
NZIP Flexibility Innovation Programme: Energy System 'Digital Spine' Scoping Study

Pre-procurement information event – 13:00 – 14:00 8th September 2022

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Agenda

Item
Housekeeping and objective for the session
Background and context
Overview of the opportunity
Anticipated requirements
Procurement process
Close

Housekeeping

- The event is **not being recorded**.
- This presentation will be published after the event on the [Flexibility Innovation Programme website](#).
- **Questions will not be answered in this session.**
- Please type comments and feedback in the Q&A function (top right of screen).
- Comments and feedback can also be submitted via email to FlexibilityInnovation-DigitalSpine@beis.gov.uk until **midday on 15th September**.
- There will be an opportunity to submit questions following the publication of the ITT. A deadline and process for submitting questions will be provided in the ITT. Responses to questions that BEIS considers to be material to the programme will be anonymised and published.
- **Please be aware that the programme is still in development stage and details outlined today are subject to change.**



Objective for the session

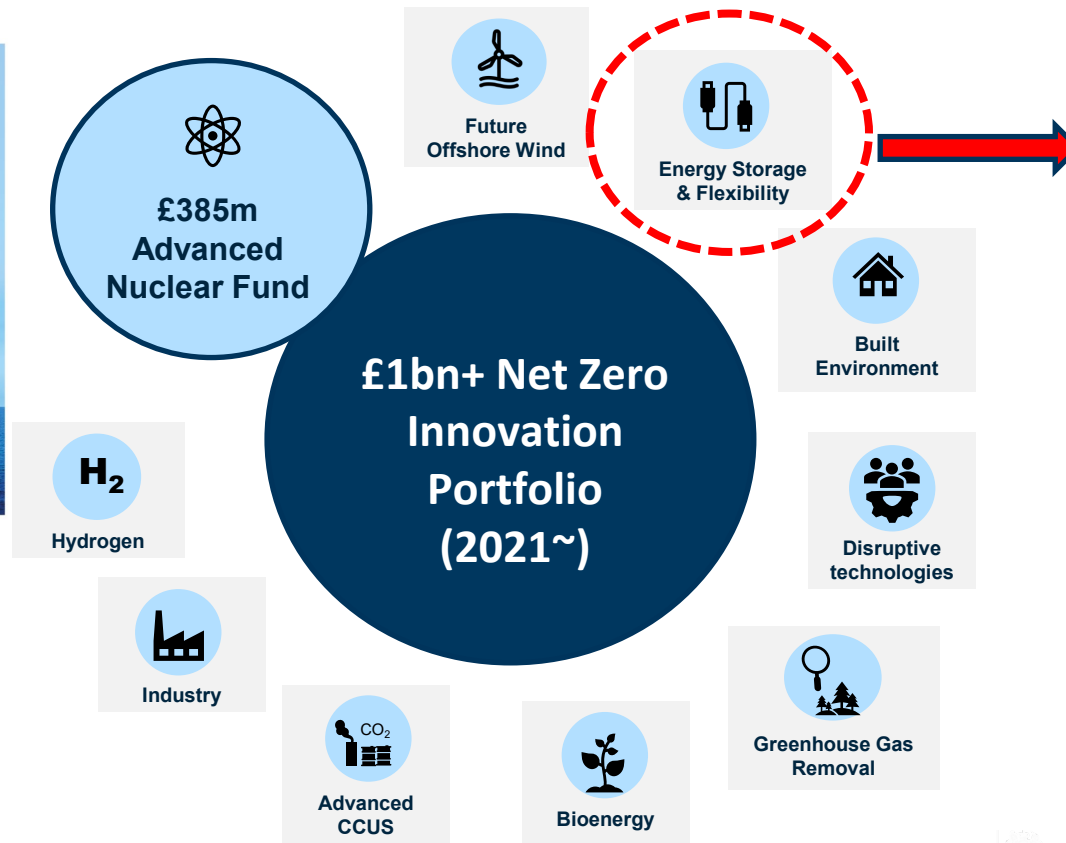
To provide potential suppliers with a better understanding of the requirements before we go to market, and to provide an opportunity for feedback and comments



Background and context



The Net Zero Innovation Portfolio



- **£68m Long Duration Energy Storage**
- **£65m Flexibility Innovation**

Flexibility Innovation Programme

- An up to £65 million overarching programme
- Seeks to enable large-scale widespread electricity system flexibility through smart, flexible, secure, and accessible technologies and markets.
- To achieve this, the programme aims to fund innovation across a range of key smart energy applications.
- It is expected that the programme will run to the end of March 2025
- Updates to the Flexibility Innovation Programme will be provided on the [Flexibility Innovation Programme Webpage](#)

Policy background

- To deliver the [British Energy Security Strategy](#) and meet our target of net zero by 2050, we need a smart, flexible electricity system underpinned by data and digitalisation.
- In the [Smart Systems and Flexibility Plan 2021](#), we estimate that we will need around 30GW of low carbon flexible assets (such as storage, demand side response and interconnection) by 2030, representing a three-fold increase on today's levels.

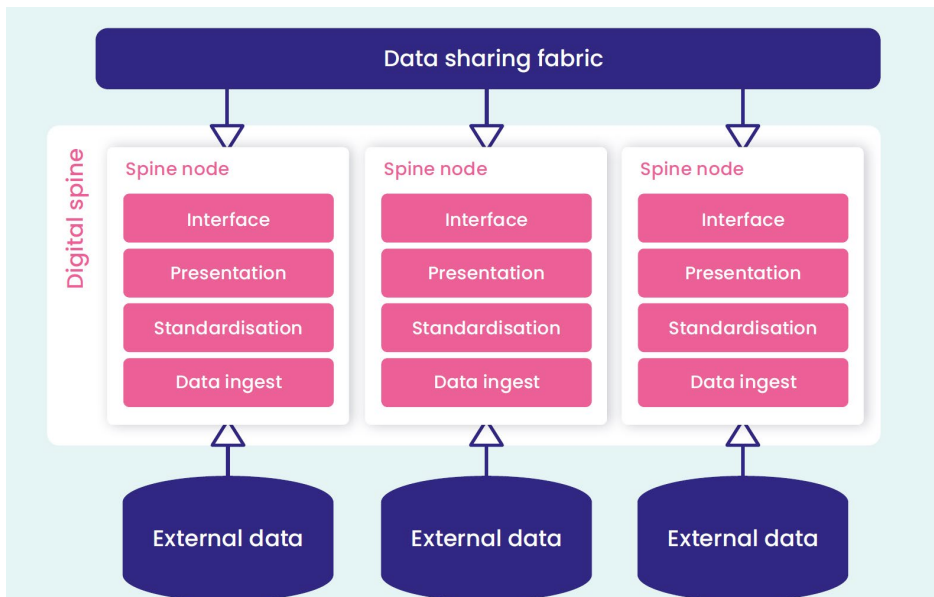
In the UK's first [Energy Digitalisation Strategy](#) published in 2021, the Government set out how only **a digitalised energy system** can withstand the millions of new energy flows every second from low carbon technologies (such as heat pumps, solar, batteries, and electric vehicle charge points) connecting to the grid over the coming years.

Policy background

- The Energy Digitalisation Taskforce was commissioned by BEIS, Ofgem and Innovate UK to continue our focus on modernising the energy system to unlock flexibility. [Their report](#) set out six recommendations for Government, Ofgem and industry to support the transition.
- One of the strategic interventions proposed was for Government, with support from Ofgem, industry and other interested parties, **to create a ‘digital spine’ for the energy system, in support of delivering interoperability across the sector.**
- In the joint BEIS, Ofgem and Innovate UK [response to the Taskforce](#), BEIS committed to procuring a study to **examine the opportunities, risks and potential architectures** of an energy system ‘digital spine’.

The concept

An energy system 'digital spine' is a proposed piece of system-wide digital infrastructure to connect energy system participants, **enabling them to exchange data simply and securely.**



*The digital spine: Outline of the architecture
(Energy Digitalisation Taskforce report, January 2022)*

A common industry-wide 'digital spine' solution could deliver the efficiencies of an interoperable, digital energy system.

However, the **definition, scope, potential delivery options and overarching governance requirements** are uncertain and wide-ranging.

Aims and objectives

To establish the needs case for an energy system 'digital spine' and its benefits to a smart, flexible, decarbonised energy system; to understand the potential scope of an energy system 'digital spine', and how it may be delivered.

The objectives are:

- Clearly **define the problems** that a 'digital spine' for the energy system would solve
- **Identify the target audience, key users, and related real-world case studies**, ensuring comprehensive **stakeholder identification and engagement** throughout
- **Detail relevant constraints and dependencies**, including governance, legislation, contracts, legacy technology and existing processes and systems
- **Assess the technical feasibility and security requirements** of an energy system 'digital spine'
- **Provide evidence to inform future policy**, regulation, and potential delivery options

Overview of the opportunity



Purpose of the Invitation to Tender (ITT)

To procure a six-month scoping study to:

- establish the needs case for an energy system 'digital spine' and its benefits to a smart, flexible, decarbonised energy system; and
- understand the potential scope of an energy system 'digital spine', and how it may be delivered.

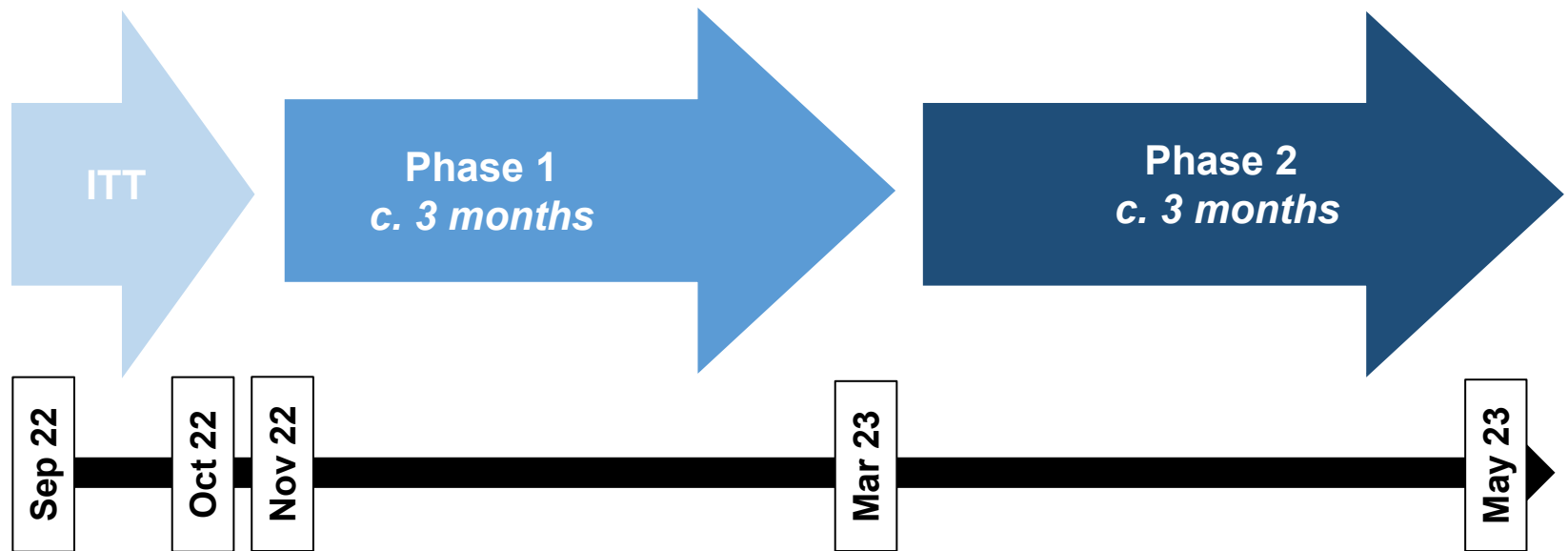


Headlines

- A PIN was published on 17th August 2022
- Anticipated launch of ITT - **16th September 2022**
- Expected contract length - 6 months from **November 2022**
- Funding opportunity expected to be approximately **~£200k**, excluding VAT
- Procurement route- Open procurement posted via Find a Tender Service

Please be aware that the programme is still in development stage and details outlined today are subject to change.

Anticipated structure



Please note these timelines are indicative and subject to change

Anticipated requirements



Overview of anticipated requirements

R1 – Programme initiation and ongoing management

Phase 1: Scope and stakeholder engagement

- R2 – Definition and benefits
- R3 – Stakeholder identification and engagement
- R4 – User journeys and use cases

Phase 2: Technical and commercial feasibility

- R5 – Constraints and dependencies
- R6 – Technical assessment and requirements
- R7 – Delivery routes and costings
- R8 – Final reporting

R1 – Programme initiation and ongoing management

Launching the programme and establishing the project management process

Anticipated to include:

- Mobilisation
- Ongoing reporting and management
- Knowledge sharing and dissemination

Phase 1 requirements

Phase 1: Scope and stakeholder engagement

R2 – Definition and benefits

R3 – Stakeholder identification
and engagement

R4 – User journeys and use cases



R2 – Definition and benefits

Presenting a clear rationale, definition and benefits for an energy system ‘digital spine’

Anticipated to include:

- A description of the problems
- The scope and definition of an energy system ‘digital spine’
- The case for government or regulatory intervention and coordination
- Contribution of a ‘digital spine’ to a decarbonised, smart and flexible energy system



R3 – Stakeholder identification and engagement

Well-structured and targeted stakeholder engagement across the GB energy system

Anticipated to include:

- Comprehensive stakeholder engagement
- Inclusive of engagement with non energy system actors (such as transport, heat, local government, digital service providers)



R4 – User journeys and use cases

Building key user journeys for the ‘digital spine’ and learnings from relevant case studies in other sectors

Anticipated to include:

- User journeys and use cases
- ‘Day 1’ use-cases on the outcomes of an energy system ‘digital spine’
- Review of real-world case studies of ‘digital spines’ implemented in other sectors, nationally and/or internationally

Phase 2 Requirements

Phase 2: Technical and commercial feasibility

R5 – Constraints and dependencies

R6 – Technical assessment and requirements

R7 – Delivery routes and costings

R8 – Final reporting



R5 – Constraints and dependencies

Reviewing constraints and dependencies of an energy system 'digital spine'

Anticipated to include:

- Review of existing governance, legislation, contracts, legacy technology and existing processes and systems
- Define the necessary governance structure options
- Market test into why the recommended governance option is necessary to deliver an energy system 'digital spine'
- Consideration of potential Critical National Infrastructure risks and impacts



R6 – Technical assessment and requirements

Conducting a detailed technical assessment of what an energy system 'digital spine' could look like

Anticipated to include:

- Technical assessment of integrating a 'digital spine' into the energy system
- Linkages with other data and digitalisation projects
- Outline engineering design for a minimum viable product



R7 – Delivery routes and costings

Considering policy options, long term delivery routes and costings

Anticipated to include:

- Set up and ongoing costs of an minimum viable product and system wide solution
- Options for delivery routes and enduring governance structures
- Projected delivery timelines
- Next steps and potential further work required, including any innovation activity

R8 – Final reporting

Conclusion of the project and sharing key findings

Anticipated to include:

- Summary of key findings from Phase 1 and 2
- Final project report
- Work with BEIS to develop a plan for sharing key findings (such as publications and events)

Skills and expertise

In order to deliver the requirements, BEIS envisages the successful supplier / consortium to have skills and expertise in the following areas:

- Project management
- Delivery route expertise
 - Experience of developing long term delivery routes and costings
- Technical expertise
 - agile software development
 - implementing digital tools in a decarbonised energy system context
- Regulatory expertise
 - Experience of working in a regulated environment
 - Knowledge of the UK energy system digitalisation strategies
 - Knowledge of UK Critical National Infrastructure (CNI)
- Stakeholder engagement and knowledge dissemination



Procurement process



Anticipated evaluation criteria

Criterion
<i>Understanding of the problem</i>
<i>Approach and methodology</i>
<i>Project team</i>
<i>Project management and risk</i>
<i>Social value</i>
<i>Price</i>

Evaluation criteria - social value

- Social value is a broad term used to describe **the wider social, environmental and economic effects of an organisation's actions**, and how they contribute to the long-term wellbeing of individuals, communities and society.
- Social value is not just what the contract delivers but the **legacy or footprint of the contract**. The supplier should show how they will create added social value through the contract.
- Social value scoring is weighted at 10% of the total as a minimum when evaluating bids
- <https://www.gov.uk/government/publications/procurement-policy-note-0620-taking-account-of-social-value-in-the-award-of-central-government-contracts>



Terms and conditions

- The Department's Standard Terms and Conditions for the Procurement of Services will be used for this contract.



Comments and feedback



Comments and feedback

We welcome feedback on the scope of the requirements presented today. We would particularly welcome feedback and comments around the following:

- Is the proposed innovation activity the right approach to realising the aims of simple and secure data exchange for the energy system?
- Is there any further information you would find useful when considering whether to submit a tender for this opportunity?
- What do you see as the major challenges to delivering the requirements?
- To what extent do you think the requirements could be met, to time and budget?
- Who would you consider as potential users of the energy system 'digital spine'? What use-cases do you envision?

Comments and feedback can be submitted via email to

FlexibilityInnovation-DigitalSpine@beis.gov.uk until midday on **15th September 2022**.

Thank you for listening

