Framework:	**Collaborative Delivery Framework**
Supplier:	**BAM Nuttall Ltd**
Company Number:	**00305189**
Geographical Area:	**North East**
Contract Name:	**Hull Tidal Surge Barrier Reliability Works**
Project Number:	[redacted]
Contract Type:	**Engineering Construction Contract**
Option:	**Option C**
Contract Number:	
Stage:	**Other**

Revision	Status		Originator		Reviewer		Date
1	Draft		[redacted]				26/09/2023
2	Draft						17/11/2023
3	Final						06/12/2023

Rev 1.9.2a

ENGINEERING AND CONSTRUCTION CONTRACT under the Collaborative Delivery Framework
CONTRACT DATA

Project Name Hull Tidal Surge Barrier Reliability Works

Project Number [redacted]

This contract is made on 01 February 2024
between the *Client* and the *Contractor*

- This contract is made pursuant to the Framework Agreement (the "Agreement") dated 10th day of April 2019 and Framework Agreement Extension dated and signed 1st April 2023 between the *Client* and the *Contractor* in relation to the Collaborative Delivery Framework. The entire agreement and the following Schedules are incorporated into this Contract by reference

- Schedules 1 to 23 inclusive of the Framework schedules are relied upon within this contract.

- The following documents are incorporated into this contract by reference
ENV6005975R Hull Tidal Surge Barrier Reliability Works ESE Scope V1.8

Part One - Data provided by the *Client*

Statements given in all Contracts

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 the secondary Options of the NEC4 Engineering and Construction Contract June 2017.

Main Option: Option C

Option for resolving and avoiding disputes: W2

Secondary Options

X2: Changes in the law

X7: Delay damages

X9: Transfer of rights

X10: Information modelling

X11: Termination by the *Client*

X15: *Contractor's* design

X18 Limitation of Liability

X20: Key Performance Indicators

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

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

Z: *Additional conditions of contract*

The *works* are

Provide early supplier engagement support for the Hull Tidal Surge Barrier Reliability Works.

The *Client* is [redacted]

Address for communications

Environment Agency
8 City Walk

Leeds
LS11 9AT

Address for electronic communications [redacted]

The *Project Manager* is

Address for communications Environment Agency
8 City Walk
Leeds
LS11 9AT

Address for electronic communications [redacted]

The *Supervisor* is

Address for communications

Address for electronic communications

The Scope is in
ENV6005975R Hull Tidal Surge Barrier Reliability Works ESE Scope V1.8

The Site Information is in
ENV6005975C-EA-00-00-RP-HS-K0200_1-Status-Rev-K0200-EA2-LOD2-Pre-Construction Information Pack_v2

The *boundaries of the site* are
ENV6005975C-EA-00-00-RP-HS-K0200_1-Status-Rev-K0200-EA2-LOD2-Pre-Construction Information Pack_v2

The *language of the contract* is English

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

The period for reply is 2 weeks

The following matters will be included in the Early Warning Register

Early warning meetings are to be held at intervals no longer than 2 weeks

2 The *Contractor's* main responsibilities

The *key dates* and *conditions* to be met are

condition to be met	*key date*
'none set'	'none set'
'none set'	'none set'
'none set'	'none set'

The *Contractor* prepares forecasts of the total Defined Cost for the whole of the *works* at intervals no longer than 4 weeks

3 Time

The *starting date* is 01 February 2024

The *access dates* are

part of the Site	date
Hull Tidal Barrier West Car Park & forecourt	01 February 2024
Hull Tidal Barrier	01 February 2024
Hull Tidal Barrier East Car Park	01 February 2024

The *Contractor* submits revised programmes at intervals no longer than 4 weeks

The *Completion Date* for the whole of the *works* is 10 September 2024

The *Client* is willing to take over the *works* before the Completion Date

The period after the Contract Date within which the *Contractor* is to submit a first programme for acceptance is 4 weeks

4 Quality management

The period after the Contract Date within which the *Contractor* is to submit a quality plan is 4 weeks

The period between Completion of the whole of the *works* and the *defects date* is 52 weeks

The *defect correction period* is 2 weeks except that

- The *defect correction period* for An item that affects public safety is 24 Hours
- The *defect correction period* for is

5 Payment

The *currency of the contract* is the £ sterling

The *assessment interval* is Monthly

The *Client* set total of the Prices is [redacted]

The *interest rate* is 2.00% per annum (not less than 2) above the Base rate of the Bank of England

The *Contractor's share percentages* and the *share ranges* are

share range				*Contractor's share percentage*
less than		**80** %		**0** %
from	**80** %	to	**120** %	as set out in Schedule 17
greater than		**120** %		as set out in Schedule 17

6 Compensation events

The place where weather is to be recorded is Hull, East Park

The *weather measurements* to be recorder for each calendar month are

- the cumulative rainfall (mm)
- the number of days with rainfall more than 5mm
- the number of days with minimum air temperature less than 0 degrees Celsius
- the number of days with snow lying at 09:00 hours GMT

and these measurements:

1.
2.
3.
4.

5.

The *weather measurements* are supplied by Met office
The *weather data* are the records of past weather measurement for each calendar month
which were recorded at
and which are available from

Assumed values for the ten year weather return *weather data* for each *weather measurement* for each calendar month are

Jan	Jul
Feb	Aug
Mar	Sep
Apr	Oct
May	Nov
Jun	Dec

These are additional compensation events

1. Carbon Methodology - Adherence to and compliance with the Carbon Methodology dated 08 June 2023
2. The failure of the Hull tidal barrier deployment before the Completion Date which impact activities shown on the Accepted Programme due to
   •maintenance
   •failure or damage.
   The Contractor is expected to seek suitable mitigation measures which are available and appropriate.'
3. 'not used'
4. 'not used'
5. 'not used'

8 Liabilities and insurance

These are additional *Client's* liabilities

1 'not used'

2 'not used'

3 'not used'

The minimum amount of cover for insurance against loss of or damage to property (except the *works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor)* arising from or in connection with the *Contractor* Providing the Works for any one event is [redacted]

The minimum amount of cover for insurance against death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with the contract for any one event is

not less than the amount required by law

The insurance against loss of or damage to the *works,* Plant and Materials is to include cover for Plant and Materials provided by the *Client* for an amount of

Resolving and avoiding disputes

The *tribunal* is litigation in the courts

The *Senior Representatives* of the *Client* are [redacted]

Address for communications
Environment Agency
Harfen House
Welshpool
Shelton
Shrewsbury
SY3 8BB

Address for electronic communications jennie.cooper@environment-agency.gov.uk

Name	[redacted]
Address for communications	Environment Agency Guildbourne House Chatsworth Road Worthing West Sussex BN11 1LD
Address for electronic communications	[redacted]
The *Adjudicator* is	'to be confirmed'
Address for communications	'to be confirmed'
Address for electronic communications	[redacted]
The *Adjudicator nominating body* is	The Institution of Civil Engineers

Z Clauses

Z3 Prevention: No change to prices

Delete first sentence of clause 62.2 and replace with:
"Quotations for compensation events except for the compensation event described in 60.1(19) comprise proposed changes to the Prices and any delay to the Completion Date and Key Dates assessed by the *Contractor*. Quotations for the compensation event described in 60.1(19) comprise any delay to the Completion Date and Key Dates assessed by the *Contracto* r.
Delete 'The' At start of clause 63.1 and replace with:
"For the compensation event described in 60.1(19) the Prices are not changed. For other compensation events the..."

Z 4 The Schedule of Cost Components

The Schedule of Cost Components is as detailed in the Framework Schedule 9.

Z 6 Payment for Work

Delete existing clause 11.2 (31) and replace with:
"11.2 (31) The Price for Work Done to Date is the total Defined Cost which the *Project Manager* forecasts will have been paid by the *Contractor* before the next assessment date plus the Fee. In all instances and circumstances the Price for Work Done to Date shall not exceed the forecast for the same as provided under clause 20.4."

Z7 *Contractor's* share

After cl54.2 and before cl54.3, insert the following additional clause:
54.2A If, prior to Completion of the whole of the works, the Price for Work Done to Date exceeds 111% of the total of the Prices, the amount in excess of 111% of the total of the Prices is retained from the Contractor.

Z10 Payments to subcontractors, sub consultants and

Subcontractors
The *Contractor* will use the NEC4 contract on all subcontracts for works unless another alternative and appropriate form is proposed and agreed in accordance with clause 26.3.
Payment to subcontractors will be 28 days from the assessment date.
If the *Contractor* does not achieve payments within these timescales then the Client reserves the right to delay payments to the Contractor in respect of subcontracted work, services or goods.
Failure to pay subcontractors and suppliers within contracted times scales will also adversely affect the *Contractor's* opportunities to work on framework contracts.

Z16 Disallowed Costs

Add the following bullets to clause 11.2 (26) Disallowed costs
- was incurred due to a breach of safety requirements, or due to additional work to comply with safety requirements.
- was incurred as a result of the client issuing a Yellow or Red Card to prepare a Performance Improvement Plan.
- was incurred as a result of rectifying a non-compliance with the Framework Agreement and/or any call off contracts following an audit.

Z19 Linked contracts

Delays and additional cost on this contract resulting from the *Contractor's* fault or error on a previous contract on this project or programme will be a Disallowable cost under this contract and not be a Compensation event under this contract.

Z21 Requirement for Invoice

Add the following sentence to 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 *Project Manager's* certificate.
Delete existing clause 51.2:
51.2 Each certified payment is made by 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 *Project 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

Z22 Resolving Disputes
Delete W2.1

Z23 Risks and insurance
Replace clause 84.1 with the following
Insurance certificates are to be submitted to the Client on an annual basis.

Z30 Material Price Volatility
The *Client* recognises the ongoing pricing uncertainty in relation to materials for the period from 1 July 2021 to 30 June 2023 the *Client* will mitigate this additional cost through this clause. Payment is made per assessment based upon a general average material proportion within assessments, calculated at 40%.

Z30.1 Defined terms

a) The Latest Index (L) is the latest index as issued by the *Client*. The L, which is at the discretion of the *Client*, is based upon the issued consumer price index ((CPI) based upon the 12-month rate) before the date of assessment of an amount due.
b) The Price Volatility Provision (PVP) at each date of assessment of an amount due is the total of the Material Factor as defined below multiplied by L for the index linked to it.
c) Material Factor (MF) 40% is used, based on a general average material proportion across our programme. The volatility provision is only associated with material element. No volatility provision is applicable to any other component of costs.

Z30.2 Price Volatility Provision

Through a Compensation Event the *Client* shall pay the PVP. PVP is calculated as:
Assessment x MF x L = PVP

If an index is changed after it has been used in calculating a PVP, the calculation is not changed and remains based upon the rate issued by the *Client*. The PVP calculated at the last assessment before 30 June 2023 is used for calculating the price increase after that date.

Z30.3 Price Increase

Each time the amount due is assessed, an amount for price increase is added to the total of the Prices which is the change in the Price for Work Done to Date for the materials component only (and the corresponding proportion) since the last assessment of the amount due multiplied PVP for the date of the current assessment.

Z30.4 Compensation Events

The *Contractor* shall submit a compensation event for the PVP on a monthly basis (where applicable) capturing Defined Cost only for the PWDD increase in month. Forecasted costs should only be considered for the June 2023 period compensation event.

Assessment Date	Defined Cost?	Forecasted Cost?
31 July 2021	In period costs only	No
31 August 2021	In period costs only	No
30 September 2021	In period costs only	No
31 October 2021	In period costs only	No
30 November 2021	In period costs only	No
31 December 2021	In period costs only	No
31 January 2022	In period costs only	No
28 February 2022	In period costs only	No
31 March 2022	In period costs only	No
30 April 2022	In period costs only	No
31 May 2022	In period costs only	No
30 June 2022	In period costs only	No
31 July 2022	In period costs only	No
31 August 2022	In period costs only	No
30 September 2022	In period costs only	No
31 October 2022	In period costs only	No
30 November 2022	In period costs only	No
31 December 2022	In period costs only	No
31 January 2023	In period costs only	No
28 February 2023	In period costs only	No
31 March 2023	In period costs only	No
30 April 2023	In period costs only	No
31 May 2023	In period costs only	No
30 June 2023	In period costs only	Forecasted costs for remainder of contract

The Defined Cost for compensation events is assessed using
- the Defined Cost at *base date* levels for amounts calculated from rates stated in the Contract Data for People and Equipment and
- the Defined Cost current at the date the compensation event was notified, adjusted to the *base date* by 1+PVP for the last assessment of the amount due before that date, for other amounts.

Z31 ECC – Price Adjustment for Inflation
The *Client* recognises the ongoing pricing uncertainty with regards to inflation. The *Client* will mitigate this uncertainty through this clause.

Z31.1 Defined terms:

a) The index is Office for National Statistics (ONS) CPI (UK, 2015=100).
b) The Base Date Index (B) is the latest available index published by ONS prior to the Contract Date.
c) The Latest Index (L) is the latest available index published by ONS before the date of assessment of an amount due.
d) The Price Adjustment Factor (PAF) at each date of assessment of an amount due is 0.9((L-B)/B).

Z31.2 Application rules.

The provisions of this clause [Z31] shall apply provided that:

a) The Price for Work Done to Date is less than or equal to the total of the Prices
and
b) Inflation remains positive i.e. L is greater than B.

Z31.3 Price Adjustment Factor.

If an index is changed after it has been used in calculating a PAF, the calculation is not changed. The PAF calculated at the last assessment date before the Completion Date for the whole of the *works* is used for calculating an amount for price adjustment after that date.

Z31.4 Price adjustment Options A and B.
NOT USED

Z31.5 Price adjustment Options C and D.

Each time the amount due is assessed, an amount for price adjustment is added to the total of the Prices which is the change in the Price for Work Done to Date since the last assessment of the amount due multiplied by (PAF/(1+PAF)).

Z31.6 Compensation events.
NOT USED

Z111 ECC - Fee adjustment for non compliance with Scope

Delete existing 11.2 (10) and replace with the following clause

The Fee is the amount calculated by applying the *fee percentage* to the Defined Cost excluding the cost of Sub-contractors that have not complied with procurement by best value processes as defined in the Scope. 80% of the *fee percentage* is applied to the amount of the Defined Cost for Sub-contractors that have not complied with procurement by best value processes as defined in the Scope.

Z120 ECC – Carbon reduction

Ref. (Clause No.)	Clause words
11.2 Definitions	Add as Clause 11.2(36) (36) The Performance Table states the targets the *Contractor* is to achieve in Providing the Works and sets out the adjustment to payment if a measured performance is higher, the same or lower than its target. The Performance Table is the *performance table* unless later changed in accordance with the contract.
15.1 Early Warnings	In Clause 15.1 add as a new bullet between the second and third bullet: "• result in a target in the Performance Table not being met,"
Performance Measurements	
57	Add as Clause 57:
57.1	'From the *starting date* until the Completion Date, the *Contractor* reports to the *Project Manager* its performance against the targets in the Performance Table. Reports are provided at the intervals stated in the Performance Table.
57.2	If the *Contractor's* performance against a target in the Performance Table is not achieving or is forecast not to achieve the performance target stated, it submits to the *Project Manager* for acceptance its proposals for improving performance. A reason for not accepting the proposals is that they will not provide the improvement in performance needed to achieve the target in the Performance Table.
57.3	At the dates stated in the Performance Table, • if the relevant performance does not meet the target stated in the Performance Table, the *Contractor* pays the amount stated in the Performance Table, • if the relevant performance exceeds or meets the target stated in the Performance Table, the *Contractor* is paid the amount stated in the Performance Table.
57.4	Information in the Performance Table is not Scope.
X18	X18.5 add as a new bullet after the fourth bullet: • low performance damages if the Performance Table applies

The *performance table* is ECC-carbon-performance-table.xlsx

the Performance Table for this contract type [form, Partner, Stage] as set out in the Carbon Methodology dated 08 June 2023

Secondary Options

OPTION X2: Changes in the law

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

OPTION X7: Delay damages

X7 only

Delay damages for Completion of the whole of the *works* are [redacted] per day

OPTION X10: Information modelling

The period after the Contract Date within which the *Contractor* is to submit a first Information Execution Plan for acceptance is 2 weeks

The minimum amount of insurance cover for claims made against the *Contractor* arising out of its failure to use skill and care normally used by professional providing information similar to the Project Information is, in respect of each claim [redacted]

The period following Completion of the whole of the *works* or earlier termination for which the *Contractor* maintains insurance for claims made against it arising out of its failure to use the skill and care is

6 years

OPTION X15: The *Contractor's* design

The *period for retention* following Completion of the whole of the *works* or earlier termination is 6 years

The minimum amount of insurance cover for claims made against the *Contractor* arising out of its failure to use skill and care normally used by professionals designing works similar to the *works* is, in respect of each claim [redacted]

The period following Completion of the whole of the *works* or earlier termination for which the *Contractor* maintains insurance for claims made against it arising out of its failure to use the skill and care is

6 years

OPTION X18: Limitation of liability

The *Contractor's* liability to the *Client* for indirect or consequential loss is limited to [redacted]

For any one event, the *Contractor's* liability to the *Client* for loss or damage to the *Client's* property is limited to

[redacted]

The *Contractor's* liability for Defects due to its design which are not listed on the Defects Certificate is limited to [redacted]

The *Contractor's* total liability to the *Client* for all matters arising under or in connection with the contract, other than excluded matters, is limited to

[redacted]

The *end of liability date is* 6 years after the Completion of the whole of the *works*

OPTION X20: Key Performance Indicators (not used with Option X12)

The *incentive schedule* for Key Performance Indicators is in Schedule 17.

A report of performance against each Key Performance Indicator is provided at intervals of 3 months.

Y(UK2): The Housing Grants, Construction and Regeneration Act 1996

The period for payment is	14 days	after the date on which payment becomes due	

Y(UK3): The Contracts (Rights of Third Parties Act) 1999

term	*beneficiary*
Any	none

Part Two - Data provided by the *Contractor*

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

1 General

The *Contractor* is

Name

Address for communications

[redacted]

Address for electronic communications

[redacted]

The *fee percentage* is

Option C

[redacted]

The *working areas* are

The Site, the Contractors premises, the Consultatnt premises, the Subcontractors premises, the Clients premises and / or the residence of any of the Contractors, Consultants or Subcontractors staff either temporarily or permanently used in connection with this Contract.

The *key persons* are

Name (1)
Job
Responsibilities
Qualifications
Experience

The *key persons* are

Name (2)
Job
Responsibilities
Qualifications
Experience

The *key persons* are

Name (3)
Job
Responsibilities
Qualifications
Experience

[redacted]

The *key persons* are

Name (4)
Job
Responsibilities
Qualifications
Experience

The following matters will be included in the Early Warning Register

2 The Contractor's main responsibilities

The Scope provided by the *Contractor* for its design is in

3 Time

The programme identified in the Contract Data is

5 Payment

The *activity schedule* is

Resolving and avoiding disputes

The *Senior Representatives* of the *Contractor* are

[redacted]

X10: Information Modelling

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

Contract Execution

Client **execution**

Signed Underhand by [**PRINT NAME**] for and on behalf of the Environment Agency

[redacted]

[redacted] Date [redacted] Role

Contractor **execution**

Signed Underhand by [**PRINT NAME**] for and on behalf of BAM Nuttall Ltd

[redacted]

ECC Scope Template - Early Supplier Engagement (ESE)

NEC4 engineering and construction contract (ECC) 27/10/23

Project name	Hull Tidal Surge Barrier Reliability Works
Project SOP reference	ENV6005975R
Contract reference	[redacted]
Date	10/01/2024
Version number	1.8
Author	[redacted]

Revision history

Revision date	Summary of changes	Version number
13/6/23	First issue	1.3
20/7/23	Updated to include ESE and remove surveys	1.4
7/9/23	Scope sections completed	1.5
21/9/23	Scope reviewed & tweaked by Oliver Wilson (Previous PE)	1.6
20/11/23	Scope tweaked based on review by Connor Penman (Commercial Services Support)	1.7
10/01/24	Scope tweaked based on review by BAM and Connor Penman (Commercial Services Support)	1.8

Documents included in Scope by reference.

This Scope should be read in conjunction with the documents detailed in the table below current at the Contract Date.

In the event of conflict, this Scope shall prevail.

The service is to be compliant with the following: DOCUMENT	Document Title	Version No	Issue date
LIT 13258	Minimum Technical Requirements – Standard	V12	December 2021
LIT 65150	Minimum Technical Requirements – Environment and Sustainability	V2	March 2023
LIT 17641	BIM Protocol Exchange Information Requirements	V3	December 2022
LIT 16559	SHEW CoP	V5	January 2023
LIT 12507	(SHE) handbook for managing capital projects	V7	29/03/2023
	Project Information Delivery Plan	Appendix 1	This document
LIT 14284	Carbon Operating Instruction	V6	[15/08/2023]

Contents

CONTENTS 2

S 100 Description of the *works*

The *Contractor* shall provide Early Supplier Engagement constructability and supply chain advice as necessary for the Hull Tidal Surge Barrier (HTSB) Reliability Works Project up to Outline Business Case stage (OBC). It is envisaged that compensation events may be instructed to the contract for survey works for topography, concrete/structural investigation, steelwork surveys and the *Contractor* shall provide safe access for these surveys.

S 101 General Description of the *works*

The *Contractor* shall provide Early Supplier Engagement constructability and supply chain advice as necessary for the Hull Tidal Surge Barrier (HTSB) Reliability Works Project up to Outline Business Case stage (OBC). It is envisaged that compensation events may be instructed to the contract for survey works for topography, concrete/structural investigation, steelwork surveys and the *Contractor* shall provide safe access for these surveys.

S 102 Purpose of the works / Outcome required

The *works* are required as part of the Hull Tidal Surge Barrier resilience study and are integral to ensuring the long-term reliability of the facility.

The following ESE activities shall be covered under this Scope:

1. Agree Scope following award – levels of input are proportionate to the scheme size, its risks and complexity. The focus should be on buildability and supply chain engagement in assisting to establish a preferred solution for OBC.

2. Attendance at a site visit to identify access requirements, physical constraints, required working areas, compound areas, etc

S 200 General constraints on how the *Contractor* provides the *works*

S 201 General Constraints

The only foreseeable site constraint during the civil/structural surveys is the possibility that the barrier needs to be deployed to protect the city of Hull from a tidal surge. To minimise this as far as practicable, the timing of the works shall take account of tide level predictions; choosing a time that coincides with a period of low tides. The Environment Agency has access to this data and regularly maintains the barrier to coincide with these times.

S 202 Confidentiality

The *Contractor* does not disclose information in connection with the *works* except when necessary to carry out their duties under the contract or their obligations under the contract.

The *Contractor* may publicise the services only with the *Client*'s written permission.

S 203 Security and identification of people

The HTSB has a compound fence that is 2.4 metres high that encloses the West Tower and Generator House, with secure gates to the lower car park and the upper car park. The same style of fence also surrounds the East tower and East stores and switch room, again with secure gates to the car park area. To complement this, there are CCTV cameras that cover both compounds and internally to the Generator House.

The HTSB duty officers are all key holders for the site; the *Client* will ensure that the site is manned daily by a key holder during the works.

S 204 Protection of existing structures and services

The HTSB duty officers are all key holders for the site; the *Client* will ensure that the site is manned daily by a key holder during any works. No requirement for a permanent Contractor presence at this stage. As and when the Contractor needs to attend site, coordination would be required with HTSB duty officer.

S 205 Protection of the *works*

Not required at this stage

S 206 Carbon

S 207 (1) Carbon terminology

Carbon Terminology. For clarity the below terms are definitions for required deliverables and related data and should be used in communications about carbon.

Carbon Assessment

Carbon assessments are a deliverable of the service and defined in LIT14284 and comprise:

a) Carbon calculations set out in either a ERIC Carbon Modelling Tool (CMT) or Carbon Calculator (CC) file versions. ERIC CMT/CC versions for business case project stages result in overall emission figures for the project including a whole-life carbon forecast, a capital carbon forecast and a capital carbon budget. ERIC CC versions for construction result in overall figures for the project including capital carbon actuals (for construction outturn or to date) for comparison with the forecast and budget figures of earlier versions.
b) Carbon calculations set out in a Carbon Impact Tool (defined in the FCRM Appraisal Guidance) for the appraisal of business case options. The Carbon Impact Tool will provide carbon benefit figures in tCO2e and monetised Net Present Value that are required in the Business Case carbon tables and in the Partnership Funding Calculator (Economic Summary OM1a)
c) Carbon Appendix that captures the results of calculations from ERIC and the Carbon Impact Tool and provides a summary of progress made in maximising carbon reduction opportunities on the project to date as well as confidence levels for further reductions by project completion.
d) A verification process of the carbon assessment carried out by an EA appointed Carbon Specialist and requiring updates to the carbon calculations and Carbon Appendix as required. Verified versions of carbon assessment deliverables and their results are required to support carbon tables in the business case.

Terminology for carbon assessments:

ERIC	is a PAS 2080 Compliant assessment tool that the *Client* requires Contractors to use
Carbon Calculator	part of ERIC application seen abbreviated to CC
Carbon Modelling tool	part of ERIC application seen abbreviated to CMT
EA carbon specialist	the specialist employed by EA to verify carbon assessments

1. Verified An output of the verification process of a carbon assessment supporting either a business case or construction completion that has been conducted by an EA carbon specialist.
2. Business Case Carbon Appendix Spreadsheet to capture information required by EA for carbon assessments. This document should be updated and verified to support business cases. It should be updated and verified at the end of construction and for agreed changes during construction.

Whole-life Carbon	GHG (greenhouse gas) emissions and removals calculated for a carbon assessment associated with the creation and end-of-life treatment of an asset, network or system, and including with its maintenance and refurbishment
Capital Carbon	GHG (greenhouse gas) emissions calculated for a carbon assessment associated with the construction or refurbishment of an asset, network or system.
Capital Carbon Actuals	capital carbon emitted during construction activities - for a defined period of time eg) capital carbon actuals to date eg) capital carbon actuals at contact completion eg) capital carbon actuals at project completion or eg) capital carbon actuals April 2022 to March 2023 At construction completion, an 'as built' version of ERIC calculations will capture outturn actuals against an asset breakdown and provide a total to compare with previous ERIC version 'forecasts'.
Capital Carbon Budget	a decarbonisation benchmark of capital carbon emissions for a project based on the current project scope and based on expected levels of decarbonisation of the asset types set out in a carbon assessment. It is calculated in every version of an ERIC (CC and CMT) calculation and is based on generic asset types and associated rates of decarbonisation over future years.
Capital Carbon Forecast	an estimate of capital carbon emissions from a project based on the current project scope calculated using a PAS 2080 compliant carbon assessment tool. It is calculated in every version of an ERIC (CC and CMT) calculation and used to optimise for lowest carbon through the use of emission rates provided by the EA or provided by manufacturers of products (e.g. low carbon) that are outside of the EA rates (manufacturer rates will be verified by the EA).

Carbon Reporting

a) Reporting on capital carbon forecasts and budgets via FastDraft is a monthly requirement of a service for business case project stages. The reported data will be project carbon figures from the latest ERIC calculations that consultants maintain as 'work in progress' versions to support their appraisal and design deliverables.

b) Reporting on capital carbon actuals to date and a latest capital carbon forecast for construction completion via FastDraft is a monthly requirement of a service for construction stage. The reported data will be based on evidence of embodied carbon in products supplied and construction services carried out up to the reported date and aligned to reported expenditure at the same time. See ref S216

Additional terminology for carbon reporting:

Consultant Carbon Forecast Form	Carbon forecast form in FastDraft to be completed monthly as per contract Scope requirement - reporting is for Project (not contract).
FastDraft Carbon Forecast	menu option in FastDraft can't be changed but add FastDraft to name in communications to distinguish from capital carbon forecast

Draft	Denotes any FastDraft reported data from carbon assessments that are 'work in progress' versions maintained by the contractor and will not therefore be required to be verified by the EA.
Back Up Sheet	This is the colloquial name given to a "worksheet of actual carbon and cost data" as more detailed evidence of emissions and expenditure in a reporting period. Use LIT 61271 (Lot 1 PSC) or worksheet name in Scope and Communications

Carbon Performance Measure for contracts

The capital carbon performance measure for contracts is based on the verified results of a carbon assessment related to either business case submissions for PSC contracts or completion of construction for ECC contracts. The measure sets a performance target and bands above/below this target for rates of pay out or pay back in relation to the capital carbon forecast and budget for PSC contracts and for the capital carbon actuals and capital carbon forecast for ECC contracts.

Additional terminology for carbon performance measure:

Carbon Performance	is measured at completion of the contract from the results of the carbon assessment that has been produced as a deliverable of the contracted service and been verified and approved by the EA
Carbon Performance Tables	where carbon performance is related to the incentivisation payout / payback bands and contract type. Applied at the time the contract signed.
ECC Carbon Target	is set at a fixed % above the Capital Carbon Forecast (tCO2e) that has been verified either at GW3, or subsequently through an approved change control. It is a fixed number not a range.
Project Carbon Payback Threshold	This is the threshold at which payback to *Client* is paid as stated in the contract Carbon Performance tables.

1. The *Contractor* must aim as a strategic objective to minimise carbon.
2. The *Client* carbon assessment tools for calculating Capital Carbon Forecasts is ERIC Carbon Modelling Tool (CMT) or ERIC Carbon Calculator (CC).
3. The *Client* carbon assessment tool for calculating Capital Carbon Budget is ERIC CBUD sheet.
4. set out opportunities for further reductions in carbon before the Project completion.
10. The Verified Capital Carbon Budget and Capital Carbon will be required in the gateway (SOC/OBC/FBC) Business Case Carbon Appendix and are required for the Carbon Performance Table and measures set out in this contract.

S 207 (2) Carbon responsibilities of all Parties

1. Aim to minimise carbon emissions by:

(1) State minimised carbon as one of the strategic objectives of the contract under S 101

(2) Looking at how to reduce Capital Carbon Actuals (compared to the Capital Carbon Forecast) and how to reduce Whole Life Carbon of the asset

(3) Work collaboratively, including with sub contractors, on lower carbon products and services that meet the project scope and deliverables

(4) Exploit opportunities for further reductions Carbon during construction.

(5) The ECC Carbon Target, the metric against which decarbonisation is measured and assessed against Playout / Payback bands set out in the ECC Carbon Performance Table, must be Verified before any progression from ESE into Construction occurs.

S 207 (3) Carbon Responsibilities of the *Client*

1. Will Establish the ECC Carbon Target with the ***Contractor*** **and Lot 1 delivery partner (Arup)** as an outcome of this ESE contract before construction begins.
2. It is at the *Client'* discretion to decide if Scope change is significant and merits a re-assessment of the ECC Carbon Target.
3. Change in this Scope from ESE to Construction work as part of a planned procurement strategy is considered by the *Client* to be significant change which would merit re-assessment of the ECC carbon target.

S 207 (4) Carbon responsibilities of the ECC PM / Contract manager

1. Will add carbon requirements set out in LIT 13260 to this Scope if any change to Scope occurs which changes the nature of work under this Contract from ESE to Construction as planned in procurement strategy.
2. will work with EA Carbon Specialist to ensure Business Case Carbon Appendix Verification occurs at the appropriate times.

S 207 (5) Carbon responsibilities of the *Contractor*

1. the Contractor should ensure they are aware of current Capital Carbon Forecast made by the Lot 1 *Consultants*
2. Cooperate in updating the Business Case Carbon Appendix and capital Carbon Forecast when requested to by the *Client* or ECC PM for
   - **(1)** calculation of ECC Carbon Target
   - **(2)** if additional information is needed during the Verification process
   - **(3)** at project Gateways
   - **(4)** and Contract Completion.
3. Save Business Case Carbon Appendix and Capital Carbon Forecasts in ASite
5. Submit monthly the FastDraft Carbon Forecast (*Contractor* Carbon Forecast Form). Reporting
   - **(1)** ~~ECC Carbon Target~~ (not known at this stage)
   - **(2)** Capital Carbon Forecast (~~should be reported~~ not known at this stage)
   - **(3)** Capital Carbon Actuals to date (anticipated to be close to zero as no main construction at this stage)

S 300 Contractor's design

Not used

S 400 Completion

S 401 Completion definition

The following are absolute requirement for Completion to be certified, without these items the *Client* is unable to use the *works*:

- Transfer to the *Client* of BIM data.

Clause 11.2(2) Work to be done by the Completion Date.

S 402 Correcting Defects

Not required at this stage

S 403 Pre-Completion arrangements

Not required at this stage

S 404 Take Over

Not required at this stage

S 500 Programme

S 501 Programme requirements

The programme complies with the requirements of Clause 31.2 and also includes alignment and submission of the BEP and Master Information Delivery Plan (MIDP).

The *Contractor* shall provide a detailed programme in Microsoft Project format version 2016 meeting all requirements of clause 31 of the *conditions of contract*.

The *Contractor* shall provide a baseline programme for the project start up meeting and shall update the programme monthly for progress meetings with actual and forecast progress against the baseline. The programme shall also include alignment and submission of the BIM Execution Plan (BEP) and Master Information Delivery Plan (MIDP).

The programme shall cover all the activities and deliverables in the project from the *Contractor* and Others and include all major project milestones from commencement to the end of the *works*.

The *Contractor* shall identify key programme constraints that could prevent a scheme from starting or completing as planned.

S 502 Programme arrangement

The programme shall be in pdf as well as in electronic copy in its native format. A clear critical path shall be shown. Activities to be undertaken by the Client shall be clearly identified on the programme. The programme is to be submitted to Fastdraft.

S 503 Methodology statement

Not required at this stage

S 504 Work of the *Client* and Others

Not required at this stage

S 505 Information required

Arup's programme to be made available to *Contractor*

S 506 Revised programme

In addition to the requirements of the conditions of contract, the *Contractor* shall provide a brief explanation of changes to each programme activity, sufficient to enable the *Project Manager* and *Client* to understand the cause and impact of the change.

S 600 Quality assurance

S 601 Samples

Not required.

S 602 Quality statement

Not required.

S 601 Quality management system

Not required.

S 601 BIM requirements

The BIM Information Manager is the *Client* Project Manager. The *Contractor* shall comply with the *Client's* BIM requirements. (Appendix 1).

S 700 Test and inspections

Not required.

S 800 Management of the *works*

S 801 Project Teams – others

The Contract Data identifies the *Client, Project Manager, Supervisor* and *Contractor* and states what each is required to do.

Client – Environment Agency.
Project Manager – Anupriya Prabhuswamy
Supervisor – Not required at this stage.
Contractor – BAM, Peter Wilcox.

S 802 Communications

The *Contractor* shall attend monthly progress meetings.

Contribute to the ongoing maintenance of the *Client* managed Project risk register monthly or more often as required.

The *Contractor* shall allow for attendance of key personnel from the *Contractor's* staff and key Subontractor's and supplier's staff at meetings and workshops which shall include the following:

- Project Board Meetings
- Risk workshops
- Commercial meetings
- Planning and programming workshops
- Optioneering workshops

The *Client's* organisation has a regulatory function. Communications from the Environment Agency in its capacity as a regulator are not to be confused with communications as the *Client* or the *Project Manager.*

S 803 Monthly Reporting

1. For the duration of the contract progress is to be reported monthly via

(1) LIT 13283 - Monthly work progress summary - construction stage.docx

(2) LIT 12295 – Monthly highlight report

2. Contribute monthly updates to the project risk register.

3. Provide input to project efficiency CERT Form.

4. Attend project board meetings as required.

5. Ensure quarterly input into framework performance assessment / environmental Performance Measures.

6. Maintain and show how accurate and up to date information on the whole-life cost and carbon of options is driving optimum solutions at all stages of design development.

7. Capture lessons learnt relevant to scheme delivery for the *Client*.

S 804 Monthly Forecast Reporting

1. For the duration of the contract FastDraft Carbon Forecast (*Contractor* Carbon Forecast Form) is to be submitted monthly. Reporting is at a Contract level on

~~**(1)** ECC Carbon Target (not known at ESE stage)~~

(2) Capital Carbon Forecast

(3) Capital Carbon Actuals to date

The Consultant/Contractor is required to provide FastDraft Carbon Forecast for both carbon and cost on the 10th day of each month (or other date agreed at the project start up meeting) in accordance with FHU

Framework Heads Up 244 Commercial Clarification 54

Framework Heads Up 256 Commercial Clarification 57

S 805 Application for Payment / Invoice

.1 The *Contractor* is required to provide evidence of costs in the following format:
LIT 61272 Worksheet Actual Carbon and Cost data CDF Lot 2

.2 Submission of an application for payment without an appropriately completed LIT 61272 not be recognised or treated as a compliant submission.

S 806 Aligned Cost and Carbon Data Pilot Reporting

1. Where the Contract is:
   a. included in the Pilot the *Contractor* needs to complete the required sheets of the version being used at that time up to April 2024.
   b. ALL contracts the *Contractor* needs to complete the required sheets of the version being used at that time from April 2024.

S 900 Working with the *Client* and Others

S 901 Sharing the working areas with the *Client* and Others

Arup will be providing consultancy services.

Maintenance activities may be taking place at the Hull Tidal Surge Barrier but the *Contractor* will be informed of any relevant to this contract.

S 902 Co-Operation

The *Contractor* shall provide technical support to the *Client* and the *Project Manager* and contribute to a project Lessons Learnt Log.

S 903 Co-Ordination

The *Contractor* is required to co-operate with Others in obtaining and providing information which they need in connection with the works.

S 904 Authorities and utility providers

There are no known works to be carried out by the authorities and utilities providers. This does not relieve the *Contractor* of the responsibility for liaising with the authorities as described in the Scope and Pre-construction information.

S 905 Diversity and working with the *Client*, Others and the public

No envisaged public engagement at this stage

S 1000 Services and other things to be provided

S 1001 Ground Investigation

.1 The *Contractor* is required to review findings from previous studies and appraisal to identify any gaps in existing data.

.2 The *Contractor* is required to use gaps identified above to inform scope of supplementary investigations needed to allow proper progression of appraisal, design and construction methodology (as relevant to the Scope) and reduce risk of unforeseen ground conditions during construction.

.3 The *Contractor* is required to communicate with the Consultant and undertake further ground investigations as specified by the Consultant to allow proper progression of appraisal and design.

.4 The *Contractor* is required to clearly communicate the specifications for ground investigations as identified above to the site investigation sub-contractor (if they are not undertaking these investigations themselves).

.5 The *Contractor* is required to clearly communicate the relevant results of ground investigations back to the Consultant.

S 1002 Carbon minimisation

Early supplier engagement will contribute and agree to how to minimise carbon throughout the construction stage working with their suppliers on lower carbon products and services that meet the project scope and deliverables. Early supplier engagement will contribute and agree to monthly reporting of emission actuals against forecast (see application for payment section).

Early supplier engagement will contribute and agree to delivery of outturn actual emissions that meet the verified forecast for emissions at project completion and provide the evidence for this set out in the 'as built' carbon appendix and supporting carbon assessment and carbon budget (i.e. ERIC) for verification by an EA appointed Carbon Specialist via Asite. The verification process requires project team engagement with the verifier and may result in actions to:

1. update the carbon appendix and supporting carbon assessment and budget (i.e. ERIC).
2. set out the reasons for outturn actuals emissions being above/below the verified forecast

The verified outturn actuals and forecast from this process will be required for the performance measure set out in this contract as well as for an EA process of carbon budget authorisation managed by EA Project Sponsor.

S 1100 Health and safety

Health, Safety and Wellbeing (HSW) is the number one priority of the *Client*. The *Contractor* shall promote and adopt safe working methods and shall strive to deliver solutions that provide optimum HSW to all.

- The *Contractor* shall follow and comply with the requirements outlined in the Safety, Health Environment and Wellbeing (SHEW) Code of Practice (LIT 16559).
- The *Contractor* shall cooperate with the Principal Designer and all other CDM duty holders on the project.
- The *Contractor* shall fulfil the Principal Contractor (PC) role and discharge the duties in accordance with the requirements of the Construction (Design and Management) Regulations 2015 and in particular regulations 12, 13, 14, 15 and part 4,
- The *Contractor* shall be expected to undertake the role of Principal Contractor for the duration of the project.

The health and safety principles for this project will be:

- To meet all statutory requirements.
- To have zero accidents on site during the construction period.
- To have no case of occupational ill health arising from working on the project.
- Use the general principles of prevention in identifying and implementing precautions which are necessary to control risks associated with the project, as required under the Construction (Design and Management) Regulations 2015.
- To ensure any residual risks are minimised and highlighted where appropriate.
- To ensure that no environmental damage occurs.
- To follow guidance for work involving hazardous materials.
- Where practicable, to follow and comply with EA guidelines regarding 'NetZero'

S 1200 Subcontracting

S 1201 Procurement of subcontractors

.1 Subcontractors need to be selected using best value processes.

.2 This requires the *Contractor* to demonstrate that they have made reasonable attempts to obtain three competitive tenders for all work in excess of £25,000.

.3 The only exception to this is work which has been accepted (in writing) by the hub Commercial Services Manager for strategic suppliers or for emergency work.

S 1300 Title

The *Contractor* holds no title to any work delivered.

S 1400 Accounts and records (Options C and E)

S 1401 Additional Records

Clause 52.2 (Options C and E) List the additional records to be kept by the *Contractor*. This may include but not be limited the following:

Timesheets and site allocation sheets,
Equipment records,
Forecasts of the total Defined Cost, (Forecasts are to include, but not be limited to costs to date, costs to completion including detailed breakdown of staff, sub-contract and major material items)
Specific procurement and cost reports

The format and presentation of records to be kept are to be accepted by the *Client*.

S 2000 *Client's* work specifications and drawings

S 2001 *Client's* work specification

The works are to be delivered in accordance with the Client's current minimum technical requirements and appraisal guidance for the delivery of an OBC.

S 2001 Drawings

Not required.

S 2002 Standards the *Contractor* will comply with

The *Contractor* should carry out their work using the following guidance.

Ref	Report Name	Where used
LIT 14284	ERIC	Costs LIT 14284 - Whole Life (Construction) Carbon Planning Tool.docx (sharepoint.com) V6 (15/08/2023)
LIT 65150	Sustainability Measures Form	Minimum Technical Requirements – Environment and Sustainability LIT 65150 - Minimum Technical Requirements - Environment and Sustainability.docx (sharepoint.com)
LIT 11052	Timber Policy Documents	

		Procurement/Purchasing of Timber
LIT 16559	300_10_SD27 SHE Code of Practice	Health and Safety
LIT 14605 LIT 14604	Carbon Tools for budget calculation and reporting	[add] Carbon Carbon Modelling Tool (LIT 14605) - LIT 14605 - Carbon modelling tool.xlsm (sharepoint.com) Carbon Calculator Tool (LIT 14604) - LIT 14604 - Internal Carbon Calculator.xlsm (sharepoint.com) Carbon Appendix - Carbon Appendix.xlsm (sharepoint.com) Carbon Impacts Tool - FCERM carbon impacts tool - GOV.UK (www.gov.uk)

Appendix 1 Information Delivery Plan (IDP)

The *Consultant* shall adhere to the Environment Agency's Exchange Information Requirements (EIR) framework level minimum technical requirements.

All *Client* issued information referenced within the Information Delivery Plan (IDP) requires verifying by the *Consultant* unless it is referenced elsewhere within the Scope.

The *Consultant* shall register for an ASite Account and request access to the project workspace to view the IDP and update to create the MIDP.

Guidance on the IDP can be found here

Create the IDP on ASite and embed a PDF version as Appendix 1.

https://www.asite.com/login-home