Department for Business, Energy & Industrial Strategy

AI for Decarbonisation Innovation Programme

Stream 2 guidance document

November 2022

Part 1: BEIS AI for Decarbonisation

1 About the AI for Decarbonisation Innovation Programme

This AI for Decarbonisation innovation programme will support the development of innovative artificial intelligence (AI) technologies for decarbonisation applications to support the transition to net zero. The programme will also promote coordination and collaboration between AI and carbon-emitting sectors in the UK in order to maximise the economic and carbon benefits of AI solutions in solving our most critical decarbonisation challenges.

1.1 Context

The UK is a world leader in both its decarbonisation ambition and AI investment. The UK has recently committed to establishing pro-innovation governance and regulatory frameworks for AI deployment. The AI Council recently published an AI Roadmap that advocates for AI technologies to play a role in innovating towards solution to climate change.

AI has the potential to enable greater productivity and efficiency in decarbonising the energy system and the economy more widely[1]. A growing number of studies show how AI technologies can increase the pace of decarbonisation and it is seen as a critical technology to enable significant emissions cuts by 2030. Recent analysis estimates that AI can help reduce global emissions by up to 4% against business as usual by 2030, whilst concurrently supporting an increase to global GDP of 4.4%.[2]

The UK's Energy Digitalisation Strategy[3] recognizes the potential of AI technologies to be deployed in the energy sector and there are already some AI applications for energy and climate challenges being developed. However, they are mainly developed in isolation and there are many potential applications across decarbonisation sectors that are not yet attempted.

As set out in the UK's National AI Strategy[4], there is a need to support innovation projects in this area which will both develop AI technologies and at the same time enable us to reach the net zero target at a lower cost. There is also a need to improve and coordinate innovation across these sectors to ensure that innovation in AI technologies can enable and facilitate our transition to net zero by 2050.

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[1] Rolnick, D. et. al. Tackling Climate Change with Machine Learning. (2019 June). arXiv. Available here: https://arxiv.org/abs/1906.05433
[2] https://www.pwc.co.uk/services/sustainability-climate-change/insights/how-ai-future-can-enable-sustainable-future.html
[3] https://www.gov.uk/government/publications/digitalising-our-energy-system-for-net-zero-strategy-and-action-plan
[4] https://www.gov.uk/government/publications/national-ai-strategy

1.2   Programme overview

The programme will ensure the UK remains at the forefront of action on both decarbonisation efforts and AI development and that efforts on both fronts are complementary. It aims to improve the landscape of the UK energy transition and decarbonisation efforts for AI technologies and companies, unleashing the economic and carbon benefits of AI solutions, whilst attracting investment and highly skilled labour to the UK.

The AI for Decarbonisation innovation programme will be delivered in two Streams:

- Stream 1 will deliver an **A**rtificial Intelligence for **D**ecarbonisation's **Vi**rtual **C**entre of **E**xcellence (ADViCE) via grant. The centre will coordinate and foster collaboration on AI innovations with decarbonisation applications, disseminate information publicly and to relevant networks, identify strategic and priority challenges for AI innovation for decarbonisation, and provide pathways to leverage private funding. We expect this will involve convening a representative working group of key stakeholders or focus groups with fair representation across the sectors to address particular issues.

- Stream 2 will call for proposals to grant fund small scale projects that provide evidence of how AI can help meet the UK's decarbonisation targets. Winners of this competition will be expected to present the results from their work to BEIS and ADViCE stakeholders (set up in Stream 1), who will use these outputs to calibrate their conclusions on how AI can assist in decarbonisation and areas where the UK can be competitive and achieve economic growth.

Future rounds of funding will be called within a year of this call (subject to change) and will deliver pioneer innovation projects funded by grants, each supporting innovative AI technologies with decarbonisation applications. The challenges identified in Stream 1 by ADViCE and the results from the Stream 2 projects will feed into future phases of the programme, where BEIS will select challenges most aligned to strategic objectives and further innovation funding will be competed openly to organisations seeking to solve these challenges. These innovation projects will focus on addressing issues where there is clear evidence of risk of missed opportunities.

The success of the programme will result in the following outcomes:

- Increased market growth in the UK of AI and decarbonisation technologies
- Reduced costs of delivering the transition to net zero
- Increased technological readiness of AI solutions for decarbonisation applications
- Increased coordination and collaboration between the AI sector and the energy and industry sectors in the UK, especially for the purpose of enabling decarbonisation of those sectors
- Increased opportunities to leverage private investment in AI for decarbonisation in the UK
- Increased consideration of ethics, bias, and equity in AI technologies with decarbonisation applications

1.3 AI for Decarbonisation Stream 2

Stream 2 of the programme seeks to pilot the development of innovative AI approaches that will address critical challenges in decarbonisation. The total budget available for the Phase 1 of the Competition is £1M split across the following applications:

Lot 1: Using AI to enable a faster transition to renewable generation in the electricity system (budget £350,000)

Lot 2: Using AI to decarbonise UK industry by either improving energy productivity or through enabling fuel switching (budget £350,000)

Lot 3: Using AI to decrease agricultural carbon emissions through better control or process change (budget £300,000)

Due to the allocation process in deciding between projects and ensuring a well-rounded portfolio of projects, the amounts allocated to each area may differ slightly from the values shown. BEIS reserves the right to allocate more or less than the total and allocated budget depending on the number and quality of applications received and budget availability.

Applicants can apply for up to £150,000 grant per proposal and only one proposal per lead company may be submitted. The maximum duration of each project is 12 months; however, we plan to carry out an additional funding round in 2023 to address specific challenges based on the findings of ADViCE and early outcomes from the pilot projects in Stream 2.

During the application process, applicants will be expected to demonstrate a robust evidence base case for funding, which will include but not be limited to:

- The potential impact of their AI approach on decarbonisation and UK's net zero target
- The innovative level of their approach
- The potential impact on developing UK AI capability in decarbonisation and growth
- The technical credibility of their innovation including a coherent development plan that will commercially progress the innovation
- Value for money

The Competition is eligible for all sizes of organisation but the technologies in scope must be between TRL 3 – 7. Projects can work with **international partners, but at least 70% of the project activities, by cost must be conducted in the UK**. Applicants will be expected to demonstrate that their project proposals meet the definition of either Industrial Research, Experimental Development or a Feasibility Study.

1.3.1 Project types

Applicants will be expected to demonstrate that their project proposals meet the definition of either Industrial Research, Experimental Development, or a Feasibility Study. Funding levels will vary for each project type according to conditions as set out in Section 4.

Fundamental Research

Fundamental research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any direct commercial application or use in view.

Industrial Research

Industrial research is defined as 'the planned research or critical investigation aimed at the acquisition of new knowledge and skills for developing new products, processes or services or for bringing about a significant improvement in existing products, processes or services.'

Activities may include:

- the creation of component parts of complex systems
- the construction of prototypes in a laboratory environment or in an environment with simulated interfaces to existing systems
- pilot lines, when necessary for the industrial research and notably for generic technology validation.

Experimental development

Experimental development is defined as: 'acquiring, combining, shaping, and using existing scientific, technological, business, and other relevant knowledge and skills with the aim of developing new or improved products, processes, or services. This may also include, for example, activities aiming at the conceptual definition, planning and documentation of new products, processes or services'.

Activities undertaken may include prototyping, demonstrating, piloting, testing and validation of new or improved products, processes, or services in environments representative of real-life operating conditions where the primary objective is to make further technical improvements on products, processes or services that are not substantially set. This may include the development of a commercially usable prototype or pilot which is necessarily the final commercial product and which is too expensive to produce for it to be used only for demonstration and validation purposes.

Experimental development does not include routine or periodic changes made to existing products, production lines, manufacturing processes, services, and other operations in progress, even if those changes may represent improvements.

Feasibility study

A Feasibility Study is defined as 'the evaluation and analysis of the potential of a project, which aims at supporting the process of decision-making by objectively and rationally uncovering its strengths and weaknesses, opportunities and threats, as well as identifying the resources required to carry it through and ultimately its prospects for success.'

2 Eligibility

2.1 Eligibility criteria

To be eligible for funding, the project must meet all of the following criteria.

Innovation and Technology Readiness

Projects must be at TRL 3 – 7 to be eligible for the fund, but no weighting is given at assessment stage to any particular TRL level. Therefore, no preference is given to projects that are higher up the TRL scale and closer to commercialisation.

TRLs provide an indication of the level of maturity of a particular technology and BEISs descriptions of the TRLs is provided in the Appendix. As part of the application form applicants will be asked to provide the TRL of their innovation and provide details of the work that has been undertaken to demonstrate that the innovation is that stage.

Projects must fall within the definitions of Industrial Research, Experimental Development, or Feasibility Study (as described above in Section 1) and be eligible under the subsidy requirements described in Section 4 of this guidance.

Project status

BEIS are unable to fund retrospective work on projects. The value of described retrospective work may, however, be considered in the assessment process when the technical assessors are evaluating the assessed criteria.

Aid intensity including cumulation: The funding levels applied for must be consistent with the appropriate aid intensity levels (including consideration of the cumulative effect of other forms of aid) and costs must be consistent with the eligible cost criteria (as set out in Section 5.4).

Grant amount

The purpose of funding these projects is to get initial evidence of the suitability of the approach to facilitate decarbonisation in the stated sectors and the consequently the maximum grant funding is limited to **£150,000** per project.

Match funding

A degree of private match funding and/or in-kind contributions from the successful applicant is expected. Such funding may come from applicant's own resources or external private sector investors but may not include grant or other similar funding attributable to any public authority funding the same work. The amount of match funding required will depend on the type of organisation, following the subsidy rules detailed in Section 4.

Before the Grant Offer Letter is issued, the applicant will need to show a credible plan to raise the match funding required for the whole lifetime of the project. Evidence for the plan can be given by showing relevant bank statements or letters from investors.

Project location

Over 70% of the project's activities must be conducted in the UK. The fraction of the project activities that take place in the UK is measured as the proportion of the total eligible project costs that are spent in the UK, as opposed to spent outside the UK. See Section 5.4 for more information about eligible costs.

This includes England, Scotland, Wales, and Northern Ireland. This does not include the Isle of Man, the Channel Islands or British Overseas Territories like Gibraltar.

Project duration

The maximum duration of project is **12 months**. All work carried out under the grant must be completed no later than 30th July 2024. BEIS will be not meet claims for any work carried out on or after this date.

Technology scope

The project must fit within the relevant scope defined below in Section 2.2.

Eligible Applicants

Organisations of any size and type are eligible to seek funding. An individual organisation may not submit or be the lead in more than one application but can be a partner in multiple applications.

In the case of a consortium proposal, only one submission covering all partners is required, but consortia should make clear the proposed role that each partner will play in delivering the project. We expect the proposal to indicate who in the consortium will be the lead contact for this project, and the organisation and governance associated with the consortia. There is no limit on the number of collaboration partners in a proposal. A Consortium Agreement will need to be completed before the Grant Offer Letter is signed– no funding will be available until this is completed.

2.2   Stream 2 Technological Scope

To be eligible for funding your project must fit within one of the following categories and which you must state in the application form:

Lot 1: Using AI to enable a faster transition to renewable generation in the electricity system

AI can enable rapid transition to carbon-free electricity systems by improving forecasting, scheduling, and/or control of the generation infrastructure, and by facilitating integrating intermittent electricity and flexible demand. Examples of the work under this category include, but are not limited to, advanced predictive generation modelling, demand forecasting to optimise electricity scheduling either for centralised or distributed energy system, and predictive repair and maintenance. The work could also seek to maximise electricity production and reducing cost or increase the efficiency of electricity transmission.

Lot 2: Using AI to decarbonise UK industry by either improving energy productivity or through enabling fuel switching

AI can help reduce greenhouse gas emissions by optimising supply chains, manufacturing techniques, distribution, and energy use such as heating and cooling systems. This could include using AI to enable faster production, so decreasing the number of production lines needed and so saving energy, intelligent prediction of supply and demand, preventative maintenance, identification of low carbon raw materials, novel manufacturing techniques and optimised shipping routes.

Lot 3: Using AI to decrease agricultural carbon emissions through better control or process change

Agriculture is responsible for about 14% of greenhouse gas emissions[5]. AI can enable rapid adoption of lower carbon emissions by, for example, utilising machine learning in the development of smarter robots to perform mechanical tasks such as weeding and harvesting, and the development of sensors to improve productivity and cut waste such as intelligent fertilisation and irrigation system.

This programme will not support:

- Projects where the AI technology is not applied to a decarbonisation application, even if the technology could potentially in future be applied for decarbonisation purposes
- AI applications that will not assist in achieving the net zero target by 2050
- AI applications that do not facilitate a reduction in greenhouse gas emissions or where the impact on greenhouse gas emissions is uncertain
- AI applications without appropriate mitigations against undesirable social side effects, such as privacy infringement, cybersecurity threats, etc
- Early-stage research (TRL 1 - 2) or which are already at production prototype stage (TRL 8 and above)

3 Application and assessment process

3.1 Competition timeline

The AI for Decarbonisation Stream 1 competition process will be undertaken in three key stages comprising application, assessment, and grant award.

The following dates for all three stages are applicable but are subject to change.

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[5] IPCC. Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schl¨omer, C. von Stechow, T. Zwickel, J.C. Minx, (eds.)]. 2014.

Application	• Application opens: November 2022 • Final date to submit application: 14:00 BST 19 January 2023
Assessment & Moderation	• Eligibility Checks: 20- 27 January 2023 • Assessment: 30 January 2023 - 18 February 2023 • Assessment Moderation: 20 - 28 February 2023
Grant Award & Project Kick Off	• Notification via conditional unsuccessful/successful letters: March 2023 • Financial due diligence and Grant awards: March 2023 • Project Kick Off: from April 2023

3.2   Application process

Bidders are asked to submit their competition application form with supporting information by 14:00 BST, 19 January 2023 at the very latest. The notes below explain the details of the application process.

Questions about the Competition

If you have any questions on the competition process after reading these guidance notes, please submit them to AI.innovation@beis.gov.uk. Questions can be submitted throughout the application window; however questions submitted on or after 12 December 2022 may not be answered.

We will reply to any queries which, in our judgement, are of material significance through an anonymised Q&A sheet published on our gov.uk website by 1 December 2022, with any additional queries added in the week of 12 December 2022.

All applicants should take these replies into consideration when preparing their own applications and we will evaluate applications on the assumption that they have done so.

Submission of Application

The full application for the competition must be submitted online by the deadline: 14:00 BST, 19 January 2023. The online application form will be closed for submissions after this time.

You must apply using the online form. If you need a version of the application in a more accessible format, please contact AI.innovation@beis.gov.uk.

Applications documents

All application documents must be submitted via the online application form. In the form there are opportunities to upload relevant supporting documents. In some sections we specify the supporting information we would like to see uploaded.

Each online application must include the following documents. More information about how to fill out these documents and how they will be assessed can be found in Part 2 of this guidance.

- Application Form (the online application form can be found here)
- Project Cost Breakdown Form (to be uploaded in the Finance Section of the application form)
- Gantt chart (to be uploaded in the Project Plans section of the application form)
- Risk register (to be uploaded in the Project Success Factors, Risks, and Management section of the application form)
- Optional: additional letters of support or other supporting information can also be submitted before you submit your online application form. Supporting documents should provide substantive information to the proposal. However, you should not assume that any additional information will be cross-referenced or reviewed as part of the selection process.

You should endeavour to answer all the questions on 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.

3.3   Assessment process

Eligibility

Applications will initially be assessed against the Eligibility Criteria in Section 2. Applications which fail the Eligibility Criteria will not be assessed further, so it is essential to ensure that your project meets these criteria before you submit your application.

Assessment and Moderation

The eligible projects will be assessed against the assessment criteria (see Part 2) to determine an overall ranking list which will be used to allocate the funding for the competition.

Technical and commercial reviewers will independently assess against the specific criteria summarised below and described in more detail in Part 2:

- Level of innovation
- Market viability and potential for commercialisation

- Impact and relevance to decarbonisation
- Project plans including risks and risk management
- Project finances and value for money/case for public funding
- Experience and skills

Projects are typically assessed by three reviewers, for both technical and commercial viability. The reviewers may be a mixture of both internal and external low carbon technology professionals appointed by BEIS, and the assessments will be quality assured by BEIS.

The reviewers will consider the application against the criteria and will provide feedback and recommendations to BEIS based on these considerations. Those recommendations by the reviewer to BEIS will either be recommendations for funding, recommendations not to fund or the identification of applications where clarification would be needed before funding could be recommended. All reviewers will participate in a moderation process, led by an independent moderator to come to a final assessed score for each project.

Funding allocation

To be eligible to receive funding, the proposal must be allocated a minimum total score of 60% against the assessment criteria.

Applications which pass this minimum threshold will be placed in a ranked list with the highest scoring proposal first. The funding will be allocated to the highest scoring proposal.

If two or more proposals score identically overall, the ranking will be decided based on the following criteria, in priority order:

- Credibility of the technical approach (highest assessed score first)
- Impact on greenhouse gas emission reduction (highest assessed score first)
- Level of innovation (highest assessed score first)
- Project plans (highest assessed score first)
- Business proposition (highest assessed score first)

3.4   Notification and feedback

All applicants will be informed by email whether their application has been successful or unsuccessful. Grant awards for successful applications are subject to compliance with the terms and conditions of the Conditional Offer that will be received, including satisfactorily passing due diligence.

Feedback

All applicants will receive a short summary of key feedback regarding their applications irrespective of whether they are successful or not. BEIS aims to have provided all feedback to applicants once all applications have been reviewed, assessed, and moderated. Feedback will be given at the same time the successful/unsuccessful letters are sent to the applicants.

A short summary of key feedback regarding the applications will be provided to all applicants, this feedback will be based on the summary comments from the Assessment Stage. 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 check list of points which must be answered or argued in a resubmitted application as the assessors may be different and it is your decision as to whether you act on the suggestions made.

Right of appeal

There is no right of appeal – the reviewers' scores are final – so it is important that you make any points you wish to make clearly and concisely in the application form.

3.5   Grant award

Due diligence

Following notification of a successful application, the eligible costs of proposals will be checked, and the organisation's financial viability confirmed (see Section 5 for more detail). Any funding pre-requisites identified will be conditions of the grant. It will be a requirement before issuing the grant to show that a clear credible plan exists to raise the required match funding for the project. Where due diligence checks identify any issues with the project which were not clear from the application documents or which may impact on the successful delivery of the project, BEIS reserves the right not to proceed to the Grant Offer Letter stage.

Successful applicants will be given the opportunity to discuss the Grant Offer Letter with an official from BEIS to explain the conditions of the letter and respond to any queries which the applicant may have at this stage. However, in fairness to all applicants, the terms and conditions in the Grant Funding Agreement will not be changed, so applicants are advised to read them carefully before applying. A template showing the Government's Grant Funding Agreement can be found here:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/803083/Annex_D_Grant_Funding_Agreement.docx

Project monitoring officers

The successful applicant will be assigned a Project Monitoring Officer (PMO). The PMO will then become the project's main point of contact. PMOs are ultimately responsible for reviewing and approving evidence at milestones claims so that invoices may be paid by BEIS finance. Therefore, the project lead for the successful applicant will be required to have regular contact with their PMO to report progress and raise any issues with project delivery to their PMO.

4 Funding levels and subsidy requirements

DISCLAIMER: While BEIS will operate within the UK-EU Trade and Co-operation Agreement (TCA) requirements and World Trade Organisation (WTO) rules, we may decide to offer lower levels of funding than the maximum permitted under the rules; additionally, the funding rules set out in this Guidance Document are specific to this Competition only.

4.1 Subsidy control

This programme will support the successful applicant through subsidies awarded in the form of grants towards the eligible costs of the proposal. Since 1 January 2021, public authorities must comply with our international commitments on subsidies in the UK-EU TCA, and other trade agreements, as well as the WTO rules on subsidies[6]. Subsidy rules dictate the types of costs that applicants can claim grant support for, as well as the maximum level of grant funding that they can receive which may differ by organisation type, size, and location.

Rules in Scope for subsidies in 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 also be subject to scrutiny from the European Commission in accordance with Article 10 of the Northern Ireland Protocol in the UK/EU Withdrawal Agreement[7].

If the European Commission considers a business or any undertaking to have been incorrectly in receipt of grant funding, that undertaking is likely to be required to repay any aid received to the value of the gross grant equivalent.

4.2 Subsidy categories

The size and type of funding that the project can receive will depend upon the type of lead organisation and which aid category they qualify under. The subsidy category, Aid for research and development, and eligibility criteria are described in this section, while the different levels of funding can be found in Section 4.4 and 4.5.

This scheme operates under two different categories for aid. The two categories for aid are *Aid for start-ups* and *Aid for research and development*.

If you're a sole applicant, you can apply for either:
- Aid for start-ups
- Aid for research and development projects

Consortia must apply for *Aid for research and development projects*.

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[6] https://www.gov.uk/government/publications/complying-with-the-uks-international-obligations-on-subsidy-control-guidance-for-public-authorities

[7] https://www.gov.uk/government/publications/complying-with-the-uks-international-obligations-on-subsidy-control-guidance-for-public-authorities/technical-guidance-on-the-uks-international-subsidy-control-commitments#section7

Aid for start-ups

You can apply for *Aid for start-ups* if you meet all the following criteria. Your company
- is a small or micro business (see Section 4.3 for definitions)
- has existed for fewer than 5 years since the date you were registered with Companies House
- has not been listed on any stock exchange
- has not been formed through a merger or takeover, or taken over another business
- has not paid out profits to shareholders through dividends yet
- has spent at least 10% of turnover on research and development in at least 1 of the past 3 years (if you're a start-up with no turnover yet, you must have this validated by an independent party)

Companies that are successful in receiving funding and that have indicated that they are eligible for funding under this subsidy category, may additionally be asked to provide a copy of their business plan prior to the final award letter being issued.

If your company does not meet all of these criteria, then you must apply for *Aid for research and development.*

Aid for research and development

You should apply for *Aid for research and development* if your company does not meet the criteria for *Aid for start-ups* or if you are applying as part of a collaboration.

4.3   Organisation types

Research organization

When referring to research organisations, BEIS uses the following definition:

'research and knowledge dissemination organisation' or 'research organisation' means an entity (such as universities or research institutes, technology transfer agencies, innovation intermediaries, research-oriented physical or virtual collaborative entities), irrespective of its legal status (organised under public or private law) or way of financing, whose primary goal is to independently conduct fundamental research, industrial research or experimental development or to widely disseminate the results of such activities by way of teaching, publication or knowledge transfer. Where such entity also pursues economic activities, the financing, the costs, and the revenues of those economic activities must be accounted for separately. Undertakings that can exert a decisive influence upon such an entity, for example in the quality of shareholders or members, may not enjoy a preferential access to the results generated by it.

Within this competition, this means:

- universities and higher education institutions (HEI)
- non-profit research and technology organisations (RTOs), including Catapults
- public sector organisations (PSO)

- public sector research establishments (PSRE)
- research council institutes
- research organisations (RO)
- charities

This list is not comprehensive and is subject to change and exceptions.

Business

A business is defined as an organisation undertaking economic activities. Businesses are categorised as micro, small, medium, or large determined by both their:

- staff headcount
- either turnover or balance sheet total

Company category	Number of full-time employees	Annual turnover	Balance sheet total
Micro	< 10	≤ £2 million	≤ £2 million
Small	< 50	≤ £9 million	≤ £9 million
Medium	< 250	≤ £45 million	≤ £39 million
Large	≥ 250	> £45 million	> £39 million

4.4 Funding levels for Aid for Start-ups

Applicants within this subsidy category requesting grant funding of up to and including £150,000, will be required to demonstrate 10% of their total eligible project costs for their match funding.

For example, a small innovative start up could apply under this category for a project with a total eligible project cost of £150,000. The maximum amount of aid they could apply for is 90% of those total project costs, so the largest grant value they could request for this project is £135,000. The minimum company match funding that they would be required to contribute is 10% of the eligible project costs, which is £15,000 in this example.

4.5 Funding levels for Aid for research and development

In the *Aid for research and development* category, the amount of grant funding available and minimum company match funding requirements depend on the type of project, the type and size of the organization, and whether you are applying as a sole applicant or part of a consortium. The information below summarise the different funding levels available under each category for sole applicants and for consortia.

Higher Education Institutes: For Research Organisations, we welcome university partners, but as with other government funding bodies funding higher education institutions, we will not pay more than 80% of the Full Economic Costs (FEC) calculated using the Transparent Approach to Costing (TRAC) methodology. Any applications requesting items that would ordinarily be found in a department, for example non-specialist computers, should include justification.

Non-HEI Research Organisations: Where applicable, other Research Organisations that are not higher education institutions undertaking non-economic activity (NEA; activity which cannot be carried out the private sector) can receive up to 100% funding. Research organisations should be 'non-profit distributing' to qualify. They should explain how they will disseminate the output of their project research as outlined in the application. Research organisations which are engaged in economic activity as part of the project will be treated as business enterprises for the purposes of funding.

Business Enterprises: The tables below show the degree of match funding for different categories of business and business consortia.

Aid for research and development for sole applicants

Project type	Organisation size	Minimum company match funding	Maximum aid towards eligible project costs
Fundamental Research	All	0%	100%
Industrial research	Micro/small	30%	70%
	Medium	40%	60%
	Large	50%	50%
Experimental development	Micro/small	55%	45%
	Medium	65%	35%
	Large	75%	25%
Feasibility study	Micro/small	30%	70%
	Medium	40%	60%
	Large	50%	50%

Aid for research and development for consortia

Project type	Size of largest organisation	Minimum company match funding	Maximum aid towards eligible project costs
Fundamental research	All	0%	100%

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Industrial research	Micro/small	20%	80%
	Medium	25%	75%
	Large	35%	65%
Experimental development	Micro/small	40%	60%
	Medium	50%	50%
	Large	60%	40%
Feasibility study	Micro/small	30%	70%
	Medium	40%	60%
	Large	50%	50%

Consortium Applications: The grant intensity and required amount of match funding are determined proportionately for collaborative applications.

Example: For example, a consortium made up of one medium sized enterprise and one research organization could apply for an industrial research project, with a total eligible project cost of £100,000. The maximum possible grant intensity for the medium sized enterprise is 75% and for the research organization is 100%.

If 60% of the costs are incurred by the medium sized enterprise and 40% of costs are incurred by the research organization, the overall subsidy rate for the project is calculated proportionally based on the distribution of costs between the organizations $0.6 \cdot 0.75 + 0.4 \cdot 1.0 = 0.85$. Therefore, the maximum amount of aid they could apply for is 85% of total eligible project costs and the largest grant value they could request for this project is £85,000. The minimum company match funding that the consortium would be required to contribute is 15% of the eligible project costs, which is £15,000 in this example.

4.6   Public funding considerations

When considering levels of aid intensity (described above), public funding includes the grant and all other funding from, or which is attributable to, other government departments, UK public bodies, other Governments or Government organisations related to the project. Such funding includes grants or other subsidies made available by those bodies or their agents or intermediaries (such as grant funded bodies).

In applying to this call, you must state if you are applying for, or expect to receive, any funding for your project from public authorities (in the UK or elsewhere). Any other public funding will be cumulated with BEIS funding to ensure that the public funding limit and the aid intensity levels are not exceeded for the project. It will be normal the Research Organisations will receive grants related to the upkeep of the institution and are therefore not identifiable to the project in question and hence do not need to be declared.

Whilst BEIS will check the information provided to try and ensure that applicants meet the requirements of the subsidy categories, applicants should establish that they fall within the aid rules before submitting applications. BEIS requires applicants to notify them of any change to situation or circumstance during the project.

If there is a breach of aid requirements, for whatever reason, BEIS will require repayment of any grant received, including interest, above that which was due. In this situation, applicants will be required to repay all funding received. It is essential to ensure that the total grant funding for the project from public sources does not exceed the permitted percentages stated for the relevant subsidy category.

As part of the assessment process, the added value and additionality of public funding will be assessed and applicants will need to demonstrate why public funding is required to deliver this project.

5 Project Plans, finances, and viability

5.1 Project timeline

All work carried out must be financially complete by 30 September 2024. All applicants must submit a detailed Gantt chart (template provided) as part of their application, which details the project timeline, work packages, and the project milestones.

5.2 Project lead organisation

BEIS specifies that there should only be one lead organisation assigned to each project proposal. Grant Offer Letter for the successful applicant will be made out to the delegated lead and as such BEIS is only responsible for making claim payments to the delegated project lead. Payments to collaboration partners or sub-contracts are the responsibility of the lead organisation.

BEIS require that all partners in a collaborative application have signed a Collaboration Agreement (CA) prior to a Grant Offer Letter being awarded. The CA should as a minimum specify the work division, intellectual property arrangements, and a dispute rectification process. BEIS will, in event of a dispute between partners, look for that dispute to be resolved within the terms of the CA.

5.3 Project costs

All applicants must complete the Project Cost Breakdown Form (template provided) detailing their expected quarterly expenditure and spending profile for the project. Further details about this form can be found in Part 2 of this document. You should complete a single form covering your entire project and including all of your partners, clearly identifying which costs relate to which partner.

During the assessment of applications, the project costs and plans that are submitted as part of the application process will be assessed along with the answers to the questions on the application form to ensure they are what might be reasonably expected.

The eligibility of all costs under subsidy rules and the financial viability of your organisation will be checked following the decision to pre-select an applicant but before a formal offer is made. Being contacted for this information does not indicate either success or failure in the assessment process.

While BEIS understands that project costs are subject to change prior to agreeing a Grant Offer Letter and throughout the course of the project, we do expect the final version of the Project Cost Breakdown Form to be our guide to project expenditure through delivery, and costs should not vary significantly from this without prior agreement from BEIS.

5.4   Eligible costs

Eligible Costs

Eligible costs are defined as the following:

- Personnel costs: researchers, technicians and other supporting staff to the extent employed on the project;
- Costs of instruments and equipment to the extent and for the period used for the project. Where such instruments and equipment are not used for their full life for the project, only the depreciation costs corresponding to the life of the project, as calculated on the basis of generally accepted accounting principles are considered as eligible;
- Costs for of buildings and land, to the extent and for the duration period used for the project. With regard to buildings, only the depreciation costs corresponding to the life of the project, as calculated on the basis of generally accepted accounting principles are considered as eligible. For land, costs of commercial transfer or actually incurred capital costs are eligible;
- Costs of contractual research, knowledge and patents bought or licensed from outside sources at arm's length conditions, as well as costs of consultancy and equivalent services used exclusively for the project;
- Additional overheads and other operating expenses, including costs of materials, supplies and similar products, incurred directly as a result of the project.

Ineligible costs

Under no circumstances can the grant be claimed or used:

- For activities of a political or exclusively religious nature;
- In respect of costs reimbursed or to be reimbursed by funding from other public authorities or from the private sector;
- In connection with the receipt of contributions in kind (a contribution in goods or services as opposed to money);
- To cover interest payments (including service charge payments for finance leases);

- For the giving of gifts to individuals, other than promotional items with a value no more than £10 a year to any individual;
- For entertaining (entertaining for this purpose means anything that would be a taxable benefit to the person being entertained, according to current UK tax regulations);To pay statutory fines, criminal fines or penalties; or
- In respect of VAT that you able to claim from HM Revenue and Customs.
- You cannot claim any costs for the project prior to the signing of the Grant Offer Letter, this includes any costs or expenses incurred in preparing your bid. BEIS is unable to fund retrospective work on projects.

Sub-contract use

You will be expected to state and justify in your project application the amount of sub-contract funding (if any) within the expected spend of the project. You will be expected to explain the necessity for this spend as opposed to the addition of collaboration partners within the project proposal.

BEIS would not normally expect to see contractors in key posts, e.g. CEO, financial director, included in applications. Exceptionally, where BEIS is willing to provide a grant which covers the cost of contract staff in key posts, the day rate attributed to each member of key staff within the project must be agreed with BEIS at the outset and cannot be varied without written agreement.

Overhead rates

Overheads (indirect costs) are defined as all those eligible costs that cannot be identified and calculated by the grant recipient as being directly attributed to people working on their AI for Decarbonisation project.

BEIS normally calculate overheads as a fixed percentage of all direct labour costs at 20%, but in exceptional circumstances, that must be fully detailed in the application, BEIS may pay overhead rates between 10% and 40%. It is up to the applicant to justify why the standard overhead rate is not applicable to their project based on the nature off the work and we will look at the strength of these arguments in assessing the application.

The overhead rate is agreed with BEIS before the Grant Offer Letter is issued and cannot be changed during the work.

Costs incurred by university partners

We welcome university partners when they can add value, but as with other Government funding bodies funding higher education institutions, BEIS will not pay more than 80% of the Full Economic Costs (FEC) calculated using the Transparent Approach to Costing (TRAC) methodology. Any applications requesting items that would ordinarily be found in a department, for example non-specialist computers, should include justification.

5.5   Financial viability checks

BEIS will undertake financial viability checks on all successful applicants. Where appropriate, these will include looking at the latest independently audited accounts filed on the Companies House database.

Where an organisation is not required to file accounts with Companies House, other financial information may be requested to enable an appropriate financial viability review to be undertaken. We will be looking for evidence of your ability to resource the project appropriately, so the information we request will be focused on understanding how your organisation operates in this respect.

Before your project starts, BEIS will ask for credible evidence that you have the funding mechanisms in place to manage your cash flow across the life of your project. This could include letters of credit, letters of intent to invest from individuals or organisations or other such mechanisms. We do not expect you to have cash deposits to cover the entirety of your project at the start. If you do not complete your project due to cash flow problems that you could have anticipated and managed, we may request repayment of any grant already issued to you.

BEIS will not make payments in advance of need. BEIS understands, however, the difficulties which small businesses may face when financing this type of project. BEIS will explore cash flow issues with the applicant as part of developing the financial and milestone profile within the Grant Offer Letter. BEIS will offer flexibility in terms of profiles and payments, within the confines of the requirements for good use of public money within which it operates.

5.6   Grant use

Applicants should note that the grant may not be used to subsidise commercial activities and that where BEIS awards a grant for the purpose of the development of commercially usable prototypes or pilot projects, any revenue generated from such commercial use will be deducted from the grant (and, where the grant has already been paid, will be required to be returned to BEIS).

6 Confidentiality and Freedom of Information

Where any request is made to BEIS under the Freedom of Information Act 2000 ("FOIA") for the release of information relating to any project or applicant, which would otherwise be reasonably regarded as confidential information, then BEIS will notify you of the request as soon as we become aware of it. An applicant must acknowledge that any lists or schedules provided by it outlining information it deems confidential or commercially sensitive are of indicative value only and that BEIS may nevertheless be obliged to disclose information which the applicant considers confidential.

As part of the application process all applicants are asked to submit a public description of the project. This should be a public facing form of words that adequately describes the project but that does not disclose any information that may impact on Intellectual Property (IP), is

confidential or commercially sensitive. The titles of successful projects, names of organisations, amounts awarded, and the description of the project may be published once the award is confirmed as final.

All assessors used during the assessment of applications will be subject to a confidentiality agreement.

Media engagement

BEIS may wish to publicise the results of the scheme which would include engagement with the media. At the end of the application and assessment process, BEIS may issue a press release or publish a notice on its website. These may, for example, outline the overall results of competitions and describe some of the projects to be funded.

Some organisations may want their activities to remain confidential and you will be given a chance to opt out of any involvement in media relations activity and further case study coverage of projects, should you see this as being necessary. However, the public description of the project you provide in your application will be made available in the public domain if your application is successful, and you are not able to opt out of the project description being published.

Any organisation that wishes to publicise its project, at any stage, must contact the Programme Lead of the AI for Decarbonisation at BEIS before doing so.

Part 2: Completion of the Application

1 Application form and assessment criteria

All applications will be considered against the assessment areas and ranked against each other. The online application form and guidance notes are designed to inform you about the types of information you should provide to BEIS for your proposal to be assessed.

We will select the project that offers the best value for money overall based on their assessment against the criteria outlined in this section. For the avoidance of doubt, the individual questions listed under the headings below do not constitute assessment sub-criteria but are an indication of the kinds of factors that will be considered in assessing each aspect of a proposal.

6.1 Scoring guidance

All applications will be scored using assessment rubric set out in the table below. Projects must score a minimum of 60% (based on total score) to be eligible for funding.

Score	Description
1	Not Satisfactory: There is no evidence to very little evidence that the question has been satisfactorily answered and major omissions are evident.
2	Partially Satisfactory: There is little evidence that the question has been satisfactorily answered and some omissions are evident. Much more clarification is needed.
3	Satisfactory: There is reasonable evidence that the question has been satisfactorily addressed but some omissions are still evident and further clarification is needed.
4	Good: The question 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 question has been completely addressed in all aspects, with question answered clearly, concisely with a strong evidence base.

6.2   Application Questions

1. Business Proposition
Weighting 10%
A maximum of 1500 words is allowed for this field. Applicants are expected to: • Describe the business opportunities/market problems that their innovation address • Describe the first target market for their innovation, including the size of the market. Describe the specific market sub-sectors that will be the initial target markets for their innovation in the first three years of commercialisation. • Describe the problem that their innovation overcomes for the target market(s) and the consumer value proposition. • Describe the Unique Selling Point of their innovation that enables them to differentiate it from the competition and gives them a market edge over existing competing solutions or technologies. • Describe any independent justification or market research they have to substantiate all of the above. • Describe the business model that they will use to generate value and revenue from the innovation including the route to market • Describe and quantify the potential sales pipeline based on the target markets
Scoring Guide Strong answers will comprehensively explain all of the above and provide a credible business model and route to market.

2. Level of innovation
Weighting 10%
A maximum of 1500 words is allowed for this field. Applicants are expected to: • Explain why their proposed solution is novel and innovative and provide evidence to demonstrate that it is technically feasible in the context of its applications in decarbonisation, providing justifications for all technical data provided. • Provide justification on what makes their approach is best suited to address the proposed decarbonisation challenge.

- Describe and provide evidence of the current TRL of the technology including details of work that has been done to date and describe how the project demonstrates innovation in the field of AI. Using the guidance in Appendix of this document, you should choose the TRL you feel most appropriate to the current state of your technology. The TRL chosen should be supported by the information provided. Please note to be eligible for this competition your technology must have a TRL of 3-7.

- Describe the TRL that will be achieved by the project including evidence that will support this claim.

- Describe how their technology will advance the field of AI for decarbonisation and boost UK's international reputation in the field

Scoring Guide

Strong answers will comprehensively explain all of the above and:

- Provide clear evidence and justification for the proposed technical approach and data
- State and justify credible starting TRL, within the 3-7 range
- Describe the key innovation that clearly fits within the Technology Scope.
- Describe innovative elements of the technology, noting that new data sources alone and new applications of existing commercial solutions are not considered sufficiently innovative
- Demonstrate scalability on an international scale

3. Credibility of the technical approach

Weighting 15%

A maximum of 1500 words is allowed for this field.

Applicants are expected to:

- Describe the technical challenges that will be addressed with the proposed solution and the technical advances that will be achieved by the project in transitioning towards the longer-term technologies. Explain how this will be achieved.

- Describe what needs to happen to achieve the stated performance, including suitable verification and validation measures, the risks that may prevent it and how these risks might be mitigated.

- Describe the additional work that is needed to develop the technology further and enable future deployment including key barriers and risks to implementation for proposed decarbonisation application

- Where appropriate, explain any assumptions and limitations of their datasets and how they will address potential gaps in data coverage, robustness, governance as well as the ethics of data collection

Scoring Guide

Strong answers will comprehensively explain all of the above and highlight the key barriers and challenges to the long-term development plan for the technology.

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4. Decarbonisation potential

Weighting 20%

A maximum of 1000 words is allowed for this field.

Applicants are expected to:

- Explain how their project is addressing the specific challenges faced in decarbonisation, the likely impact on climate change mitigation or greenhouse gas emissions reductions, and the timescale
- Calculate the tonnes of carbon/greenhouse gas emissions saved or avoided for a single unit of their product or service. Please state all assumptions used including counterfactuals.
- Estimate the carbon/greenhouse gas emissions savings that their product/service could enable once it is established in the marketplace. Please state all assumptions used such as market penetration, sales volume, and timeframe.

Scoring Guide

Strong answers will comprehensively explain all of the above and present a strong justification on the impact or contribution their innovation will have towards UK's 2050 net zero targets.

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5. Project Plan

Weighting 10%

A maximum of 1000 words is allowed for this field.

Applicants are expected to:

- Describe your project plan, including practical steps and actions you will take to develop your innovation needed for AI. This may include approaches to co-engineering with the consortium to achieve the milestones or outputs identified in the lots. Complete the Gantt chart template with your project plan and upload it in this section. Give as much detail as possible and use evidence to prove your claims when you can.
- Justify why the technical approach taken is suitable for AI and how this approach will be achieved through the planned work packages.

- Explain important deliverables and milestones, including when you expect to reach them and what you need to do to reach them. These could include producing a computer model, working prototype, proving a theory, running a test in a real-world environment, obtaining a patent, points for go/no-go decisions, or many other critical stages for your project.

- Explain how important milestones or work packages depend on other factors in the project.

Scoring guide

Strong answers will comprehensively explain all of the above. Some factors our assessors will consider include but are not limited to:

- Is the methodological approach appropriate and achievable?
- Is the project plan sufficiently detailed?
- Is the timing of key milestones realistic?

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6. Project Risks and Mitigation

Weighting 10%

A maximum of 1000 words is allowed on this field.

Applicants are expected to:

- Describe the top three critical success factors and how they relate to the delivery of the programme objectives and how these success factors will be measured
- Describe the top three challenges to delivery
- Please provide a risk register, using the required template, covering relevant key risks (e.g., operational, financial, technical, environmental, personnel, political, social), including how these will be monitored and managed and the arrangements for managing partner organisation and any significant sub-contractors.
- Summarise how these key risks will be monitored and managed

Scoring Guide

Strong answers will comprehensively explain all the above and demonstrate a strong and realistic plan for managing and overcoming risks and challenges, including identification of the highest priority challenges to delivery and their suitable mitigation strategy.

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7. Project team

Weighting 10%

A maximum of 1000 words is allowed on this field.

Applicants are expected to:

- Please upload relevant one-page CVs for the main personnel involved.
- Provide evidence of relevant expertise for the main personnel involved, including both lead and partner organisation personnel if relevant. Highlight the skills and expertise of the team including demonstration of staff having high level of capability on similar projects.
- Describe your approach to filling any skills or expertise gaps in your lead or partner organisation that will be required to successfully deliver the centre.
- Please provide evidence of appropriate level of human resource throughout the funding period to ensure no disruption to delivery.
- Explain how the team will be managed and include an organogram of the key members of staff including their role and responsibilities.

Scoring Guide

Strong answers will comprehensively explain all of the above and:

- Demonstrate strong ability through past experiences
- Explain how role and responsibilities are connected to project plan.

8. Value for Money

Weighting 15%

A maximum of 1000 words is allowed on this field.

Applicants are expected to:

- Complete Cost Breakdown Form. It must be sufficiently disaggregated to enable assessment of whether the proposed costs are eligible, accurate, realistic and justified in terms of the proposed plans, sufficient to provide the deliverables sought and represent fair market value.
- Give further detail on how your costs have been calculated with reference to the delivery of the milestones and justify them, providing evidence where possible
- Describe or explain the steps you have taken to minimise these costs to ensure that your proposal represents value for money for the government
- Describe the additionality which public funding brings to the project and what would happen to this innovation without this public funding
- Give details of match funding
- If applicable, justify the use of subcontract rather than labour or additional project partner

Scoring guide

Strong answers will comprehensively explain all of the above and:

- Demonstrate clear understanding of the costs including supporting evidence and underlying assumptions to justify the stated costs where relevant
- Show that the budget breakdown is realistic and align with work packages
- Show strong justification of good value for money for the government's investment
- Show strong case for additionality
- Show credible and realistic match funding

2 Supplementary Forms to Upload

2.1 Gantt Chart

This form should be uploaded as part of Question 5.

Field	Guidance
Task name	Enter the type of activity that you need to do in this column. For instance, research, analysis, development, testing, administration. We expect this will correspond to your project work packages.
Sub-task name	Enter a more detailed description of the activity related to the task or work item. You can also include key deliverables and milestones as sub-tasks.
Dates	Update the column headers to reflect your project dates. This template Gantt chart is split into quarter years. You can use months, weeks, or days instead if that is more appropriate for your project. Then fill in the cell(s) corresponding to the date range of each task or subtask. Add additional rows and columns as necessary.

2.2 Risk Register

This form should be uploaded as part of Question 6.

You should consider risks and issues of the following types: Operational, Commercial, Technical, Personnel, Health and Safety, Regulatory, Financial, etc.

BEIS recognises that projects of this type are inherently risky. However, it seeks assurance that the projects it funds have adequate arrangements for managing this risk.

Field	Guidance
Risk description	Enter the details of the potential risk to your project. Many factors could present a risk to your project. Every project will have different risks.
Likelihood (low, medium, high)	Select the how likely this risk is to occur. • Low: < 30% • Medium: 30% – 70% • High: > 70%
Description of impact	Describe the potential impact of the risk occurring. Impacts could include but are not limited to: • delays to reaching important milestones • going over your budget • needing to find other suppliers • having to replace equipment • stopping the project altogether
Level of impact (low, medium, high)	Select the level of impact this would have on the project if it occurs. • Low: minimal impact on timing and quality of project delivery • Medium: project achieves some but not all objectives and deliverables • High: project may not be completed successfully or would only be completed with delays lasting months or more
Mitigation	Describe what measures you'll take to prevent this risk from happening, or minimise its impact if it does occur Common examples of risk mitigation include: • work processes and procedures • insurance policies

	• legal agreements between you and partners, suppliers, or contractors • contingency plans
Mitigation risk assessment (red, amber, or green)	Select a risk factor appropriate to the information you've given in the previous columns. The examples are below are for guidance. You should use your own judgement to classify a risk. • Red: impact and likelihood are high, or a combination of high and medium • Amber: impact and likelihood are medium, or a combination of high and low • Green: likelihood and impact are low, or a combination of low and medium You could also classify risks as amber-green or amber-red if needed.

2.3   Project Cost Breakdown Form

This form should be uploaded as part of Question 8.

Your project cost breakdown form should combine the costs of all your project partners, if you have any. You need to show clearly how funds will be split between partners. Submit only one project cost breakdown form for the project.

Additionally, please note:

- You can navigate between sections using the bar at the bottom of the worksheet.
- The grey cells in the spreadsheet automatically make calculations based on data you input elsewhere on the sheet – you should not enter anything in these cells
- The blue cells are manual entry boxes or drop-down options
- There are examples of what to enter throughout the sheet

You only need to complete sections if you have costs in the respective categories. For example, if you do not have any planned capital equipment or subcontract use, leave these sections blank.

Summary

Enter the amount of match funding you will contribute to the project.

See Section 6 for more information about the minimum match funding requirements and maximum grant amounts. For example, if you found your project is eligible for a grant of up to 65% of total eligible project costs, you cannot ask for more than this percentage, but you could request less.

Check the values on this sheet after you complete the other sections. The sheet will calculate the total value in GBP of the BEIS grant you are applying for and the total company match funding. Together, the BEIS grant and the match funding should add up to the total eligible project costs.

Partner Breakdown

You should enter the different project partner organisations and the share of the total project costs to be spent by each organisation. The spreadsheet will use these to automatically calculate the total costs in GBP for each organisation.

If you are applying as a sole applicant, the % total cost will be 100%.

Labour & Overhead Costs

List the labour and overhead costs you expect during the project on the table below.

If in a consortium, this should include all partners involved in the project and reflect the amount each of you is allowed to claim, based on the subsidy category guidance.

If your consortium includes a Higher Education Institution, e.g. a university, you should use the HEI-specific sheets to give labour and overhead details, rather than this sheet.

Capital Equipment

Provide information about any capital equipment you will use for your project.

Field	Guidance
Capital equipment description and use	List the items your project needs and their purposes
New purchase or Existing item	Enter the most applicable option: • New purchase if you need to buy the item • Existing item if you already own it
Net price value of item at project start or purchase price	Enter the price of the item when you bought it, or at the start of project. For new equipment, enter the price of the item minus VAT. For items you already own, enter the item's approximate Net Present Value (NPV). This is the value of the item now. Check the price of similar used items to get an idea of how the value of equipment you own.

Residual value at project end	Enter the estimated value of the item at the end of the project
Utilisation of equipment on project	Estimate the proportion of time that the equipment was used on the project. A 50% use would mean 50% of the depreciation becoming net cost
Net cost to project	You should not enter anything in this cell. It will be automatically calculated based on your other entries.

Material costs

Enter the materials you think you will need for the project, including how many units of each and the cost per unit in GBP.

Subcontractor costs

Field	Guidance
Name of subcontractor	Give the name of the company that you will use for subcontract work.
Location of activity	State which country the work will be carried out in. If the work is carried out abroad, you should show how using this subcontractor will have a net benefit to the UK in the main application form text box. If you are applying for Cornwall-based funding, state the county in which the work will be undertaken.
Project role / type of work	Briefly describe the type of work the subcontractor will do for the project.
Reason for sub-contractor	Briefly explain why you need to use a subcontractor. You can elaborate on this more in the main application form text box.
Cost	Enter an estimate or a quote for the total cost for the subcontractor.

Travel & subsistence

If relevant, enter your estimated travel costs on this sheet.

Include brief details about each trip, the reason for it, how much each trip would cost, and how many times a project team member would make this trip over the course of the project.

Other costs

If applicable, you can enter other cost details here. Include a description of the item or service and a brief reason for the other expense in addition to the cost in GBP.

Please see Part 1 Section 2 for more information about eligible and ineligible costs.

Project location

Enter the location information about each project site for every project partner. This includes details about the address, a description of the activities taking place at the site, and specifying what share of the total eligible project costs will occur at each location.

The spreadsheet will automatically calculate the value in GBP of total eligible project costs and value of the BEIS grant requested which will be spent in each location.

Quarterly breakdown

Enter the quarterly cost breakdown by cost category for every quarter from now until March 2025.

These costs should align with the project costs you entered on the other sheets.

HEI Labour costs

Use this sheet if one of your project partners is a higher education institution like a university.

Field	Guidance
Position, name, grade, or role within the project	Name the person and list their role, title, or grade level
% of time allocated to project	Specify the share of working time that the person will have allocated to this project
Total days of project time	Specify the duration over which this person will be involved in the project
Total days worked on project	You should not enter anything in this cell. It will calculate the number of days from the project time duration and percentage of time on this project.
Total project labour costs/staff costs	Specify the amount of money this person would cost for the project.
Day rate	You should not enter anything in this cell. It will calculate the day rate (GBP/day) based on the other information given.

HEI Overhead costs

Use this sheet if one of your project partners is a higher education institution like a university.

Specify the total amount of money you will spend in each category. You can explain or elaborate on in the text box of the application.

Admin support costs should be counted as indirect costs. Directly allocated other costs could include shared costs for example use of facilities.

2.4   Consortium information

This form should be used if you are applying as a consortium with more project partners than fit in the online application.

For each organisation in the collaboration, you will need to enter information about the organisation and a contact person. If the partner organisation has a parent company, please complete the information about the parent company on the second sheet.

If your partner organisation is less than 1 year old, then you do not need to fill in the Turnover date.

Appendix: Technology Readiness Levels

Technology Readiness Levels are an indication of the maturity stage of development of particular technology on its way to being developed for a particular application or product. Below are some broad definitions of the TRLs. To see the equivalent machine learning definitions, please refer to *Technology Readiness Levels for Machine Learning Systems (2021), Lavin, Alexander et al.*

Research		
TRL 1 – Basic Research		Scientific research begins to be translated into applied research and development.
TRL 2 – Applied Research		Basic physical principles are observed, practical applications of those characteristics can be 'invented' or identified. At this level, the application is still speculative: there is not experimental proof or detailed analysis to support the conjecture.
Industrial Research (guideline)		
TRL 3 – Proof of technical concept		Experimental proof of critical technical functions and validation of feasibility for application. Active research and development is initiated. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include showing the performance of critical technical features or components are feasible (even if not yet integrated or representative of real-life environment). This stage is beyond "discovery science" (TRL1) and applied research (TRL2) and investigates a novel technological or scientific advance with some category of application in mind. The scientific principles of the novel or innovative aspect are already characterised with hard experimental data points that enable prediction of

		performance, but the science is not necessarily in the final engineered format. In this stage, analytical and experimental studies measure parameters of interest, characterise properties and performance, and validate the theoretical predictions. For example, with new materials or combinations of materials, a range of formulations or combinations may be tested to explore the boundaries of performance and to select a combination with the necessary properties for commercial exploitation. System components are not yet fully integrated e.g. the lab demonstration of a new photovoltaic material may show desired properties in a controlled atmosphere but applications will require a suitable encapsulation method. Technology principles may be demonstrated in computer models and computer simulated environments where appropriate. A key output from this stage is to identify how results differ from the expected or necessary performance for future applications and where improvement is necessary.
TRL 4 – Lab and Test Bench Demonstrations		Lab and Test Bench Demos of sub-systems & key components. Modelling & experimentation with parameters representing future conditions. Application proof-of-concept. Modelling and experimentation with data or parameters that represent future conditions (cf. TRL4). "Bench" demonstrators' show that the core technology components or subsystems based on the lab research could be engineered in practice, behave as predicted, and results indicate that the performance needed for a future application is achievable albeit with further optimisation. Bench demonstrations may focus on the key innovative component of the proposed system/product or demonstrate an entire system with simulated inputs or use of substitute subsystems. For large scale technologies the "bench" demonstration may be at smaller scale and would include tests of scale models in tanks and tunnels. If new manufacturing methods will be required, the feasibility of these will be investigated at this stage.
TRL 5 – Development Prototypes		The system, sub-system, components, or sub-scale units are integrated with reasonably realistic supporting

		elements so it can be tested in a simulated or representative environment. Critical cost assumptions are carefully investigated and the feasibility of the proposed manufacturing process is tested. A new manufacturing step may require a separate "product development" process for the manufacturing equipment. Prototype components and sub-systems are developed and improved to show that all the proposed technical components can provide the performance which will be required for future application (including: longevity, reliability, energy efficiency). Representative hardware and software components are tested in way that realistically simulates anticipated operating conditions or allows realistic predictions to be made. A relevant environment may be: laboratory test rigs with simulated use conditions, a controlled operational environment, or basic field tests. A test rig for new component technologies may be a version of the end-product. Intended functionality, size/form factor, and performance features are known at this stage. Successful development prototypes (components) become the basis for a demonstration prototype for full field tests.
Experimental Development (guideline)		
TRL 6 – Engineering or Demonstration Prototype		Full-scale system in representative conditions - Engineering Prototype. Representative full-scale prototype system is tested in a relevant environment. Proof-of-application. Critical cost factors and new manufacturing capability are refined at this stage e.g. use of cost effective materials, demonstration that new components can be manufactured, demonstration of any new manufacturing steps or processes. Not all secondary interfaces or user features are (necessarily) available yet. Representative prototype is demonstrated in a relevant environment to prove engineering feasibility. The component/sub-system designs selected at previous stage are validated. Demonstration prototypes are typically fitted with a range of monitoring/measurement systems and operated in real-life systems and conditions with continual

		adjustment to confirm or optimise performance claims. Core functionality, size/form factor, and benefits of the proposed product should all be demonstrable but not all end-user features or interfaces are necessarily available at this stage. Some third part measurement validation or tests are usually best done at this stage (particularly to validate improved performance over other technologies or to confirm any necessary certification and approvals that need to be obtained).
TRL 7 – Operational Prototype (Alpha Product)		Near or at planned operational system, requiring demonstration of an actual system prototype in an operational environment. Prototype for prolonged use at "tame" client or user site. All planned functions, interfaces integrated for monitored trials under the developer's control. Alpha product prototypes are at or close to the proposed final product configuration which can be fully tested in an "in-house" trial in operational or client-like environments with integration to all systems or interfaces which will be experienced in-use. Alpha trials should validate in-use performance and also test the following: integration to all other relevant systems, features needed to support proposed installation and maintenance procedures, exposure to all other influences likely to be experienced in the "user-environment" etc. All the manufacturing steps will be tested at this stage and repeatable samples provided. Third party specialist tests would be done at this stage if not possible earlier. Prototypes may have minor re-designs following alpha tests but should not be subject to major re-designs if earlier stages have been completed properly. "In-house" means the developer runs and the trial and has access to the system(s) during the trial. Performance is not public but Alpha tests could be at "tame client" sites. Companies would not typically expect to sell prototypes at this stage.
TRL 8 – Production Prototype (saleable Beta product)		System Incorporated in Commercial Design - Production Prototype (or process). Development is complete, final design and feature set, limited release to appropriate number of clients, all fulfilment procedures trialled and documented. Trials under client / users control and operation. Technology is proven to work - technology

		design for production or roll-out is completed and qualified through test and demonstration.
		Development complete, final design and feature set, limited market release to appropriate number of clients, all fulfilment procedures trialled and user documentation complete. Saleable product. (cf. TRL 8 / 9)
		A beta or pre-production prototype is the configuration which the venture expects to sell repeatedly. These designs are finalised to a product specification and ready for repeat production. Client trial would validate: all the features and functions of the system perform as needed under expected conditions.
		A full product beta test includes trialling sales processed (to some extent by signing up "beta-clients"), delivery and installation procedures, integration and commissioning procedures, instructions for use, monitoring, support and maintenance procedures. Suppliers will provide short-runs of components or assembled product. There needs to be a sufficient number of beta-sites to validate the product or solution is repeatable and reliable. At the end of a successful beta test the company should be in a position to sell the product to a client for reliable on-going use.
		Repeated sales may be measured in 10's or 1000's depending on the technology and the cost of making iterations or improvements to the product design. However, by the above staged process, when the "beta" product prototype is prepared the venture has confidence that they could make repeated sales which will not require a re-call or levels of remedial support that would hamper the company's future progress.
TRL 9 – Marketable Product		Marketable Product: proven in repeated use - Product being sold in market, scaling up sales volumes. Actual application of technology is in its final form - Technology proven through successful operations.

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