



Framework: Collaborative Delivery Framework
Supplier: BAM Nuttall Ltd
Company Number: 00305189

Geographical Area:
Contract Name: National DTA Programme BAM PSC
Project Number: ENVFCPNZ00228B00R

Contract Type: Professional Service Contract
Option: Option E

Contract Number: TBC

Stage: Other

Revision	Status		Originator		Reviewer		Date

PROFESSIONAL SERVICE CONTRACT under the Collaborative Delivery Framework
CONTRACT DATA

Project Name National DTA Programme BAM PSC

Project Number ENVFCPNZ00228B00R

This contract is made on 17 June 2024
between the *Client* and the *Consultant*

- This contract is made pursuant to the Framework Agreement (the "Agreement") dated 10th day of April 2019 and Framework Agreement Extension dated 1st April 2023 between the *Client* and the *Consultant* 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
LIT 13259 - TTLs PSC Scope V4 060624 BAM.docx

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 secondary Options of the NEC4 Professional Service Contract June 2017.

Main Option	Option E	Option for resolving and avoiding disputes	W2
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Secondary Options

- X2: Changes in the law
- X9: Transfer of rights
- X10: Information modelling
- X11: Termination by the *Client*
- X18: Limitation of liability
- X20: Key Performance Indicators
- Y(UK)3: The Contracts (Rights of Third Parties) Act 1999
- Z: *Additional conditions of contract*

The *service* is National support for the Decarbonisation technology accelerator programme

The *Client* is Environment Agency

Address for communications Horizon House
Deanery Road
Bristol
BS1 5AH

Address for electronic communications [\[REDACTED\]@environment-agency.gov.uk](mailto: [REDACTED]@environment-agency.gov.uk)

The *Service Manager* is
Address for communications [\[REDACTED\]](mailto: [REDACTED]@environment-agency.gov.uk)
Environment Agency
Aqua House
20 Lionel Street
Birmingham
B3 1AQ

Address for electronic communications [\[REDACTED\]@environment-agency.gov.uk](mailto: [REDACTED]@environment-agency.gov.uk)

The Scope is in
LIT 13259 - TTLs PSC Scope V4 060624 BAM.docx

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 *period for retention* is 6 years following Completion or earlier termination

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 Consultant's main responsibilities

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

'none set' 'none set'

'none set' 'none set'

'none set' 'none set'

The *Consultant* prepares forecasts of the total Defined Cost plus Fee and *expenses* at intervals no longer than 4 weeks

3 Time

The *starting date* is 17 June 2024

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

access to people, places, documents etc 17 June 2024

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

The *completion date* for the whole of the *service* is 27 March 2027

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

4 Quality management

The period after the Contract Date within which the *Consultant* is to submit a quality policy statement and quality plan is 4 weeks

The period between Completion of the whole of the *service* and the *defects date* is 26 weeks

5 Payment

The *currency of the contract* is the £ sterling

The *assessment interval* is Monthly

The forecast of the Prices is £539,075.00

The *expenses* stated by the *Client* are as stated in Schedule 9

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

The locations for which the *Consultant* provides a charge
for the cost of support people and office overhead are All UK Offices

6 Compensation events

These are additional compensation events

1. 'not used'
2. 'not used'
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 and the periods for which the *Consultant* maintains insurance are

EVENT	MINIMUM AMOUNT OF COVER	PERIOD FOLLOWING COMPLETION OF THE WHOLE OF THE <i>SERVICE</i> 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>	£1,000,000 in respect of each claim, without limit to the number of claims	12 years after Completion
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	£15,000,000 in respect of each claim, without limit to the number of claims	12 months after Completion
Death of or bodily injury to the employees of the <i>Consultant</i> arising out of and in the course of their employment in connection with the contract	<i>Legal minimum</i> in respect of each claim, without limit to the number of claims	<i>For the period required by law</i>
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	£1,000,000	

Resolving and avoiding disputes

The *tribunal* is litigation in the courts

The *Adjudicator* is
Address for communications

'to be confirmed'
'to be confirmed'

Address for electronic communications

['to be confirmed'](#)

The *Adjudicator nominating body* is

The Institution of Civil Engineers

Z Clauses

Z1 Disputes

Delete existing clause W2.1

Z2 Prevention

The text of clause 18 Prevention is deleted.

Delete the text of clause 60.1(12) and replaced by:

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.

Z3 Disallowed Costs

Add the following in second bullet of 11.2 (18) add:

(including compensation events with the Subcontractor, i.e. payment for work that should not have been undertaken).

Add the following additional bullets after 'and the cost of ' :

- Mistakes or delays caused by the *Consultant's* failure to follow standards in Scopes/quality plans
- Reorganisation of the *Consultant's* project team
- Additional costs or delays incurred due to *Consultant's* failure to comply with published and known guidance or document formats
- Exceeding the Scope without prior instruction that leads to abortive cost
- Re-working of documents due to inadequate QA prior to submission, i.e. grammatical, factual arithmetical or design errors
- Production or preparation of self-promotional material
- Excessive charges for project management time on a commission for secondments or full time appointments (greater than 5% of commission value)
- Any hours exceeding 8 per day unless with prior written agreement of the *Service Manager*
- Any hours for travel beyond the location of the nearest consultant office to the project unless previously agreed with the *Service Manager*
- Attendance of additional individuals to meetings/ workshops etc who have not been previously invited by the *Service Manager*
- Costs associated with the attendance at additional meetings after programmed Completion, if delay is due to *Consultant* performance
- Costs associated with rectifications that are due to *Consultant* error or omission
- Costs associated with the identification of opportunities to improve our processes and procedures for project delivery through the *Consultant's* involvement
- Was incurred due to a breach of safety requirements, or due 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 resulting of rectifying a non-compliance with the Framework Agreement and/or any call off contracts following an audit

Z6 The Schedule of Cost Components

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

Z23 Linked contracts

Issues requiring redesign or rework on this contract due to a fault or error of the *Consultant* will neither be an allowable cost under this contract or any subsequent contract, nor will it be a Compensation event under this contract or any subsequent contract under this project or programme.

Z24 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 *Service Manager's* certificate.

Delete existing clause 51.2 and replace with:

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 *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

Z25 Risks and insurance

The *Consultant* is required to submit insurances annually as Clause Z4 of the Framework Agreement

Z111 PSC - Fee adjustment for non compliance with Scope

Delete existing 11.2 (8) and replace with the following clause

The Fee is the amount calculated by applying the fee percentage to the amount of the Defined Cost excluding the cost of Subcontractors 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 Subcontractors that have not complied with procurement by best value processes as defined in the Scope.

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 X10: Information modelling

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

OPTION X18: Limitation of liability

The *Consultant's* liability to the *Client* for indirect or consequential loss is limited to £1,000,000.00

The *Consultant's* liability to the *Client* for Defects that are not found until after the *defects date* is limited to £1,000,000.00

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

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

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

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

term *beneficiary*

no terms under this con no beneficiaries under this contract

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

BAM Nuttall Ltd

Address for communications

St James House
Knoll Road
Camberley
Surrey
GU15 3XW

Address for electronic communications

██████████@bam.com

The *fee percentage* is

Option E

██████████%

The *key persons* are

Name (1)

Job

Responsibilities

Qualifications

Experience

██████████
Framework Manager
Overall Programme Management
██████████
██████████

Name (2)

Job

Responsibilities

Qualifications

Experience

██████████
Design Manager
Design management of the CDF
████████████████████
██████████

Name (3)

Job

Responsibilities

Qualifications

Experience

Name (4)

Job

Responsibilities

Qualifications

Experience

Name (5)

Job

Responsibilities

Qualifications

Experience

Name (6)

Job

Responsibilities

Qualifications

Experience

Name (7)

Job

Responsibilities
Qualifications
Experience

The following matters will be included in the Early Warning Register

3 Time

The programme identified in the Contract Data is

Resolving and avoiding disputes

The *Senior Representatives* of the *Consultant* are

Name (1)

Address for communications

Mikasa House
Asama Court
Newcastle Business Park
NE4 7YD

Address for electronic communications

[@bam.com](#)

Name (2)

Address for communications

Mikasa House
Asama Court
Newcastle Business Park
NE4 7YD

Address for electronic communications

[@bam.com](#)

X10: Information Modelling

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

Contract Execution

Client execution

Signed Underhand by [Redacted]

for and on behalf of the Environment Agency

[Redacted] 13/08/2024
Signature Date

Project Executive, Innovation and Delivery Group
Role

Consultant execution

BAM Nuttall Ltd

Signed Underhand by [PRINT NAME]

for and on behalf of

[Redacted]
[Redacted] 08/08/2024
Signature Date

Divisional Director
Role

PSC scope template

LIT 13259 NEC4 Professional Services Contract (PSC)

Document category: COMPULSORY

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Table of Contents

PROJECT / CONTRACT INFORMATION..... 2

1 INTRODUCTION.....
ERROR! BOOKMARK NOT DEFINED.

1.1 Overview.....3

1.2 Objectives.....3

1.3 Outcome Specifications.....3

1.4 Project Specific Requirements.....3

2 PROJECT MANAGEMENT AND COMMUNICATIONS.....
ERROR! BOOKMARK NOT DEFINED.

2.1 Contract Management.....5

2.2 Requirements Of The Programme.....5

3 TECHNICAL SERVICES.....
ERROR! BOOKMARK NOT DEFINED.

3.1 Services.....6

3.2 Outputs And Deliverables.....6

3.3 Procurement Of Subcontractors.....7

3.4 Health And Safety.....7

3.5 Constraints on how The Consultant Provides The Services.....7

4 SERVICES AND OTHER THINGS PROVIDED BY THE CLIENT.....
ERROR! BOOKMARK NOT DEFINED.

APPENDIX 1 – BIM PROTOCOL..... ERROR! BOOKMARK NOT DEFINED.

APPENDIX 2 – NATIONAL TECHNOLOGY INVESTMENT PLAN..... ERROR! BOOKMARK NOT DEFINED.

Environment Agency NEC4 professional services contract (PSC) Scope

Project / contract Information

Project name	Decarbonisation Technology Accelerator (DTA) Programme – Technology Theme Leads (TTL) Scope
Project 1B1S reference	ENV0005802C
Contract reference	tbc
Date	06 June 2024
Version number	4
Author	DTA National

Revision history

Revision date	Summary of changes	Version number
8 January 2024	First issue	1
27 March 2024	Second issue	2
09 May 2024	Third issue	3
06 June 2024	Fourth issue	4

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

Document	Document Title	Version No	Issue date
LIT 13258	Minimum Technical Requirements	12	30/12/2021 MTR library
LIT 17641	Exchange Information Requirements	3	1/12/2022 EIR library

LIT 65150	Minimum Technical Requirements - Environment and Sustainability	2	30/03/2023 MTR-E&S
LIT 16559	Safety, health environment and wellbeing (SHEW) Code of Practice	6	12/12/2023 SHEW
LIT 14284	Whole Life (Construction) Carbon Planning Tool	6	15/08/2023 WLCPT

1 Introduction

1.1 Overview

- 1.1.1 The Decarbonisation Technology Accelerator (DTA) programme is a national programme that will make best use of the Integrated Delivery Teams (IDTs) in each hub to accelerate decarbonisation. The programme has been scoped around six technology themes with the best potential for achieving decarbonisation and cost efficiencies. These are:
- Modern Methods of Construction
 - Earthworks Optimisation
 - Novel/Ultra-low carbon concretes
 - Low carbon concretes (scaling-up)
 - Low carbon steel/alternatives
 - Asset management
- 1.1.2 Each technology has a Technology Theme Lead (TTL) and supporting team, that will advise and coordinate the tasks and activities associated within their theme. This requires a Technology Plan, encompassing all technologies included in the theme. TTLs will also convene Task and Finish Groups (TFGs), comprising members of the EA's Engineering Innovation team (EIT) and representatives from each hub. These TFGs will be the primary forum used for defining approaches/best practice and ensuring that the activities associated with each theme are coordinated nationally.
- 1.1.3 The programme will make use of Environment Agency (EA) accelerator host projects (AHPs), including live ground investigations and construction projects, to trial promising new technologies, to help optimise the processes and systems associated with their use, and to scale up their deployment in creating new and managing existing assets. This will result in programmes of accelerators in all six collaborative delivery hubs. The programmes in each hub will be led by an integrated EA, Collaborative Delivery Framework (CDF) Lot 1 *Consultant* and Lot 2 Contractor team. This hub team will also be responsible for ensuring that changes in processes and systems proposed nationally by TTLs and TFGs will work locally in the hub.
- 1.1.4 This contract is let under the Collaborative Delivery Framework (CDF) and will be compliant with the schedules and overarching requirements of this framework.

1.2 Objectives

- 1.2.1 The objective of the DTA programme is to accelerate adoption of a range of technologies to deliver cost and carbon efficiencies to the *Client's* capital programme, to support Net Zero Carbon 2030 (NZC2030) targets. The current arrangements for delivering technology efficiencies project-by-project will not deliver the rate of carbon reductions needed to meet the NZC 2030 target.

1.3 Outcome Specification

- 1.3.1 The desired outcome of this contract is the development and optimisation of a national programme of activities designed to reduce the carbon intensity of the *Client's* capital programme using the technology theme of modern methods of construction.
- 1.3.2 For this outcome to be achieved, the *Consultant's* professional advisory services and supply chain intelligence will be required to coordinate a national programme of testing, optimisation and scaling-up for the technology theme of modern methods of construction.

1.4 Project specific requirements

- 1.4.1 The *Consultant* is required to provide the technical services as described under 3.1 Services. Key products for each technology theme will include, but may not be limited to, the following:
- Theme Technology Plans (including delivery plan) – (currently saved on the DTA Programme MS Teams channel)
 - Innovation readiness level (IRL) tasks lists and programme
 - Cost estimates

- Terms of reference for the theme Task and Finish Group (TFG)
- Progress reports

2 Project management and communications

2.1 Contract management.

- 2.1.1 The contract will be administered using FastDraft.
- 2.1.2 As part of the general project management duties the *Consultant* shall, as a minimum, communicate with the *Client* and wider Project Team in the following ways:
- Monthly Progress Reporting (including progress update report, record of deliverables issued, and/or advice provided to the *Client*, comments on the programme, financial updates & forecasts and risk management updates meeting the *Client's* project reporting timetable).
 - Provide project updates to the *Client* via phone or telecon as required.
 - Provide input to a project issues log which will be reviewed at monthly progress meetings and determine the appropriate actions necessary to resolve the identified issues.
 - Contribute to lessons learnt relevant to the Decarbonisation Technology Accelerator Programme on the DTA lessons learnt log, this is to be reviewed at progress meetings.
- 2.1.3 The *Consultant* is to make full use of the *Client's* web-based project collaboration tools (SharePoint/FastDraft) for the handover of project deliverables. All project and contract communications and records are to be distributed and stored using this project collaboration tool.
- 2.1.4 Assist with development of carbon and sustainability reporting mechanisms for the theme(s), including carbon savings associated with the technology deployment on accelerator host projects, and input to reporting at key DTA programme milestones.
- 2.1.5 Contribute monthly to the updates to the project risk register.
- 2.1.6 Submission of an application for payment without this format of backup sheet will not be recognised and treated as a compliant submission. Commission forecast data to be entered on FastDraft monthly. The *Consultant* is required to provide a monthly financial forecast on FastDraft for cost in accordance with FHU:
[Framework Heads Up 244 Commercial Clarification No.54 New FastDraft Field Available](#)
[Framework Heads Up 256 - Commercial Clarification No 57 Clarification of data required in FastDraft Forecast](#)

2.2 Requirements of the programme

- 2.2.1 The following requirements apply:
- The *Consultant* provides the programme for the two initial technologies being progressed under each technology theme in consultation with the *Service Manager* and in accordance with the Contract Data and the requirements of Clause 31 of the conditions of contract in Microsoft Project Format (Version 2016).
 - The *Consultant's* programme should be compatible with the *Client's* whole life programme for the overall project (available on request).
 - The *Consultant* shall ensure that the programme includes appropriate time allowances for the internal quality assurances and review of all deliverables prior to issue to the *Client*.
 - The *Consultant* shall allow the *Client* a two-week period to review each of the deliverables prior to their finalisation and this should be reflected in the programme.
 - The programme for the Works will be defined by the *Client* and TTL. The *Consultant* will be required to input into this programme as required by the *Client*.

3 Technical Services

3.1 Services

3.1.1 See Appendix 2 for details of the National Technology Investment Plan for this technology theme. Key activities to be provided by the TTLs will include, but may not be limited to, the following:

- IRL assessments for all technologies within the theme that have potential to achieve the programme objectives.
- Developing relevant content of the Technology Plan (TP) for all technologies within the theme and then updating and maintaining these throughout the duration of the programme for this theme.
- Identification and scoping of "National Once" activities and deliverables.
- Identification of tasks that will need to be undertaken at a hub level by the hub teams, including those requiring testing, optimisation or initial scaling-up on Accelerator Host Projects (AHPs).
- Developing a detailed cost estimate for all TTL tasks and activities required to implement the TP.
- Developing and maintaining Terms of Reference (ToRs) for the national Task and Finish Group (TFG) for the theme. Agreeing membership of this with the EIT and hub leads and coordination of TFG meetings.
- Managing the TFG: working together, using the TFG as the primary forum, to coordinate the testing, optimisation and scaling-up activities relevant to this theme across the six hubs, and the review of trial data.
- Liaising with the hub teams proposing inclusion of technologies within the theme in their hub programme and Supply & Service Plan, as required.
- Collaboration with the National Team on developing the methodologies for estimating future cost and carbon savings associated with this theme over the course of the programme, and applying these methods. Establish carbon, cost and resource baseline metrics as the basis for development of these methodologies. Collaboration with the National Team on developing a method for tracking technology IRL performance/progress over the course of the programme against the assumptions in the full business case.
- Tracking and reporting on technology IRL progress ensuring that the tasks planned are appropriate for achieving the required progression in IRL stages.
- Co-production, working with the national EA project management team, of a template for progress reporting to the Project Board.
- Produce an outcome-based timetable for when the Project Board will need to review progress. This will be in collaboration with the DTA Project Team who are overseeing the overall project timetable.
- Review of IRLs assessment matrices and update of tasks lists and budget allocations for each technology product as required.
- TTL attendance at Technical Steering Group.
- Engagement, and necessary interaction with, the Independent Innovation Process Assurer (Expedition Engineering).

3.2 Outputs and deliverables

The outputs and deliverables are provided in detail within each Technology Plan. They include all documents required to define the activities necessary to achieve an optimised programme of "National Once" activities and hub technology accelerators for this theme. The Technology Plan will contain, but

not be limited to, the following documents: IRL matrices and assessments (and detailed tasks lists), budget estimations, timelines or Gantt charts, and mobilisation commentary sheets (summarizing the hub input requirements and immediate tasks to be taken forward). The Technology Plan for each theme will be hosted on the DTA Programme SharePoint Online Site at the following link:

[Decarbonisation Technology Accelerator Programme - Technology Themes - All Documents \(sharepoint.com\)](#)

3.3 Procurement of subcontractors

- 3.3.1 If there is need to procure specialist suppliers to provide advisory or design services, then subcontractors need to be selected using best value processes. This requires the *Consultant* to demonstrate that they have made reasonable attempts to obtain three competitive tenders for all work in excess of £25,000 where possible. 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.

3.4 Health and Safety

- 3.4.1 Health, Safety and Wellbeing (HSW) is the number one priority of the *Client*. The *Consultant* shall promote and adopt safe working methods and shall strive to deliver design solutions that provide optimum HSW to all.
- 3.4.2 The *Consultant* shall follow and comply with the requirements outlined in the Safety, health environment and wellbeing (SHEW) Code of Practice (LIT 16559).

3.5 Constraints on how the *Consultant* provides the services

- 3.5.1 The constraints at each site will be those associated with the AHPs, in addition to any constraints arising from the trials proposed.

4 Services and other things provided by the *Client*

- a) DTA Mobilisation instructions
- b) ASite
- c) CDC SharePoint Site

Appendix 1 – BIM Protocol

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.

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

The *Consultant* shall register for an Asite Account and request access to the project workspace to view the IDP.

Appendix 2 – National Technology Investment Plan

The DTA programme will deliver an overarching national technology investment plan over the 3 years of the programme. This has been constructed from the technology readiness assessments and sets out 'planned' levels of IRL stages and required progress per year for each of the 6 technology themes and their specific technologies (see below).

National technology investment plan showing annual IRL stages and their budgets over 3 years (reference: Full Business Case submission dated 16 November 2023)

Theme	Technology	CURRENT		YEAR 1		YEAR 2		YEAR 3		TOTAL
		Current IRL stages	Current IRLs	Year 1 IRL stages	Year 1 IRLs	Year 2 IRL stages	Year 2 IRLs	Year 3 IRL stages	Year 3 IRLs	Total 3 yr Budget (€K)
Steel	Document	Seeking	29	Optimising	33	24.4	Scaling-Up	18	88.8	217.4
Steel	EcoSheetPiles Plus	Optimising	53	Optimising	20	117.4	Scaling-Up	11	71.0	259.9
Steel	Steel Database	Seeking	35	Optimising	21	12.6	Optimising	16	38.3	209.1
Steel	Mandate SI	Seeking	27	Optimising	32	64.5	Scaling-Up	23	256.3	436.3
Steel	Extension Technologies	Seeking	15	Optimising	29	24.0	Optimising	23	57.6	145.1
Concrete 2	RC Efficiency	Seeking	60	Optimising	13	248.0	Scaling-Up	12	308.8	556.7
Concrete 2	LCC Specification	Optimising	68	Optimising	9	70.2	Scaling-Up	9	48.6	124.8
Concrete 1	DB Group CemFree	Optimising	63	Optimising	2	7.5	Optimising	4	11.3	100.5
Concrete 1	Wagner - Earth Friendly Concrete	Optimising	59	Optimising	2	7.5	Optimising	6	15.0	92.5
Concrete 1	Ternary Blended Cement	Optimising	57	Optimising	10	24.4	Scaling-Up	10	70.0	94.4
Concrete 1	LC3 Calcined Clay and Limestone	Optimising	45	Optimising	10	16.0	Optimising	11	67.0	161.0
Concrete 1	Cemex Vertua Ultra	Optimising	60	Optimising	2	7.5	Optimising	7	23.0	112.3
Concrete 1	Tarmac AACM - Untitled	Optimising	53	Optimising	7	60.9	Optimising	9	25.0	167.6
Concrete 1	Carbon Sequestration - Carbon Curing Concrete	Seeking	39	Optimising	4	3.0	Optimising	8	8.1	78.5
Concrete 1	Carbon Sequestration - Carbon Aggregates	Seeking	34	Optimising	7	18.5	Optimising	6	2.4	45.6
Concrete 1	Basalt Fibre Reinforced Polymer Rebar	Optimising	53	Optimising	14	12.0	Scaling-Up	0	0.0	40.8
Concrete 1	Glass Fibre Reinforced Polymer Rebar	Optimising	52	Optimising	12	9.0	Scaling-Up	0	0.0	28.0
Concrete 1	Graphene in Concrete	Seeking	23	Seeking	0	0.0	Optimising	15	15.8	36.5
MMC	3DPOffs	Seeking	42	Optimising	13	127.5	Scaling-Up	20	130.0	409.0
MMC	3DPOnS	Seeking	24	Optimising	29	381.5	Optimising	15	325.5	1019.0
MMC	S&BF	Optimising	37	Optimising	10	91.6	Optimising	19	84.4	366.0
MMC	NM	Seeking	21	Optimising	21	57.3	Optimising	26	132.8	290.0
MMC	IAD	Seeking	28	Optimising	21	184.3	Optimising	18	164.0	531.8
MMC	DCESE	Scaling-Up	77	Scaling-Up	5	26.8	Scaling-Up	4	45.5	138.3
O&M	Check Engine Light (RLA1)	Seeking	32	Optimising	17	14.4	Optimising	19	42.8	123.1
O&M	Active Assets lifecycle maintenance (RLA2)	Optimising	45	Optimising	16	78.8	Scaling-Up	12	33.4	164.1
O&M	Active asset energy efficiency (RLA3)	Seeking	29	Optimising	22	63.0	Optimising	15	86.0	223.0
O&M	Fixed asset monitoring (RLA4)	Seeking	31	Optimising	18	114.8	Optimising	18	169.5	440.3
O&M	Remote monitoring of trash and debris screens	Optimising	51	Optimising	8	55.1	Scaling-Up	18	95.3	150.4
O&M	Energy recovery and storage (RLA8)	Seeking	29	Optimising	17	54.5	Optimising	20	85.4	219.9
O&M	Energy efficiency for buildings (RLA9)	Optimising	64	Optimising	0	0.0	Optimising	6	6.4	30.4
O&M	Monitoring of asset integrity for raising (RLA10)	Seeking	29	Optimising	20	58.6	Optimising	18	84.4	221.0
Earthworks	Process Optimisation (EW-1A)	Seeking	58	Optimising	18	33.0	Scaling-Up	12	142.5	175.5
Earthworks	Optimised GI Process (EW-2A)	Seeking	43	Optimising	27	45.8	Scaling-Up	18	166.3	212.0
Earthworks	Low carbon new and remedial works (EW-2B)	Seeking	43	Optimising	21	110.1	Optimising	10	142.8	321.6
Earthworks	Geodigital and visualisation tools (EW-3A)	Seeking	33	Optimising	11	40.0	Optimising	22	130.0	360.0
Earthworks	Improved decision making (EW-4A)	Seeking	31	Optimising	18	57.4	Optimising	18	84.8	220.1
Earthworks	Monitoring to support risk based approaches (EW-5A)	Seeking	32	Optimising	26	65.5	Optimising	14	131.0	297.5

The national technology investment plan as presented in the FBC comprises:

1. 'planned' IRL stage delivery milestones for each technology under the 6 themes over 3 years
2. for each technology IRL stage a budget has been estimated covering the expected investment in technology supply and deployment to deliver this stage of readiness.

The national technology investment plan will be updated 'in-year' as a result of progress and reporting against the hub level Supply & Service Plan and annual programme by the DTA Hub PM and Hub Leads, and from tracking the achievement of IRL stages across AHPs and national once activities by the TTLs.