Contract, or any failure or delay in exercising any right or remedy shall not constitute a waiver or diminution of the obligations established by the Contract.

Z125 Limitation of Liability

Under clause 87.1

after the fourth bullet point

insert the additional bullet points:

- loss of or damage to the Client's property up to £5m.
- death of or bodily injury to employees of the Consultant arising out of and in the course of their employment in connection with the contract up to £5m.

Z 130 Rate adjustment

Z130.1 The Defined Cost for People Rates shall be increased by the same proportion and on the same date as the appropriate *Framework Prices*.

PART TWO – DATA PROVIDED BY THE CONSULTANT

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

1 General

The Consultant is

Name	WSP UK Ltd
Address for communications	
Address for electronic communications	

The fee percentage is %

The key persons are

Name (1)	
Job	Project Manager
Responsibilities	Project Manager
Qualifications	
Experience	
Name (2)	
Job	Project Director
Responsibilities	
Qualifications	
Experience	

The following matters will be included in the Early Warning Register

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2 The Consultant’s main responsibilities

If the Consultant is to provide Scope	The Scope provided by the Consultant is in	MACC Project Proposal Proforma WSP.PDF
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5 Payment

If the Consultant states expenses	The expenses stated by the Consultant are any								
	<table><tr><td>item</td><td>amount</td></tr><tr><td>Travel and subsistence</td><td>2,250.00</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	item	amount	Travel and subsistence	2,250.00				
item	amount								
Travel and subsistence	2,250.00								
If Option A or C is used	The activity schedule is	Pricing Schedule - MACC Project (3)							
If Option A is used	The tendered total of the Prices is	£180,925.00							

Resolving and avoiding disputes

The Senior Representatives of the Consultant are	
Name (1)	
Address for communications	Via email
Address for electronic communications	
Name (2)	
Address for communications	Via email
Address for electronic communications	

X10: Information modelling

If Option X10 is used

If an *information execution plan* is to be identified in the Contract Data

The *information execution plan* identified in the Contract Data is

Data for the Schedule of Cost Components (used only with Options C or E)

The *overhead percentages* for the cost of support people and office overhead are

location	overhead percentage
	%
	%
	%

Data for the Short Schedule of Cost Components (used only with Option A)

The *people rates* are

category of person	unit	rate

PSC Scope template

03/10/2023

NEC4 professional services contract (PSC)

412_13_SD02

Use the template on the pages that follow to assist you when preparing the scope for an NEC4 professional services contract (PSC).

Environment Agency

NEC4 professional services contract (PSC)

Scope

Project / contract Information

Project name	Cost effectiveness in reaching Net Zero
Project SOP reference	
Contract reference	
Date	02/10/2023
Version number	1.3
Author	Brenda Dorpalen

Document history

Version	Issue data	Changes
1.4	20/11/2023	Minor wording amend to Methodology for calculating the MACCs
1.3	12/06/2023	Third Draft
1.2	20/12/2022	Second draft
1.1	15/06/2022	Resource estimates annex 2
1.0	23/05/2022	Initial draft

This Scope should be read in conjunction with the version of the Minimum Technical Requirements current at the Contract Date. In the event of conflict, this Scope shall prevail. The *services* are to be compliant with the version of the Minimum Technical Requirements and Exchange Information Requirements.

Document	Document Title	Version No	Issue date
LIT 13258	Minimum Technical Requirements	V12	30/12/2021
LIT 17641	Exchange Information Requirements	EIR v2.5	01/04/2021

Details of the Scope

Project scope: Cost-effectiveness in reaching Net Zero

1. Background to project

- (a) The Environment Agency (EA) is aiming to reach Net Zero ahead of the UK Government's legally binding date of 2050. For decarbonisation purposes, the EA will have to apply a vast array of measures entailing: the increase in the use of low carbon technologies, the deployment of natural flood management solutions, a higher use of renewable energy, the electrification of vehicles, and the rise in remote working ([Environment Agency 2021](#)). Other measures will also be necessary, considering that more than 65% of the EA emissions come from the construction sector, ([Environment Agency 2021](#)), a sector whose total emissions represent 35%-40% of all carbon emissions in the UK (Sturgis et al 2017). To offset its carbon emissions, the EA is aiming to create/restore a mix of habitats with the purposes of removing carbon. We are also interested in those interventions that avoid carbon emissions thanks to the actions of the Environment Agency. These include the extension in the life cycle of infrastructure, property flood resilience, and traditional flood management.
- (b) The deployment of marginal abatement cost curves (MACC) for the EA will fit the purpose of classifying measures according to their cost-effectiveness. A MACC summarises, in a simple way, complex and large quantities of information of the potential mitigation efforts of different options ([Eory 2018](#)). It shows the relationship between the reduction/removal of emissions and the marginal cost per unit abated (Chairat et al 2022). This means that it shows the cost of the last additional unit of carbon that makes economic sense to abate for any policy. Further additional abatement units would imply a higher cost in relation to the benefits that the measure would provide.
- (c) In light of the fourth carbon budget (2023-27), the UK Government has developed marginal abatement cost curves to compare the cost effectiveness of different measures in non-traded carbon sectors ([Gov.uk](#)). However, the EA requires a bespoke analysis adjusted to its duties, activities and its organisational requirements.

2. Aims

This project has the following aims:

1. To provide the *client* with a better understanding of the cost effectiveness of different abatement measures
2. To achieve consistency and homogeneity in the availability of information about the *Client's* carbon footprint and the respective cost of each intervention across the organisation.
3. To increase the *Client's* understanding of how MAC curves can be used to support our net zero ambitions and increase our understanding of the data requirements potential benefits / draw backs for future iterations.

As part of this *service*, the *Consultant* shall:

1. Create two MACC frameworks/models that can be updated by *Client*.
 - a. One model will only focus on decarbonisation measures.
 - b. The other will also include offsetting and carbon avoided interventions.
2. The models shall:
 - a. identify the cost effectiveness of different abatement measures (decarbonisation, insetting, offsetting, and carbon avoided) at a national and regional level in different time frames.
 - b. use the following timeframes: 2024, 2030, 2040 and 2050.
 - c. consider measures including: nature based solutions, property flood resilience and natural flood management. It should also consider that traditional flood management and the extension in the life cycle of assets avoid carbon emissions by preventing the refurbishment of properties and vehicles.

3. Analysis approach

Methodology for calculating the MACCs

The following methodology is how the *Consultant* shall calculate the MACCs if all necessary data were available. If this is not the case, this methodology will be followed as extensively as possible, and the *Consultant* shall propose an appropriate qualitative assessment of the non-quantified decarbonisation measures which will be accepted by the *Service Manager*.

- (d) The *Consultant* shall organise four initial workshops with key teams at the Environment Agency to define all the measures that will be included in the MACCs, assess carbon and cost data availability, to take reasonable steps to ensure the quality of existing sources of data, to specify forecasting and data gathering work and to identify all existing sources of Environment Agency data evidence.
- (e) The *Consultant* shall compile a list of all decarbonisation, insetting and offsetting measures that could feasibly be implemented. In the case of carbon avoided, the *Consultant* shall only focus on the interventions as defined by the *Service Manager*. It is anticipated that this exercise will define 40 measures.
- (f) The *Consultant* shall estimate the net annual emissions reductions coming from each of the forty measures, using 2019 as the baseline. Consideration will need to be given to the way in which global warming potential (GWP¹) is calculated

¹ Different greenhouse gases have different GWP, including over different time periods. The intergovernmental panel on climate change provide GWP figures such that different GHGs can be converted into one figure: carbon dioxide equivalent CO₂e. Their GWP figures are usually updated in each assessment report to reflect the most up-to-date scientific evidence. BEIS typically provide guidance on which figure should be used across government-this is AR5 w/out feedback at the time of writing. 'Feedback' refers to whether climate-carbon feedbacks are considered in the warming potential (the indirect effects of changes in carbon storage due to changes in climate (IPCC, 2013)).

when estimating emissions. This should align with the recommended by the Department for Energy Security and Net Zero methodology at the time of calculation. It will be important to check that emissions estimates use the same methodology across measures. Please see footnote 1 for more information.

- (g) The *Consultant* will collect/estimate data on the annual capital, operational, and transactional expenditures for each of the forty measures.
- (h) The *Consultant* will forecast accumulated carbon emissions and costs for each measure for different appraisal periods: 2023, 2023-2030, 2023-2040, 2023-2050.
- (i) For each measure, the *Consultant* will apply the following formula:
- (j)
$$MACC = \frac{\pounds}{tCO_2e} = \frac{NP(S)V}{tCO_2e_{avoided}} * -1$$
- (k) The *Consultant* will plot each result on a graph with a Y axis of cost effectiveness (£/tCO₂e) and an X axis of abatement potential. An example is given in the [BEIS carbon value publication](#). The *Consultant* will provide a MACC exclusively focused on decarbonisation measures and another one comprehensive of insetting, offsetting, and carbon avoided interventions.
- (l) Given the high level of uncertainty for most of the forecasts, the *Consultant* shall provide a low, central, and high case scenario for each graph.
- (m) The *Consultant* will compare and analyse the MAC curves for different appraisal periods.
- (n) The *Consultant* will compare and analyse the cost-effectiveness of different abatement strategies.
- (o) The *Consultant* will analyse caveats of the study, consider which measures could have been bundled together based on synergies and trade-offs between them, consider potential social benefits that could be quantified. In general terms, analyse how these limitations could be overcome with further iterations of the MACCs. As part of this analysis, the *Consultant* will recommend potential time frames to update the MACCs.
- (p) The *Consultant* will provide a model that can be internally updated by the *Client* and a guidance on how to use it both for the “decarbonisation” MACC and the most “comprehensive” MACCs.

4. Outcomes

The following are outcomes to be provided by the *Consultant*:

Item	Description of outcome
1	Compare the cost-effectiveness of different reduction/removal/carbon avoided

	measures for different time periods and from a regional/national approach.
2	Improve the <i>Client's</i> knowledge on the drawbacks and benefits of the MACC and how the latter could be addressed in further updates.
3	Achieve homogeneity in the availability of information on carbon and cost data across the organisation.
4	Produce two MACC models, and a guidance on how to use them, that can be easily updated by the <i>Client</i> .

5. Key deliverables

The following are the key deliverables to be provided by the *Consultant*:

Item	Key deliverables
1	Based on the workshops, the <i>Client</i> and the <i>Consultant</i> will agree on <i>which carbon measures</i> are included in the MACCs. These will be up to a total of forty measures.
2	A spreadsheet with the carbon and cost data for each measure in the MACCs (accumulated carbon reduced/removed/avoided & operational, capital, and transactional costs)
3	A Method Statement explaining how each measure in the MACCs has been calculated/estimated/forecasted (data sources, data assumptions, calculation methods, carbon and costs forecasts. These will be needed for transparency and future updates of the model)
4	An accepted excel model design (thinking about who will be using the model, for what purposes and the extent to which the model can be updated and how frequently)
5	Beta version of the model in excel
6	QA plan for the data and the Model
7	Final version of the model with graphical representations of the MACCs for the different time periods agreed.
8	Model user guidance and description
9	A written report with an introduction, literature review on MACCs, methodology, presentation and comparison of the MACC, and a conclusion recommending how the MACC could be enhanced in future iterations and defining the limitations the study.
10	Presentation of the final outcomes including a workshop on how to apply the Excel model

6. Exclusions

Item	Exclusion
1	Co-benefits/social benefits associated to decarbonisation will not be part of the MACCs, although a qualitative assessment of how these could be included in future iterations is expected.
2	Adaptation measures to climate change will not be included unless their objective is to reduce the <i>Client's</i> carbon footprint or to avoid carbon emissions by external parties.
3	Indirect impacts, rebound effect, and behavioural changes will not be part of the analysis.
4	The distributional impact of decarbonisation measures will not be assessed.

7. Evidence base for the MACCs

The *Consultant* shall review:

1) Decarbonising the Environment Agency (Task 2) Technical report

It analyses up to what extent each main decarbonisation measure will enable the *Client* to achieve Net Zero by 2030 against a business-as-usual scenario. It also considers possible pathways for FCRM decarbonisation post-2030, based on internal *Client* analysis and a literature review of decarbonisation plans in four key material production sectors.

2) EA Net Zero roadmap

The NZ roadmap outlines all the actions that will be taken by 2030 to achieve the *Client's* NZ target (both emissions and offsets). It doesn't estimate the abatement of each measure or the cost. Also, not all measures on the roadmap result in **direct** decarbonisation.

3) Environment Agency FCRM Net Zero Roadmap for infrastructure Net Zero Carbon Scenarios

This paper outlines 5 decarbonisation pathways that could be taken by FCRM in their pursuit for 45% emissions reductions. It suggests that for FCRM to reach NZ by 2030 it must pursue the 'maximum carbon reduction trajectory' that uses higher than central BEIS carbon prices and a maximum pace of technological decarbonisation.

4) EA-wide emissions inventory

The *Client* has data on the annual Environment Agency emissions broken down by sector, forecast from now until 2050. This can be used to model costs and benefits for each measure relative to a do-nothing baseline.

5) Offsetting technical report:

It analyses the carbon removal/reduction that can be achieved through different habitat creation/restoration strategies and the cost of delivery of each of them.

6) Decarbonising the Environment Agency (Technical report):

It analyses the impact on the *Client's* GHG footprint, between now and 2030, of a set of interventions and it quantifies the technical feasibility of decarbonisation of the FCRM programme beyond 2030.

7) [Marginal abatement cost curves: a call for caution, Marginal abatement costs curves and the optimal timing of mitigation measures and Marginal abatement cost curves for policy-making: expert based vs model derived curves](#)

These articles focus on some of the limitations of a marginal abatement cost curve and how some of them can be overcome. Some of these drawbacks are the lack of consideration in the interdependencies between policies, path-dependencies, behavioural aspects, speed at which decarbonisation measures can be implemented, uncertainties, transactional and informational costs, as well as short-termism in the analysis. This could be useful to enhance the MACC, but also to highlight its limitations.

8) The DTA model for technology deployment and cost and carbon reduction and the Decarbonisation Plans of Asset Type Decarbonisation of scope 3 from supply chain.

The *Consultant* is also required to undertake its own review that will be part of the literature review in the written report.

8. Timeline

January 2024-March 2024	Workshops and refinement of the scope of the project, engagement with relevant sector teams, listing of qualitative elements, agreement on measures to be included in the MACC, agreement on forecasting and data collection methods.
April-June 2024	Collating datasets/evidence base/forecasting

July-October 2024	Quantitative analysis/preparation of the MACC.
September-October 2024	Writing report
November-December 2024	Project delivery, diffusion and communication.

Annex 1-bias towards projects abating carbon

A social MACC is derived based on the following formula:

$$(q) \frac{\pounds}{tCO2e} = \frac{NPSV}{tCO2e_{avoided}} * -1.$$

A carbon benefit is calculated as $x(tCO2e_{avoided})$, where x is the value of avoiding 1t of CO2e emissions, > 1 . Therefore, as $tCO2e_{avoided}$ appears in both the numerator and denominator of our equation, but in the case of the numerator it is scaled by $x, > 1$, as $tCO2e_{avoided}$ increases, the numerator will increase by a greater amount than the denominator. As such, there is positive bias towards projects which abate large amounts of carbon in a way that doesn't exist when carbon benefits are omitted (such as in a financial analysis).

9. Dispute Resolution

9.1 To raise a dispute:

- i. the decision giving rise to the dispute must have been communicated under the contract in accordance with clause 13,
- ii. the party who disputes the decision raises its dissatisfaction with the decision within 28 days of the decision being communicated and communicates this dissatisfaction in accordance with clause 13 of the PSC, otherwise the decision is deemed undisputed/ accepted; and
- iii. the issue becomes a formal Dispute and is addressed in accordance with Option W2 of the contract.

9.2 The Dispute is initially raised to the Client's Assurance Representative by the Consultant's Project Manager, or Client's Project Executive, within 28 days of the decision being communicated. The Consultant's Project Manager and Client Project Executive each provide a written submission in support of their case within one week of the Dispute being raised. The Client's Assurance Representative determines the contractual decision on the basis of the written evidence submitted to them, and the terms of the framework and call-off contract and communicates their decision and reasons to both parties in accordance with the call-off contract within two weeks of receipt of the written evidence.

9.3.1 If either party remains dissatisfied with the decision the dispute is escalated to the Client's senior representatives by the Consultant's Framework Manager or the Client's Project Executive within two weeks of the Client Assurance Representative's decision being communicated. The Consultant's Framework Manager and Client's Project Executive provide a written submission in support of their case within one week of the escalation. The Client's senior representatives determines the contractual decision on the basis of the written evidence submitted to them, and the terms of the framework and call-off contract and communicates their decision and reasons to both parties in accordance with the call-off contract within two weeks of receipt of the written evidence.

If either party remains dissatisfied with the decision, the dispute is escalated to the Client's Deputy Director Portfolio Delivery Office, by the Consultant's Programme Director or the Client's Project Executive, within two weeks of the Client senior representatives decision being communicated. The Consultant's Programme Director and the Client's Project Executive provide a written submission in support of their case within one week of the escalation. The Client's Deputy Director Portfolio Delivery Office determines the contractual decision on the basis of the written evidence submitted to them, and the terms of the framework and call-off contract, and communicates their decision and reasons to both parties in accordance with the call-off contract within two weeks of receipt of the written evidence.

9.2.3 If either party remains dissatisfied with the decision the dispute may be referred to adjudication.

9.3 During dispute proceedings all parties have a duty to continue their performance under this contract.

Pricing Schedule

