



Department for
Energy Security
& Net Zero

Advanced Modular Reactor (AMR) Research, Development & Demonstration (RD&D) Programme: Phase B

Grant Competition Guidance Notes

Deadline for Applications: 31st March 2023 (extended from 5th March 2023)

Any references to the **Department for Business, Energy and Industrial Strategy (BEIS)** in this Competition Document or any other documents associated with this competition shall, where appropriate, be treated as references to the **Department for Energy Security and Net Zero (DESNZ)** which was created through the Machinery of Government changes on 07/02/2023.

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Revision History

Issue	Date of Issue	Details of Change
1		First issue
2	23/02/2022	Competition extension and feedback from Q&A incorporated – Section 6: Competition extended by 1 month and schedule updated accordingly. Section 10.1: Numbering error corrected.

Glossary of Terms & Definitions

Term	Definition
AMR	Advanced Modular Reactor
APM	Association for Project Management
Applicant	The Lead Applicant or another organisation in the Applicant Group.
Applicant Group	Collective term for all organisations in the Lead Applicants' consortium and supply chain
BEIS	Department for Business, Energy, and Industrial Strategy
Competition	The process that will take place between the launch of these guidelines, and the award of grant contracts
CPF	Coated Particle Fuel
CRL	Commercial Readiness Level
CV	Curriculum Vitae
Demonstration	All activities carried out to enable the option for commercial HTGR technology by reducing technical risk. This includes the demonstrator, and any ancillary activities needed to achieve the programme's aims, goals, and objectives.
Demonstrator	A licensed operating nuclear reactor intended to showcase functionality and reliability
DESNZ	Department for Energy Security and Net-Zero
EA	Environment Agency
EPC	Engineering-Procurement-Construction
EU	European Union
FBC	Full Business Case (used in reference to the accuracy requirements in HMG's Cost Estimating Guidance)
FEED	Front-End Engineering Design
FEED+	FEED and other supporting activities
FOAK	First-of-a-Kind
GB	Great Britain
GDA	Generic Design Assessment
GDPR	General Data Protection Regulations
GIF	Generation IV International Forum
Grant Recipient	Successful Lead Applicants who are given grant awards
HMG	His Majesty's Government
HTGR	High Temperature Gas Reactor
I&C	Instrumentation and Control
IP	Intellectual Property
KPI	Key Performance Indicator
Lead Applicant	The lead organisation submitting the application. This organisation may be supported by consortium partners or by sub-contractors, or they could possibly be a solo bidder.
LOI	Letter of Intent
MO	Monitoring Officer
NOAK	Nth-of-A-Kind
NZIP	Net-Zero Innovation Portfolio
OBC	Outline Business Case (used in reference to the accuracy requirements in HMG's Cost Estimating Guidance)

Term	Definition
ONR	Office for Nuclear Regulation
Organisational Role	A key role in a nuclear project that will be filled by an organisation (as opposed to an individual)
Partner	An organisation in the applicant group that is part of the Grant Recipient's consortium
PCG	Parent Company Guarantee
PID	Project Initiation Document
PMI	Project Management Institute
Project	The scope of work that will be funded by the Grant and associated match-funding
Q&A	Questions and Answers
R&D	Research and Development
RD&D	Research, Development, and Demonstration
SICE	Science and Innovation for Climate and Energy (a BEIS Directorate)
SMR	Small Modular Reactor
SOC	Strategic Outline Case (used in reference to the accuracy requirements in HMG's Cost Estimating Guidance)
SPV	Special Purpose Vehicle
SR	Spending Review
SR25	The next anticipated SR
TCA	Trade and Cooperation Agreement
TRL	Technology Readiness Level
UK	United Kingdom
VAT	Value Added Tax
VfM	Value for Money
W/C	Week Commencing
WTO	World Trade Organisation

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1. Introduction

The purpose of this document is to provide an overview of the Advanced Modular Reactor (AMR) Research, Development, and Demonstration (RD&D) Programme Phase B competition. This guidance should be read in conjunction with the supporting documents (Annexes) listed below. Applicants should carefully review all information in this document and the annexes.

1.1. Supporting documents

The following documents support this Competition Guidance. They are available [here](#) and within the application form:

- Annex 1: Grant Funding Agreement Template
- Annex 2: Declarations
 - Declaration 1: Statement of non-collusion
 - Declaration 2: Form of Bid
 - Declaration 3: Conflict of Interest
 - Declaration 4: Code of Practice for Research
 - Declaration 5: The UK General Data Protection Regulation Assurance Questionnaire
 - Declaration 6: Modern Slavery Statement
 - Declaration 7: Security Questionnaire
- Annex 3: Project cost breakdown form - Grant

2. AMR RD&D Programme

2.1. Programme Overview

The [Ten Point Plan for a Green Industrial Revolution](#), the [Energy White Paper: Powering Our Net Zero Future](#), the [Net Zero Strategy: Build Back Greener](#), and the [British Energy Security Strategy](#) all recognise the role of large (Gigawatt scale) nuclear reactor technology, Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs) in supporting Net Zero by 2050. As part of the £385m Advanced Nuclear Fund, a commitment was made for an AMR Research, Development, and Demonstration (RD&D) Programme, to better understand the technology and enable an AMR demonstration by the early 2030s. This fund is aligned with the Department's £1 billion [Net Zero Innovation Portfolio \(NZIP\)](#) which aims to accelerate the commercialisation of innovative clean energy technologies and processes through the 2020s and 2030s.

Advanced Modular Reactor is a UK term for the next generation of nuclear reactors which have the following characteristics:

- use of novel coolants and/or fuels and typically have higher temperature outputs in the range of 700-950°C (compared to around 300°C for Light Water Reactors (LWRs) or 600°C for Advanced Gas Reactor (AGRs)).
- generally have a lower power output (MW) than large nuclear reactor technology.
- likely to be designed so that much of the plant can be fabricated in a factory environment and transported to site to reduce build costs.

The UK's [Industrial Decarbonisation Strategy](#) highlights that the majority (70%) of the UK industrial energy demand is for heat. This demand for industrial process heat is expected to increase as 'hard-to-abate' areas of the economy decarbonise to meet Net-Zero. Processes for hydrogen and synthetic fuel production may also require an additional source of low-carbon heat.

BEIS aims to develop and demonstrate AMRs by the early 2030s. This is to enable them to be a viable cost-effective technology solution option (alongside other low-carbon technologies) for decarbonising industrial heat, and potentially for cost-competitive electricity generation.

In December 2021, following underpinning analysis and a Call for Evidence, the focus for the programme was confirmed as High Temperature Gas Reactor (HTGR) technology¹. This focus is for the AMR RD&D programme only. In parallel, BEIS continues to explore the potential of all AMRs including through; opening the [Generic Design Assessment \(GDA\) process to advanced nuclear technologies](#), the UK's membership of the [Generation IV Forum](#) (GIF), and development of enabling policy, including on siting.

BEIS are not currently aware of any viable fully commercial proposals for HTGRs that could be deployed in time to make an impact on Net Zero by 2050. Current evidence suggests that low technology readiness, in the context of potential commercial applications may be one of the reasons for this market failure. Therefore, BEIS will provide support to a demonstration that will address this technology gap and enable HTGRs to contribute to the Net Zero 2050 target.

¹ Government's preference for HTGRs is for this Programme only and will complement the UK government's wider activities on nuclear policy and broader AMR technologies.

This demonstration, which is to be sited in the UK, must be shaped by end-user requirements, and should incentivise private investment in HTGRs by removing technical risk. It should aim to have innovation at the centre of its design, licensing, manufacture, build, and application.

In February 2022 BEIS launched the [AMR RD&D Phase A SBRI Competition](#) to gather evidence to underpin the specification of future phases of AMR RD&D programme, and to position organisations to successfully deliver on the aims and objectives of the AMRD RD&D programme by the early 2030s.

In September 2022 BEIS announced the [six successful projects](#) for Phase A. Early evidence from these projects has now been received and this has enabled BEIS to design Phase B of the programme. **AMR RD&D Phase B is a separate open competition – applications are not limited to successful Phase A projects, but must be capable of delivery of a HTGR Demonstration by the early 2030s.**

This Phase B competition guidance covers reactor technology and associated fuel design. BEIS will provide further information on the development of Coated Particle Fuel (CPF) R&D in the UK in due course.

Phase B is an open competition. All Phase B applications will be considered on their own merit – whether or not Applicants were successful in Phase A will have no bearing on the Phase B competition outcome.

2.2. Programme Aim and Goals

The overarching aim of the AMR RD&D programme is to develop and demonstrate HTGR technology to reduce technical risk, maximise UK benefits by developing UK owned IP and have the option for further commercial HTGRs to potentially support the Net Zero target by 2050.

The programme is designed to identify and deliver the optimal technology demonstration with respect to maximising the impact that HTGRs could potentially have on achieving the UK's Net-Zero target by 2050, minimising the cost of energy produced by HTGRs, incentivising private investment in the development of HTGRs, maximising economic benefits to the UK and contributing to the levelling up agenda.

This leads to the following goals -

- Identify the most cost effective and expedient way to overcome market failures and incentivise private sector investment in HTGR technology as an option for supporting the Net Zero 2050 target.
- Identify innovative technologies that can be developed within budget and timescale constraints and in-line with Value for Money (VfM) principles, that could reduce the lifetime cost of HTGR systems, and develop these technologies to at least TRL7.
- Demonstrate that high temperature heat can be safely and efficiently extracted from HTGRs at various discrete temperatures (in accordance with likely use cases) and used to decarbonise heat demand from key sectors.
- Develop the UK supply chain, to deliver a HTGR Demonstration and underpin supply chain confidence towards commercialisation.
- Generate IP, skills, and knowledge to position the UK to take advantage of export opportunities associated with HTGR technology.

These goals form the basis of the Phase B objectives listed in **Section 3.1**.

2.3. Programme Structure

The overall AMR RD&D programme takes a three-phase “rolling wave” planning approach, where evidence from earlier phases is used to specify the detail of subsequent phases. Several projects are funded initially, with the number reduced at appropriate points as the programme matures as more evidence is known.

- Phase A is ongoing and due to conclude in early 2023. This is a pre-FEED phase where four reactor projects and two Coated Particle Fuel projects are being carried out to produce detailed plans for potential projects and encourage potential HTGR delivery consortia to form.
- Phase B is the subject of this guidance document. It is an open, competition-based programme designed to produce up to two HTGR Front-End Engineering Designs (FEED) mature enough to enter regulatory review, carry out associated research and development activities, and produce robust delivery plans for a potential Phase C. Phase B will conclude in February 2025.
- Phase C is subject to HMG decision-making in the context of the next spending review (SR25). Should it go ahead, it is envisaged that this phase will consist of detailed design, construction, and commissioning activities. It is envisaged that this phase will conclude in the early 2030s.

3. Phase B Overview

3.1. Aim and Objectives

The aim of Phase B is to progress up to two HTGR demonstration projects to **at least**² the point that they can enter the regulatory review process (either GDA Step 2 or direct site licence at the Grant Recipient's discretion)

The objectives of Phase B are listed below. These flow down from the overall programme goals listed in **Section 2.2**.

OBJECTIVE 1: Design Progression

By February 2025, develop two innovative HTGR Front-End-Engineering-Designs (FEEDs) to the point that they are ready for regulatory review (this can be measured against the requirements to enter GDA and progress through Step 2, or alternatively, the direct nuclear site licence and Environmental Permitting application processes).³

OBJECTIVE 2: Research and Development

Identify what essential, 'no regrets' Technology Development (TD) activities need to be carried out in parallel with and as part of the development of the selected HTGR design(s) to maintain the option of a Phase C schedule ending in the early 2030s. Then, develop this technology to the TRL needed to maintain the proposed Phase C schedule by February 2025.

OBJECTIVE 3: Phase C Delivery Plans

For each design, produce detailed cost estimates for Phase C of the AMR RD&D Programme as follows:

- a. OBC accuracy level⁴ by April 2024
- b. FBC accuracy level by February 2025
- c. By August 2024, develop project delivery plans that can meet the phase C down-selection minimum threshold.

OBJECTIVE 4: Skills and Capability

Establish the required skills and capabilities the UK supply chain sufficient to form a basis of expansion to deliver a HTGR demonstration and potential fleet.

3.2. Scope and Exclusions

The following items are included in the scope of the Phase B Grant Competition:

² BEIS are interested in opportunities for acceleration to maximise the potential impact HTGRs could have on the Net-Zero 2050 target. Applicants are encouraged to make these clear in their proposal.

³ The programme outputs have been made measurable by working to the GDA process requirements. **This does not imply that Grant Recipients will be required to use the GDA process as their approval route** – they are free to choose the most appropriate route for their Project.

⁴ Cost estimate accuracy terminology (OBC/FBC) can be found in **Section 3.4**

- Front-End Engineering Design (FEED) of HTGR reactor system(s) (where the ‘reactor system’ is defined as all system elements that will be subject to the consideration of the nuclear regulators) in the context of specific use cases (e.g., production of hydrogen, synthetic fuel, ammonia, or some other application).
- High-level specification of items outside the reactor system that directly effect the reactor system design.
- Selection of potential sites for the reactor system(s)
- Essential “no regrets” Technology Development (TD), including but not limited to addressing the TD challenges set out in **Section 3.2.1.**
- Detailed engagement with end-users to ensure that the demonstrator is developed in line with a specific use case and market need.
- High-level planning of fleet roll-out to ensure demonstrator is developed in line with a long-term strategic need.
- Engagement with the nuclear regulators to de-risk GDA Step 2, or equivalent (see **Section 3.3**)
- Engagement with BEIS to assist with general knowledge-capture activities (minimum 1 person-day per month for the duration of the project)

The scope above should be considered the minimum.

The following items are excluded:

- Non-reactor-specific fuel development activities (to be covered by a separate BEIS programme)
- Manufacturing, Construction, commissioning, and operation of the reactor (to potentially be covered in Phase C)
- Progression of non-HTGR technology families
- Commercialisation of AMRs
- Design or other development of down-stream end-use equipment outside of the reactor system.
- Funding for the nuclear regulators (to be provided separately by BEIS)
- Nuclear fusion technology (covered by STEP programme)

3.2.1. Technology Development Scope

Scope Definition

The specific details of the Phase B TD scope should be defined by Applicants in their proposal. Applicants should include TD in their proposed scope where any of the following are true:

- It is essential that the work is done in Phase B to maintain the potential Phase C schedule.
- It will remove significant risk by validating fundamental aspects of the design.
- Its outputs will be required to produce **Deliverable 16: Demonstration of Readiness for Regulatory Approval Process** (refer to **Section 3.5**) to the satisfaction of the nuclear regulators.

Applicants should give due consideration to the TD challenges listed below when defining their proposed scope. **However, they should not limit their scope to these challenges and should feel free to propose activities above and beyond these challenges, or not address one, some,**

or all of them. They will not be penalised in the assessment for doing this if they present strong evidence and coherent explanations in support of their proposal.

BEIS Identified Technology Development Challenges

Notwithstanding the above, BEIS have identified the following generic technology development challenges that Grant Recipients may need to address:

- Implications of using TRISO fuels of different types (physical and chemical forms, ambitions for high or highest burnup etc).
- Integrity of HTGR materials and civil engineering infrastructure including –
 - Mitigation of issues associated with thermally activated or accelerated degradation mechanisms (damage, creep, thermal ageing, environmental interaction mechanisms etc.)
 - Chemically activated failure mechanisms (primary coolant interactions steam ingress, steam side oxidation, etc.)
 - Performance of graphite in reactor and related waste issues, and other design for waste management decommissioning issues more generally
 - Implications of advanced manufacturing, digitalisation and construction techniques
- Development of codes and standards and assessment methodologies, particularly for helium facing HTGR mechanical and instrumentation components
- Development and or validation of modelling and simulation of reactor under normal and off-normal conditions, including delivery of safety through passive systems. Including the necessary testing facilities, including corrosion and thermal hydraulics.
- Qualification of HTGR Mechanical and Instrumentation and Control (I&C) systems and components to operate at base operating and accident conditions
- Development and qualification of new materials and or components to enable a potential commercial HTGR fleet to operate at higher temperatures, including potential condition-based monitoring equipment necessary to support this
- Validation of assumptions made on HTGR fuel routes including automatic systems and modern methods of analytical underpinning of fault analysis
- Operations models for the HTGR demonstrator.

In their proposal, Applicants should explain how they intend to address each of these challenges during their project. This may be through –

- Direct research done as part of their project
 - Incorporated into the demonstrator
 - Or alternatively, addressed through an additional ancillary package of work
- Access to information from elsewhere, including via the BEIS Knowledge Capture project
- Or some other means deemed appropriate by the Applicant

Alternatively, Applicants may state that one, some, or all of the listed challenges are not relevant to their project and explain clearly why this is the case and why the AMR RD&D programme goals (see **Section 2.2**) and the Phase B objectives (see **Section 3.1**) can still be met if the challenge is excluded. **Applicants will not be penalised for this in the assessment** provided they include compelling evidence in support of their assertions.

3.3. Delivery Approach

Up to two FEED+ projects will be supported in Phase B with up to £27.5m (excl. VAT) of funding each. Grant Recipients are required to provide a minimum level of match-funding in accordance with the guidance set out in **Section 5**. Beyond this, the extent to which they can provide match-funding will be considered in the assessment as part of **Criterion 7 – Value for Money** (refer to **Section 10**).

Successful projects will be expected to provide the deliverables listed in **Section 3.4** in accordance with the schedule set out in **Section 6**.

Applicants are actively encouraged to form relationships and develop collaborative bids to ensure that they have access to the necessary expertise to deliver the scope of work.

Applicants may also propose additional challenges in addition to those listed above.

3.3.1. Regulatory Engagement

The programme includes six regulatory engagement sessions with the Office for Nuclear Regulation (ONR) and the Environment Agency (EA). Each session is designed to provide the Grant Recipient with beneficial project-specific regulatory information to de-risk later assessment as part of regulatory approval processes.

The topic(s) for each session will be agreed in advance by the Grant Recipient and regulators. Each session will be 1 day supported by regulatory technical specialists as required (regulatory costs will be separately funded by BEIS).

3.4. Requirements

The deliverables shall be subject to the requirements set out below.

- Technical solutions shall –
 - Be classifiable as High Temperature Gas Reactor (HTGR) technology - where HTGR is defined as a gas-cooled nuclear fission reactor with an outlet temperature greater than 700°C.
 - Be designed to service a specific use case(s)
 - Incorporate best-practice design-for-construction including but not limited to modular design in context of intended component manufacturing and reactor siting locations
- Cost estimates shall be –
 - Produced in accordance with [HMG's Cost Estimating Guidance](#)
 - developed using the stated methodology relevant to the accuracy of the cost estimate being produced (SOC, OBC or FBC)
 - structured in a standard format to be agreed with BEIS

- Schedules shall be –
 - Developed in accordance with an established methodology from an authoritative body⁵
 - Be appropriately detailed to support the accuracy of the cost estimate
- Documents associated with the demonstration of readiness to enter regulatory approval processes shall be produced in accordance with the following standards subject to the proposed approval route:
 - BEIS Guidelines for [Entry to Generic Design Assessment for Advanced Nuclear Technologies: Instructions and Guidance for Requesting Parties](#)
 - Office for Nuclear Regulation (ONR) Guidance - [New Nuclear Power Plants: Generic Design Assessment Guidance to Requesting Parties](#)
 - Environment Agency (EA) Guidance - [GDA Guidance to Requesting Parties](#)
 - ONR nuclear licensing guidance - [Licensing nuclear installations](#)
 - Environment Agency Permitting Guidance - [Nuclear sites RSR: environmental permits](#)

3.5. Deliverables

Grant Recipients shall provide the deliverables listed below during their project. Additional deliverables may be agreed with individual Grant Recipient in the context of their specific scope.

Deliverable 1: SOC Budget and Schedule

This shall include -

- A budget for Phase C developed to the SOC level of accuracy (refer to **Section 3.4**)
- An accompanying schedule to underpin the budget.

Deliverables 3,5,7,10,14,&16: Checkpoint Submissions

These shall be maximum 10-page point-in-time snapshots of the content developed by the project up to the point of submission. Specific content shall be agreed between the Grant recipient and BEIS during the Phase B project initiation process.

Deliverables 2,4,6,9,11, & 15: Regulatory Touchpoint Submissions

Technical reports, no longer than 50 pages, and supporting presentation material no less than 4 weeks before each of the six regulatory engagement sessions (see **Section 3.3**). Grant Recipients and Regulators will agree the specific content of these submissions in advance and in accordance with the needs of the project to de-risk later assessment as part of regulatory approval processes.

Deliverable 8: OBC Budget and Schedule

As per Deliverable 1 but with a OBC level of accuracy

Deliverable 12: Phase C Project Initiation Document (PID)

Structured under the following headings:

⁵ For example, the Association for Project Management (APM), the Project Management Institute (PMI), AXELOS, or some other suitable body or methodology. The specifics shall be agreed between BEIS and the Grant Recipients as part of the project initiation process, in the context of the Lead Applicants existing established methodologies and processes.

- Background
- Project Definition
 - Purpose
 - Objectives
 - Scope
 - Product Breakdown Structure (PBS)
 - Deliverables
 - Constraints
 - Assumptions
- Phase C Business Case
 - Benefits
 - Options
 - Cost and Timescale (a high-level summary of the information presented in Deliverable 18)
 - Financing plan
 - Cost/Benefit Analysis
- Risk Analysis
 - Summary of Main Risks
 - Threats (with details of who they will be avoided, transferred, mitigated, or accepted)
 - Opportunities (with details of how they will be exploited, enhanced, shared, or accepted)
 - Risk Management Processes
- Roles and Responsibilities Resource Plan
- Any other headings deemed appropriate by the Grant Recipient

Deliverable 13 – Market Report

A report (max 10 pages) detailing –

- What engagement there has been with end users and what their requirements are for heat and electricity, temperature, price, reliability and availability, location, and proximity to the reactor.
- How representative this is felt to be for –
 - The UK as a whole
 - The potential global export market
- How this has informed the design of the demonstration and potential commercial fleet.

Deliverable 17: Demonstration of Readiness for Regulatory Approval Processes

Grant Recipients shall be expected to be able to demonstrate readiness to enter and progress through UK regulatory approval routes. It is expected that there is sufficient design detail to support entry to GDA and progress through Step 2 or the equivalent stages in direct nuclear Licensing and Environmental Permitting. Grant Applicants shall provide a plan for gaining regulatory approval including timescales and steps as well as a demonstration of the design readiness against regulatory expectations at GDA Step 2 or equivalent highlighting key areas of risk and mitigations.

Deliverable 18: FBC Budget and Schedule

As per Deliverables 1 and 8 but to the FBC level of accuracy.

3.6. Project Monitoring and Evaluation

BEIS will assign a (possible 3rd party) Monitoring Officer (MO) to each successful project. The MO will be the main point of contact during delivery. Grant Recipients are required to meet with their MO at project start to agree the delivery plan, the milestones, and the specific outputs that will be delivered, as well as an invoicing schedule. MOs will be responsible for reviewing evidence submitted as part of an invoicing claim before the invoice payment is approved.

Grant Recipients must raise risks and issues promptly with their MO as they arise. They are also required to submit written progress reports and meet with their MO monthly to discuss the project.

In addition to these monthly reviews, Grant Recipients will be required to complete the SICE (Science and Innovation for Climate and Energy) Quarterly Progress Meeting (QPM) form and host more in-depth reviews, involving a wider group of BEIS officials on a quarterly basis.

3.6.1. Key Performance Indicators (KPIs)

BEIS uses a standardised set of key performance indicator metrics within the Net Zero Innovation Portfolio (NZIP) to help assess the performance of all NZIP funded projects. These are detailed in **Table 1**.

Grant Recipients are required to –

- Work with BEIS to select all relevant KPIs to be tracked, measured, and reported against for their project.
- Build in-project data collection systems and reporting methods for all selected KPIs.

NZIP KPIs will be collected from all funded projects at the project start and at project close. Grant Recipients will also be required to provide a subset of KPI data in annual follow-up data collection for 3 years post project-completion, with focus on Technology Readiness Levels (TRLs), Commercial Readiness Levels (CRLs), follow-on funding, sales and expected long-term impact.

By submitting an application to this competition, Applicants agree that BEIS can hold their contact details for evaluation purposes for the duration of the competition, even if their bid is not successful. BEIS may, within that time, contact you to request your participation in an evaluation, exploring issues such as the application process or the development of your technology in the absence of BEIS funding. You are not required to participate in such an evaluation.

Please note that it may at times be necessary to make changes to the NZIP KPIs, data collection modes or frequencies. BEIS will endeavour to keep all changes to a minimum and communicate any implications to you via the Monitoring Officers in advance of collection.

Table 1 - SICE KPIs

KPI	KPI description	Example Metrics
KPI 1	Number of NZIP projects supported	<ul style="list-style-type: none">• <i>Project start and completion.</i>

KPI	KPI description	Example Metrics
KPI 2	Number of NZIP projects that have met objectives	<ul style="list-style-type: none"> Extent to which project objectives have been met to date Change in objectives and reasons for change
KPI 3	Number of organisations supported to deliver the project	<ul style="list-style-type: none"> Lead partner delivering the project: name, organisation size and number of jobs supported within the organisation to deliver the project. Other partner organisations involved in delivering the project as named on the Contract or Grant: name, organisation size and number of jobs supported within the organisation(s) to deliver the project.
KPI 4	Number of active contractual and non-contractual business relationships supported	<ul style="list-style-type: none"> Number of contractual relationships: name and type of contractual relationship. Number of formal non-contractual business relationships: name and type of non-contractual relationship Extent to which your organisation expanded its network of business relationships as a result of the project
KPI 5	Technology Advancement	<ul style="list-style-type: none"> Technology Readiness Levels (current and anticipated) Other technology improvement indicators: patents applied for or granted; academic, technical or non-technical publications generated and knowledge exchange events attended (such as conferences)
KPI 6i	Initial Financial Leverage to deliver project	<ul style="list-style-type: none"> Project funding structure: Amount in £m of BEIS, Other Public Sector and Private Funding.
6ii	Follow-on Funding secured	<ul style="list-style-type: none"> Amount of follow-on funding raised and the source (public or private).
KPI 7i	Reduction in energy costs	<ul style="list-style-type: none"> Scope and scale of impact on reducing energy costs Route to reducing energy costs
7ii	Increased energy efficiency/ Reduced energy demand	<ul style="list-style-type: none"> Scope and scale of impact on reducing energy demand/ increasing energy efficiency
7iii	Increase in energy system flexibility	<ul style="list-style-type: none"> Scope and scale of impact on energy system flexibility Route to increasing energy system flexibility
KPI 8	Commercialisation advancement	<ul style="list-style-type: none"> Commercial readiness levels (current and anticipated) Steps towards commercialisation incl. licensing agreements, commercial partnerships, product certifications etc.; national/ international standards passed UK and International sales secured and their value (£m)
KPI 9	CO2 emissions reductions	<ul style="list-style-type: none"> Scope and scale of project impact on carbon emissions Route to achieving carbon emissions reductions
KPI 10	Policy influence	<ul style="list-style-type: none"> Whether, how, and to what effect evidence from the project has informed policy development Whether projects have engaged in activities with industry or civil society

4. Progression to Phase C

BEIS envisages the selection of one project to progress to Phase C (**subject to HMG decision making under the next spending review**). If this goes ahead, this project will be selected via a down selection of the successful Phase B projects. The assessment criteria for this competition will broadly consider the following:

- Delivery capability
- Maturity and suitability of technology
- UK Benefit
- Ongoing relevance in relation to the UK's strategic objectives
- Value-for-Money (VfM) and affordability
- Social Value

More detail on this potential down-selection competition will be considered in due course.

5. Phase B Grant Funding

5.1. Budget

Up to **£55m** is available in Phase B to provide up to **two projects** with up to **£27.5m** each excluding VAT⁶. Grant Recipients shall provide match funding to cover the remainder of their project costs in accordance with the guidance set out in **Section 5.1**.

BEIS may at its discretion choose not to make an award, increase the available budget, or allocate an award that is less than the total budget depending on the quality of applications.

Projects should complete by **28th February 2025**. This budget is only valid until **31st March 2025** - costs incurred after this date cannot be reimbursed by this grant funding.

5.2. Subsidy Requirements

5.2.1. Subsidy Control

This competition will support successful applicants through subsidies awarded in the form of grants towards the eligible costs of the proposal. Since 1 January 2021, public authorities must comply with [the UK's international commitments on subsidies](#) in the UK-EU TCA, and other trade agreements, as well as the WTO rules on subsidies. Once in force, transparency requirements under the [Subsidy Control Act](#) will need to be complied with (where applicable).

The types of costs that applicants can claim grant support for are set out in Annex 1, along with the maximum level of grant funding that they can receive which may differ by organisation type, size, and location.

5.2.2. Rules for Subsidies in Scope of the Northern Ireland Protocol

The rules set out in this document apply equally to all applicants from England, Wales, Scotland, and Northern Ireland that are eligible to receive funding. Grants awarded to applicants and partner organisations from Northern Ireland will be in scope of Article 10 (State aid) of the Northern Ireland Protocol. Any GB applicants with a genuine and direct link to Northern Ireland will also be subject to Article 10. Where Article 10 applies, the grants will need to be [State aid compliant](#).

Any grants awarded under Article 10 shall be classified as state aid rather than subsidy. Grants within scope of Article 10 will be granted under the EU's General Block Exemption Regulation (GBER) to ensure they are [State aid compliant](#). If a business or any undertaking has been incorrectly in receipt of grant funding and this was in scope of Article 10, that undertaking is likely to be required to repay any subsidy received to the value of the gross grant equivalent.

⁶ Grant funding is outside the scope of VAT so it cannot be charged on top of submitted costs. If they incur non-recoverable input VAT costs, they cannot pass these on to BEIS.

5.2.3. Grant Intensity Requirements

The minimum amount of match funding that Grant Recipients will be required to provide varies in accordance with the size of their organisation. **Table 2** details the definition of small, medium, and large enterprises, and the **minimum** match funding that projects in each of these categories will be required to provide.

Lead Applicants must provide evidence that they will be able to provide the minimum threshold to be eligible for the competition (refer to **Section 9**). It is expected that most Grant Recipients will provide more match-funding than the mandated minimum. The amount of match funding provided above the minimum will be considered by assessors whilst scoring **Criterion 5: Value-for-Money** (refer to **Section 10**).

Table 2 - Company Size Definitions and Match-Funding Requirements

Enterprise Category	Definition			Minimum Match Funding Required
	Headcount	Turnover	Balance Sheet	
Small	50 ≤	AND ≤£9m £9m > ≤£45m >£45m	OR ≤£9m £9m > ≤£39m >£45m	20%
Medium	50 > ≤250			25%
Large	>250			35%

The total minimum match funding required for the Project shall be the sum of the minimum requirement for amounts required from each organisation in the Applicant Group.

Compliance with grant intensity levels is a requirement of this Competition and the risk of non-compliance rests with the Grant Recipient. It is crucial that these rules are considered while the application is being developed as any errors at this stage may result in BEIS offering only a reduced level of funding, or in Grant Recipients being required to repay their grant.

5.1. Further Public Funding

In applying to this Competition, you must state if you are applying for, expect to receive, or have received in the past 5 years, any funding for your Project from public authorities in the UK or the European Union (EU) or its agencies. Any other public funding pertaining to the specific scope of the proposed project to be funded by this grant, will be cumulated with BEIS funding to ensure that the public funding limit and the grant intensity levels are not exceeded for the project.

Applicants must establish where they fall within the grant intensity rules before submitting applications. BEIS requires applicants to notify them of any change to their situations or circumstances during the Project.

If an applicant breaches the grant intensity requirements for this competition, for whatever reason, BEIS requires repayment of any grant received, including interest, above that which was due. In this situation applicants will be required to repay any funding received. It is also important to ensure that the total grant funding for the Project from public sources (including from the European Commission) does not exceed the relevant permitted grant intensity levels.

As part of the assessment process, the added value and additionality of public funding will be tested. Hence, Applicants will need to demonstrate why public funding is required to deliver this Project.

5.2. Payments

BEIS will not make payments in advance of need and typically makes grant payments in arrears on satisfactory completion of agreed milestones and deliverables. BEIS therefore anticipates making payment after delivery of Deliverables that meet all relevant quality content and format requirements.

BEIS understands, however, the difficulties which small businesses may face when financing this type of project. BEIS will explore cash flow issues with Lead Applicants as part of developing the financial and milestone profile during the Grant Award process. BEIS will offer flexibility in terms of profiles and payments, within the confines of the requirements for use of public money within which it operates.

5.3. Financial Viability checks Post-Grant Award

In addition to the due diligence checks set out in **Section 7.4**, Grant Recipients must provide to BEIS all subsequent year end accounting data – audited or alternative as set out above – within 30 days of accounts being issued, and this will be subject to the same scrutiny as the pre-contract due-diligence. Grant Recipients should also immediately notify BEIS in writing, where they believe, on the balance of probabilities, that they will not be able to access sufficient match funding to complete the Project.

BEIS reserves the right to cease payment of allocated grant where it has reasonable grounds to believe that the Grant Recipient is unlikely to be able to meet its future match-funding commitment.

6. Schedule

An indicative schedule for the grant competition and delivery of the successful projects is shown in **Table 3**. The project delivery milestones may be negotiated and tailored to the specific needs of individual projects.

Table 3 - Phase B Competition and Delivery Schedule

Milestone	Date
Grant Competition	
BEIS publish Competition Guidance Notes and open Q&A portal	13 th December 2022
Briefing event	w/c 16 th January 2023
Deadline for Applicant questions	14:00, 23 rd January 2023
Deadline for online registration	14:00, 27 th January 2023
BEIS publish responses to Q&A	w/c 6 th February 2023
Deadline to submit bids via online application form	14:00, 5 th March 2023
Applicants notified of outcome	From w/c 10 th April 2023
Grants awarded and delivery started	From May 2023
Project Delivery	
Project Kick-Off Meetings	From May 2023
Deliverable 1: SOC Budget and Schedule Deliverable 2: Regulatory Touchpoint Submission 1	August 2023
Regulatory Technical Engagement 1 Deliverable 3: Checkpoint Submission 1	September 2023
QPM1	September 2023
Deliverable 4: Regulatory Touchpoint Submission 2	November 2023
Regulatory Technical Engagement 2 Deliverable 5: Checkpoint Submission 2	December 2023
QPM2	December 2023

Milestone	Date
Deliverable 6: Regulatory Touchpoint Submission 3	February 2024
Regulatory Technical Engagement 3 Deliverable 7: Checkpoint Submission 3	March 2024
QPM 3	March 2024
Deliverable 8: OBC Budget and Schedule Deliverable 9: Regulatory Touchpoint Submission 4	May 2024
Regulatory Technical Engagement Meeting 4 Deliverable 10: Checkpoint Submission 4	June 2024
QPM 4	June 2024
Deliverable 11: Regulatory Touchpoint Submission 5	August 2024
Deliverable 12: Phase C PID Deliverable 13: Market Report Regulatory Technical Engagement 5 Deliverable 14: Checkpoint Submission 5	September 2024
QPM 5	September 2024
Deliverable 15: Regulatory Touchpoint Submission 6	November 2024
Regulatory Technical Engagement 6 Deliverable 16: Checkpoint Submission 6	December 2024
QPM 6	December 2024
Deliverable 17: Demonstration of readiness for regulatory approval processes Deliverable 18: FBC Budget and Schedule Project Closure meeting	31 st March 2025

7. Application, Assessment, and Award

The Competition process is summarised in **Figure 1**. All details relevant to each stage are set out below.



Figure 1 - Competition Process

7.1. Application

Details of the application process are as follows:

- **Registration:** Applicants should register via the [online registration portal](#). The deadline for registration is **14:00, 27th January 2023**. However, please register as soon as possible to receive relevant competition updates.
- **Questions about the Competition:** If Applicants have any questions on the competition process or require clarifications on the eligibility criteria after reading these guidance notes, they should submit them via the [online Q&A portal](#). All questions should be submitted as soon as possible but no later than **14:00, 23rd January 2023**. Questions submitted after this date may not be answered.

BEIS will reply to any queries which, in their judgement, are of material significance through an anonymised Q&A sheet published on the [AMR RD&D webpage](#) **during the week commencing 6th February 2023**, so there is sufficient time to include the responses in the applications. All applicants should take these replies into consideration when preparing their applications, they will be evaluated on the assumption that they have done so.

- **Submission of Application:** All application documents must be submitted via the [online application form](#). In the form there are opportunities to upload relevant supporting documents in addition to the mandatory evidence. **BEIS will not accept any submissions which are not submitted via the online application form.**

The full application must be submitted online by the deadline: **14:00, 31st March 2023**. The [online application form](#) will be closed for submissions after this time. **BEIS will not accept any submissions, amendments to submissions or any additional project information received after this deadline.**

- **Submission Content:**

Applications will consist of the following:

- Completed online application form with written sections completed and the following attachments:
 - Project Organogram
 - CV Pack

- Details of Design
- Long-term schedule
- Project Schedule
- Risk Register
- Spending Profile and Recruitment Plan
- BEIS Standard Costing Breakdown Form
- Other optional attachments where prompted
- Declaration 1: Statement of Non-Collusion
- Declaration 2: Form of Tender
- Declaration 3: Conflict of Interest
- Declaration 4: Standard Selection Questionnaire
- Declaration 5: Code of Practice
- Declaration 6: The General Data Protection Regulation Assurance Questionnaire
- Declaration 7: Security Questionnaire
- Copy of the Lead Applicant's Equality, Diversity and Inclusion Strategy
- A security plan (no more than 10 pages) detailing how they plan to comply with UK specific security requirements. This must address the specific security requirements and risk mitigation arising from their proposal. It should also include how security will be considered for the duration of the project to protect its key information and assets while the proposal is being developed.
- Optional: additional letters of support or other supporting information can also be submitted in the final section before you submit your online application form. ⁷

Applicants should endeavour to answer all the questions in the application in full. Some questions will be 'required fields' in the form and you will not be able to proceed to the next section until these questions are complete. Incomplete applications and any containing incorrect information may be rejected. However, BEIS may, at its discretion, request clarification before making a final decision. Any applications or supporting documentation received after the application deadline will not be considered.

Applicants are advised to draft their application offline, and ensure they leave sufficient time to copy their application to the online form and answer all the compulsory questions. Applicants are also advised to make an early start on the application process as it may take considerable time, and to use the Q&A process to clarify anything they are unsure about. **The advertised deadline will not be extended, and no submissions will be accepted after the deadline.**

- **Submission Costs:** Applicants will **not** be entitled to claim for any costs or expenses that they incur in preparing their application, regardless of whether their application is successful.
- **Collaborative/ Solo-bid:** Organisations can lead a collaborative bid (with subcontractors and/or consortium partners) or put forward a solo bid⁸. In any case, BEIS shall only issue grant awards to a single organisation (the Grant Recipient) who would then be responsible for contracting with others.

⁷ Please be aware that any additional material submitted that has not been specifically requested may not be considered in the assessment

⁸ However, organisations are strongly encouraged to ensure that they have all of the required expertise and are therefore encouraged to form consortia.

- **Grant Recipient:** Applications must demonstrate they have a UK based organisation positioned as the Grant Recipient. Organisations based outside of the UK are welcome to support applications as subcontractors or consortium partners.
- **Multiple Applications:**
 - Applicants may not submit more than one application as the Lead Applicant (the prospective Grant Recipient). However, they are permitted to support multiple applications as a subcontractor / consortium partner organisation
 - Where subcontractors/ partner organisations are present in multiple applications –
 - It shall be the duty of the Lead Applicant/ Grant Recipient to manage arrangements with regards to conflicts of interests of subcontractors and/or partners, including but not limited to subcontracts support other applications.
 - The Lead Applicant/ Grant Recipient shall provide assurance that the subcontractor(s) and/ or partner organisations have sufficient resources to successfully deliver all work packages.
 - Where subcontractors/ partner organisations are successful in more than one application, the Grant Recipient shall ensure that funding is not double counted for any given item of scope.
- **Tender Validity:** Phase B applications shall be valid for a minimum of 120 calendar days from the submission deadline (**14:00, 31st March 2023**)

7.2. Assessment

Applications will initially be considered against the competition eligibility criteria detailed in **Section 9**. Eligible applications will be appraised against the assessment criteria detail in **Section 10**.

Each application will initially be reviewed by at least three assessors and given a score of 1 to 5 (in accordance with the guidance in **Section 10.2**) against each criterion. Applications will then be subject to moderation until the assessors can agree to converge on a score for each criterion. An overall score of 0% to 100% will then be calculated in accordance with the stated weightings.

Applications will be eliminated if –

- they receive a score of 1 against any given criterion,
- or they receive an overall score of less than 60%.

The application form and guidance notes are designed to inform Applicants of the information required to be provided to BEIS in order for applications to be assessed.

Despite scoring BEIS reserve the right to take a portfolio approach to maintain a range of technical options should this be appropriate and more aligned to the overall aims and goals of the programme.

7.3. Notification and Feedback

Lead Applicants will be informed by email whether their application has been successful, subject to compliance with the terms and conditions of the Conditional Grant Offer (conditional on successfully passing due diligence).

A short summary of key feedback will be provided to all Lead Applicants. This feedback will be based on the comments of technical assessors. No additional feedback will be provided and there will be no further discussion on the application.

The feedback from the assessors is intended to be constructive. Comments are not a checklist of points which must be answered or argued in a resubmitted application as the assessors/requirements may be different and it is your decision as to whether you act on the suggestions made.

BEIS is not required to award any applicant a Grant Agreement of any specific amount or on any particular terms. BEIS reserves the right not to award any grant agreements.

7.4. Commercial Due Diligence

BEIS will undertake financial viability checks on all provisionally successful Applicants. This assessment will directly impact what (if any) Grant Funding will be offered. It is critical that public funds support a viable business model and a credit worthy Applicant.

Applicants must provide details of **all** consortium partners and subcontractors in the [Online Application Form](#). Where there is more than one organisation in the Applicant Group, required financial information (see below) shall be provided for any entity who is forecast to deliver at least 25% of the Contract by value – including subcontractors.

Applicants may be asked to respond to clarification questions linked to these financial viability checks and, where relevant asked to provide satisfactory evidence of how identified financial risks are being actively managed and mitigated.

The Applicant's/ Project's Financial Viability will consider (amongst other things) whether the Applicant is able to demonstrate a robust business plan and financially sustainable business model in respect of the relevant Project. Tests of financial viability will be conducted in line with industry best practice. They may include (but are not limited to):

- whether an Applicant/Project/ultimate parent company has sufficient liquidity (it is capable of covering its short-term commitments);
- whether an Applicant/Project/ultimate parent company is financially autonomous (it can cover its debt costs); and
- whether an Applicant/Project/ultimate parent company is solvent (it can cover its medium and long-term commitments).

BEIS recognises that arrangements in relation to subcontractors may (within limits) be subject to future change. Applicants should therefore respond in the light of the arrangements as currently envisaged and are reminded that any future proposed changes must be submitted in writing to BEIS for consideration on a case-by-case basis.

Required Financial Information

Checks will include reviewing the latest independently audited accounts filed on the Companies House database. Where a company or organisation is not required to file accounts with Companies House, other financial information will be requested to enable an appropriate financial viability review to be undertaken. This might include:

- A copy of last two years accounts as filed with Companies House; or
- A copy of last two years accounts – if not obliged to file with Companies House; or
- A statement of the turnover, Profit and Loss Account/Income Statement, Balance Sheet/Statement of Financial Position and Statement of Cash Flow for the most recent year of trading for this company or organisation
- Alternative means of demonstrating financial status if any of the above are not available (for example, forecast of turnover for the current year and a statement of funding provided by the owners and/or the bank, charity accruals accounts or an alternative means of demonstrating financial status).

If you are bidding as a new Project company, we will review letters of support from Project partners / investors and may also review the financial statements of each partner.

Parent Company Guarantees

Where an applicant is a special purpose vehicle (SPV), BEIS will require a parent company guarantee(s) (PCG) from relevant companies or organisations. BEIS shall accept this as satisfying the applicant's financial viability checks subject to the necessary financial viability checks being performed on the parent company to BEIS' satisfaction.

BEIS may also, at its discretion require PCGs or other satisfactory mitigations to be put in place in relation to other provisionally successful Applicants, ahead of contract award. Acceptable mitigations may include but are not limited to those set out in Section 3 of the Government and Commercial Function's Assessing and Monitoring the Economic and Financial standing of Bidders and Suppliers (publishing.service.gov.uk).

Where provisionally successful applicants are unable to provide mitigations to BEIS' satisfaction they will be excluded from the Competition.

Applicant Contribution

Grant funding will be supplemented by external (non-HMG) investment according to the required grant aid intensities, as outlined in **Section 5.1**.

The Applicant should include details regarding the sources of funding for the Project and how they intend to pay for it (including in respect of any counterfactual). This must demonstrate the relative size of HMG's requested contribution (see above re significant contribution).

Critically, Applicants will need to demonstrate how public funding will help bridge any gap, and that it is the minimum funding required for the Project to go ahead.

Before Project start, BEIS will ask for evidence that the relevant funding mechanisms are in place to manage cash flow across the life of the Project. This could include letters of credit or other such mechanisms. We do not expect Grant Recipients to have cash deposits to cover the entirety of the Project at the start. However, if you do not complete your Project due to cash flow problems that could have been anticipated and managed, we may request repayment of any grant already issued.

7.5. Security Due Diligence

BEIS will carry out security due diligence prior to awarding any contracts. Applicants must provide a security plan, of no more than 10 pages detailing how they plan to comply with UK specific security requirements and risk mitigation arising from their proposal. It should also include how security will be considered for the duration of the project to protect its key information and assets while the proposal is being developed.

7.6. Grant Award

Projects are expected to start around **May 2023** and run through to **28th February 2025**⁹.

Grant Funding Agreement terms: The Grant Funding Agreement shall be based on the BEIS Grant Funding Agreement Terms and Conditions as detailed in **Annex 1**. BEIS do not envisage negotiating changes to these.

Before grant agreements are signed, there will be an opportunity for successful Applicants to discuss the grant agreements at a meeting with an official from BEIS. The official will explain the terms and conditions and respond to any queries which the applicant may have at this stage. This meeting is not intended to be an opportunity to negotiate the agreement.

Note: BEIS are not required to award any applicant a grant of any particular amount or on any particular terms. BEIS reserves the right not to award any grants, if BEIS are not satisfied by the applications received or if the funding assigned to the scheme is required for other purposes.

7.7. Publication of Results

Grant funding involves a high degree of risk–benefit sharing. In return for provision of funding and non-financial support, BEIS expects to be able to use and share results and outputs of the projects with other government departments, and on the government website (gov.uk).

BEIS also wishes to publicise details of the award recipient(s) after the competition closes. Therefore, on or after issuing a Grant Award, BEIS will publish the following information:

- Identity of the Grant Recipient, its consortium partners, and major subcontractors
- Project summary information including aims and expected outcomes of the project and location of the project (Applicants will be asked to provide a public-facing project summary in the application form – any changes to this will be agreed with the Applicant prior to publication).
- Total award value

Following completion of the funded projects, BEIS may publish a summary of the funded activities and the outcomes achieved on its website. BEIS may also revisit projects later and publish an evaluation report for the programme.

⁹ Start dates may vary depending on number of applications received or any due diligence issues.

BEIS recognises the need to maintain confidentiality of commercially sensitive information and will consult Grant Recipients regarding the nature of information to be published.

Any organisation that wishes to publicise its project, at any stage, must contact the Grant Manager or their Project Monitoring Officer at BEIS for approval.

8. Conflicts of Interest

The BEIS standard terms and conditions of the Grant Agreement include reference to conflict of interest and require Applicants to declare any potential conflict of interest to the Secretary of State. Conflict of interest is defined as the presence of an interest or involvement of the bidder, subcontractor (or consortium member) which could affect the actual or perceived impartiality of the research or analysis.

Where there may be a potential conflict of interest, Applicants should design working arrangements such that the findings cannot be influenced (or perceived to be influenced) by the organisation which is the owner of a potential conflict of interest. For example, consideration should be given to the different roles which organisations play in the research or analysis, and how these can be structured to ensure an impartial approach to the Project is maintained.

The process by which conflict of interest is managed in the funding application is as follows:

- During the bidding process, Applicants may contact BEIS to discuss whether their proposed arrangement is likely to yield a conflict of interest.
- Lead Applicants must sign and return **Declaration 3** (this is contained in the [Online Application Form](#) and is included for reference in **Annex 2**) to indicate whether any conflict of interest may be, or be perceived to be, an issue. If this is the case, the Lead Applicant should give a full account of the actions or processes that it will use to ensure that conflict of interest is avoided. In any statement of mitigating actions, bidders are expected to outline how they propose to achieve a robust, impartial and credible approach to the project.
- When bids are scored, this declaration will be subject to a pass/fail score, according to whether, on the basis of the information in the proposal and declaration a conflict of interest remains.
- Failure to declare or avoid conflict of interest at this or a later stage may result in exclusion from the Competition, or in BEIS exercising its right to terminate any grant agreement awarded.

9. Does the Eligibility Criteria

To be eligible for funding, projects must conform to the criteria set out below. The corresponding questions that are asked in the [online application form](#) are shown in **bold blue**. The responses to the eligibility questions are either 'yes or no'. If you answer 'no' to any of the questions your proposal will be removed from the assessment process.

In the event of any differences between the application form and this Grant Competition Guidance, the Grant Competition Guidance shall take precedence.

1. Security

HMG reserve the right to disqualify any bid for a project that would in any way present a security concern to the United Kingdom. All parties in the bid must be associated with a country that is party to the Treaty on Non-proliferation of nuclear weapons and have signed and ratified either a Voluntary Offer Agreement or a Comprehensive Safeguards Agreement, and a Small Quantities Protocol, or an Additional Protocol with the International Atomic Energy Agency. The Grant Recipient, Partner organisations, and subcontractors must not be associated with a country that has been sanctioned for any reason including for infringement of any of the above.

Eligibility Question: Does your application satisfy HMG's security requirements?

2. UK Benefit

BEIS can only fund activities that provide Value-for-Money (VfM) to the UK taxpayer. The majority of the project's activities (as measured by the spend of eligible project costs) must be carried out in the UK, the Grant Recipient must be based in the UK, and the funding must be used to develop technology that will provide long-term UK benefit.

Eligibility Question: Will the majority of the work in Phase B take place in the UK?

Eligibility Question: Is the Grant Recipient based in the UK?

Eligibility Question: Is the funding to be used primarily in pursuit of generating UK-Owned IP?

3. Technology

The proposed solution must progress High Temperature Gas Reactor (HTGR) technology, where HTGR is defined as a gas-cooled nuclear fission reactor with an outlet temperature greater than 700°C.

Eligibility Question: Is your proposed project designed to progress HTGR technology?

4. Innovation & Commercialisation

These Grant Awards are to support the development of innovative technology. These innovative technologies must not have previously been tested in the market or commercialised.

Eligibility question: Can you confirm that your proposed demonstration solution has not been previously tested in the market or commercialised?

5. Grant Size

The total funding available for each project is up to **£27.5m** each excluding VAT¹⁰. Grant Recipients should provide match funding to cover the remainder of their project costs in accordance with the guidance set out in **Section 5.1**.

Eligibility question: Is your proposed project costed within the budget limits?

6. Match-Funding

Provision of match-funding is a requirement of this funding. A minimum level is required and applications will be appraised on the amount that they can provide above the minimum as part of the Value-for-Money (VfM) assessment (refer to **Section 5.1**)

Eligibility question: Are you able to provide at least the minimum level of match funding in accordance with the guidance set out in Section 5.1?

7. Eligible project costs

BEIS will only pay eligible expenditure incurred by the Grant Recipient in accordance with Section 5 of the Grant Funding Agreement (refer to **Annex 1**).

Eligibility question: Do your project costs only include those eligible under the terms and conditions of the Grant Funding Agreement?

Eligibility question: Do you confirm that you will only use the funding to cover costs directly incurred during the development of these specific funded activities?

8. Project end date

All Phase B deliverables must be submitted and accepted by 28th February 2025. Activities carried out beyond this date will not be funded.

Eligibility question: Will you complete the project and submit all deliverables by 28th February 2025?

9. Multiple Applications

Organisations may not submit more than one application as the Lead Applicant (the prospective Grant Recipient). However, they are permitted to support multiple applications as a prospective subcontractor / partner organisation.

Eligibility Question: Do you agree to the competition entry limitations with regards to multiple applications?

¹⁰ Grant funding is outside the scope of VAT so it cannot be charged on top of submitted costs. If you incur non-recoverable input VAT costs, you cannot pass this on to BEIS.

10. Additionality

This Grant Funding can only be used to fund research and technology development activities that would otherwise not progress.

Eligibility question: Can you confirm that these activities would not progress without this Grant Funding?

Eligibility question: Can you confirm that these activities are not already being funded by any other public or private organisation?

11. Conflicts of Interest

All potential conflicts of interest must be mitigated in accordance with the guidance set out in **Section 8**.

Eligibility question: Have you declared all potential conflicts of interest (if any)?

Eligibility question: If relevant, have you designed suitable plans to fully mitigate all potential conflicts of interest?

10. Assessment Criteria

The Assessors will consider each proposal in terms of its suitability to meet the Phase B objectives set out in **Section 3.1** and the extent to which they align with the overall aim and goals of the AMR RD&D Programme as set out in **Section 2.2**. Scoring will be determined in accordance with the criteria set out below.

10.1. Scoring Criteria

Criterion 1 – Cross-Functional Delivery Capability and Expertise

Weighting: 25%

Assessors will appraise the skills and capabilities of the Applicant Group in respect of –

- Their potential to successfully deliver on the Phase B objectives and overall AMR RD&D Programme goals
- Their potential to scale to deliver potential future phases (Phase C and/or FOAK and/or a NOAK/commercial fleet)

Applicants should submit the following evidence in support of their application:

Item 1.1: Written Statement (max 2000 words) including the following:

- Short company biographies for the Grant Recipient, all consortium partners, and all major suppliers.¹¹
- Descriptions of the roles and responsibilities each of the organisations mentioned above will play in the project and what evidence there is to show that they can carry out these roles effectively.
- Details of how the following Organisational Roles¹² will be represented during the project (this could be either through direct representation the Applicant Group, or in some other way Applicants deem appropriate). Individual organisations can represent multiple roles if deemed appropriate by the Applicant):
 - Developer
 - Licensee & Permit Holder
 - Requesting Party
 - Owner
 - Operator
 - Vendor / Technical Authority
 - Engineering, Procurement, Construction (EPC) Contractor
 - Independent Third Party Inspection Agency
 - End User / Customer
 - Any other Organisational Roles not listed above

¹¹ In this section, Lead Applicants may use their discretion to decide which suppliers, if any, they wish to list as major contributors in support of their application. However, they must list ALL suppliers in the List of Organisation attachment at the end of the application form.

¹² Refer to the definition in the Glossary of Terms & Definitions

- Details of the strength of relationships between the organisations in the consortium and/or supply chain (whether contracts are in place, whether they have worked together on previous projects etc.)
- How they will scale their team and access to suitably qualified and experienced personnel as the project progresses, and how you will account for the high demand on the workforce from other nuclear projects.
- Details of how suitably qualified and experienced personnel will be onboarded to the project in consideration of the current high demand on the nuclear workforce

Item 1.2: Project Organogram (attachment) showing.

- The reporting structure and relationships between the organisations in the consortium and supply chain
- The names of all personnel in key roles

Item 1.3: CV Pack (attachment) detailing the experience, skills, and qualifications of all personnel in key positions in the project.

Item 1.4: Optional attachment containing relevant contracts, LOIs, etc. to demonstrate the strength of relationships between the various parties.

Criterion 2 – Technical Solution

Weighting: 20%

Assessors will appraise the technical merits of the proposal in respect of its suitability to achieve **Objectives 1 & 2** and overall AMR RD&D Programme goals

Applicants should provide the following evidence:

Item 2.1: Written statement (max 2000 words) including -

- A technical overview of their proposed demonstration including -
 - Power output (in MW_{thermal})
 - Outlet temperature
 - How their proposed demonstration is a technologically innovative proposition
 - How their demonstration would incorporate best-practice design-for-construction including but not limited to modular design in context of intended component manufacturing and reactor siting locations
- The main technical challenges they will need to overcome
- The main technical risks associated with their design and how they intend to mitigate these
- An explanation of how they will address the Development challenges set out in Section 3.2.1, including details of the scope they will carry out, and why this is appropriate.
- Any other technical information that the Applicant deems important

- Details of where their demonstrator will be sited (or options that they are considering) and what steps they will take to secure a site in time to enter the regulatory review process
- Regulatory considerations -
 - Details of what (if any) engagement they have had with the UK regulators.
 - Details of the main safety (nuclear and conventional), environmental, safeguard and security challenges that will need to be addressed during the project
- Additionality¹³ –
 - The extent of the work that would not be done without the Grant funding.

Item 2.2 Attachment showing details of the Demonstrator design –

- Illustrative graphics (e.g., images from concept models, design drawings, storyboards, etc.)
- Details of the TRLs for the main systems and components -
 - Now
 - After Phase B
 - After a potential Phase C
 - Any other details deemed relevant by the Applicant

Criterion 3 – Strategic Relevance

Weighting: 30%

Assessors will appraise the proposed demonstration in respect of its ability to develop a solution in line with end-user requirements and a substantive market need, that could enable the option for a commercial FOAK/fleet that could in turn have a significant Net-Zero impact.

Applicants should provide the following evidence:

Item 3.1: Written statement (max 2500 words) including details of -

- What engagement (if any) they have done with potential end-users and how they have used this feedback to shape their proposal
- The Demonstrator use case, including -
 - The specific use-case(s) that the proposed Demonstrator will be designed to service
 - Who the use case is likely to be for the Demonstrator, and who the end user is likely to be
 - How will ensure their design stays in line with end-user requirements as their project progresses
- How their project would maximise the generation of UK owned IP (e.g., by enabling export opportunities)
- How would the IP produced provide ongoing long-term benefit to the UK

¹³ Applicants should not that this Grant Funding can only be used to fund activities that would otherwise not progress. Proposals with no, or very limited, additionality will be disqualified in the eligibility assessment (refer to Section 9, Criteria 11). Proposals not disqualified in the eligibility assessment will be scored here according to the extent of the additional scope.

- How they will accelerate the option for HTGRs to be part of the UK's energy system (and hence maximise their potential Net-Zero impact) by progressing their project at pace including –
 - Confirmation that they will be able to complete all the required FEED+ scope in the time available
 - If there is any additional scope that could be completed during Phase B to bring forward the date that the Demonstration would be completed
 - The soonest realistic end date for a potential Phase C (first criticality) and what evidence they have to confirm that this is realistic
 - Why their Demonstration is optimal with respect to enabling the option of impactful HTGR technology in the shortest time possible.
- Nth-of-a-Kind (NOAK) commercial product / fleet that the Demonstration would enable, including -
 - How and why the Demonstration will enable the NOAK
 - The market that the NOAK will service
 - The size of that market and the potential revenue
 - The potential rollout schedule for the NOAK fleet
 - The potential impact that the NOAK fleet could have on the UK's Net-Zero 2050 target
- Why the technical specification (size, temperature, etc.) for their Demonstrator has been chosen in respect of its suitability to enable a commercial FOAK as soon as possible including –
 - How close the technical specification of the Demonstrator will be to the enabled FOAK commercial product
 - What, if any, additional work above and beyond the Demonstration would need to be done before a project to develop a commercial FOAK could be initiated.
- What export opportunities there would be for an enabled commercial product

Item 3.2: Attachment showing a schedule starting with Phase B, moving through a potential Phase C, and further showing a potential commercial fleet roll-out profile ending in 2050.

Item 3.3: (Optional) Attachment containing evidence of support from potential end-users

Criterion 4 – Project Management Capability

Weighting: 5%

Assessors will appraise the Lead Applicant's ability to appropriately control and deliver the project

Applicants should provide the following evidence:

Item 4.1: Written statement (max 800 words) including -

- A list of relevant internal quality management processes, work instructions
- Details of any relevant accreditations (e.g., ISO 9001)

- Details of the main assumptions, dependencies, and constraints associated with the proposed project
- Any relevant commentary to further explain the information presented in items 4.2, 4.3, & 4.4

Item 4.2 Attachment showing baselined project schedule presented in the format that will be used to manage the project

Item 4.3 Attachment risk register, highlighting the main project risks, presented in the format that will be used to manage the project, including risks related to regulation and permitting

Item 4.4 Attachment showing forecast spending profile and recruitment schedule

Criterion 5 – Value for Money (VfM)

Weighting: 10%

Assessors will appraise the amount of value that UK taxpayers would receive in exchange for the funding.

Applicants should provide the following evidence:

Item 5.1 – Completed BEIS standard costing breakdown form (attached to the application form)

Item 5.2: Written statement (max 500 words) including details of -

- The assumptions underpinning the costing provided in item 5.1 and the methodology used to produce it.
- The amount of match funding provided that would be provided and who it would be provided
- Why the scope would not progress without this funding (additionality)¹⁴

Item 5.3 (optional): Additional evidence in support of Applicants ability to obtain match funding for the project (e.g., a letter from an investor)

¹⁴ Applicants should note that limited additionality may mean the application is ineligible in accordance with **Section 9 Criteria 10**

Criterion 6 – Social Value

Weighting: 10%

Assessors will appraise the social value that the proposed project would produce for the UK.

Applicants should provide the following evidence:

Item 6.1: Written statement (max 1000 words) detailing how their project would -

- Support jobs and skills in the UK
- Increase UK supply chain resilience and capacity
- Improve workforce equality

Note: Applicants should focus on the social value that would be added by this proposed project specifically – not on activities conducted by their organisation in general.

10.2. Scoring Guidance

Applications will be scored in respect of the five scoring categories set out below.

Score	Description
1	Not Satisfactory: There is no evidence to very little evidence that the criterion has been satisfactorily addressed and major omissions are evident.
2	Partially Satisfactory: There is little evidence that the criterion has been satisfactorily addressed and some omissions are evident. Much more clarification is needed.
3	Satisfactory: There is reasonable evidence that the criterion has been satisfactorily addressed but some omissions are still evident and further clarification is needed.
4	Good: The criterion has been well addressed with a good evidence base , with only minor omissions or lack of clarity.
5	Excellent: There is clear evidence that the criterion has been completely addressed in all aspects, with a strong evidence base presented clearly and concisely.

The total score will be calculated by applying the weighting set against each. The maximum number of marks possible will be 100. Applications that score 1 (prior to the weighting calculation) against any given criterion will be eliminated.