



Department for
Business, Energy
& Industrial Strategy

The Energy Entrepreneurs Fund

Phase 8A Guidance Document

February 2021



© Crown copyright 2021

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3 or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

Any enquiries regarding this publication should be sent to us at: entrepreneur@beis.gov.uk

Contents

Part 1: BEIS's Energy Entrepreneurs Fund – Summary	5
1. The Energy Entrepreneurs Fund – Overview	5
1.1 Definition of Industrial Research	6
1.2 Definition of Experimental Development	6
1.3 Definition of Feasibility Study	6
2. Acceleration Support	7
3. Application and Assessment Process	8
4. Eligibility for funding	11
4.1 General conditions:	12
5. Funding Levels and Subsidy Requirements	13
5.1 Funding for Small Innovative Start-ups	14
5.2 Funding for All Other Applicants	15
5.3 Public funding	17
6. Eligible Technology Areas	18
6.1 Eligible Technology Areas	18
7. Project Plans, Finances and Financial Viability	19
7.1 Project Plans	19
7.2. Project Lead	20
7.3 Project Costs	20
7.4 Sub-Contract Use	20
7.5 Overhead Rates	21
7.6 Financial viability checks	21
7.5 Grant Use	21
8. Assessment Process and Criteria	22
9. Notification	24
10. Feedback, re-application and right of appeal	24
11. Confidentiality and Freedom of Information	24
Part 2 - Completion of the Application and Finance Forms	25
1. Completion of the Application Form	25
1.1 Summary Information, Contact Details and Business Information	25

1.2 Project Description and Company Status _____	29
1.3 Business Proposition: Market, Competitive Landscape and Route to Market _____	29
1.4 Innovation _____	33
1.4 Impact on Climate Change Targets and/or Security of Supply _____	37
1.5 Project Plans _____	39
1.6 Project Funding _____	43
1.7 Experience and Skills _____	47
1.8 Public Statement _____	48
1.9 Scoring Guidance _____	49
2. Completion of the Entrepreneurs Fund Project Cost Breakdown Form _____	50
2.1 Project Quarterly Breakdown Worksheet _____	50
Appendix 1 – Eligible Costs _____	52
Appendix 2 – Technology Readiness Levels (TRLs) _____	53

Part 1: BEIS's Energy Entrepreneurs Fund – Summary

1. The Energy Entrepreneurs Fund – Overview

The objective of the Energy Entrepreneurs Fund (EEF) is to support, through capital grants, the development and demonstration of innovative technologies and/or processes in the areas of energy efficiency, power generation, heat generation and energy storage.

The scheme seeks the best ideas, irrespective of source, in these areas from the public and private sector. However, the scheme particularly aims to assist small and medium sized enterprises, including start-ups. Those companies that are selected will receive acceleration support.

The Energy Entrepreneurs Fund has already launched seven phases – the first in August 2012, the second in June 2013, the third in January 2014, the fourth in November 2014, the fifth in October 2016, the sixth in October 2017, and the seventh in July 2018. Between Phases 1 to 7, EEF has supported 156 projects to develop innovative, low carbon products across a wide range of technologies. These were awarded grants to a value of c. £72m.

Since the launch of EEF 7 the UK Government has committed to a 100% decarbonisation target by 2050 (rather than the previous 80%), and a 78% decarbonisation target has been proposed for 2035 by the Committee on Climate Change in their 6th Carbon assessment published in December 2020. It is therefore imperative that EEF8A seeks ideas from industry that can be accelerated towards commercialisation in order to meet these ambitious targets.

We are now launching Phase 8A of the Energy Entrepreneurs Fund with up to £11 million available. Expressions of interest are required by **12pm noon BST on 26th February 2021** and the deadline for applications is **12pm noon BST on 30th March 2021**.

Only one proposal per applicant may be submitted. Companies can apply for up to £1m grant per proposal, depending on the subsidy requirements outlined in Section 5.

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

- the potential impact of the innovation on 2050 Net Zero targets or security of energy supply
- the technical viability of their innovation and a coherent development plan that will commercially progress the innovation
- value for money, including cost reduction potential
- the size and nature of the business opportunity

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 5.

1.1 Definition of 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.

1.2 Definition of 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.

1.3 Definition of Feasibility Study

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. Acceleration Support

The scheme will provide acceleration support to successful applicants. This support will focus on helping the applicant to prepare commercial plans and actions that will increase the chance of successfully bringing the innovation to market or reduce the time to market.

The starting point for acceleration support is to consider the current stage of commercial preparation and identify (with the applicant) critical next steps, business strengths and gaps, benchmarked for the stage of the individual business across all key capabilities namely:

- Market understanding
- Business development and sale
- Strategy and Business Planning
- Technology
- Product
- Supply chain and operations
- Team
- Funding and investment readiness

Specialist advisers will be assigned by BEIS to support the company in the development of the appropriate knowledge and skills. This may include but will not be limited to services such as:

- Market research, segmentation and validation of market requirements
- Assistance to determine route to market and engaging industrial partners
- Intellectual property advice
- Evaluating alternative commercial strategies and support with business planning
- Investment readiness/fund raising support

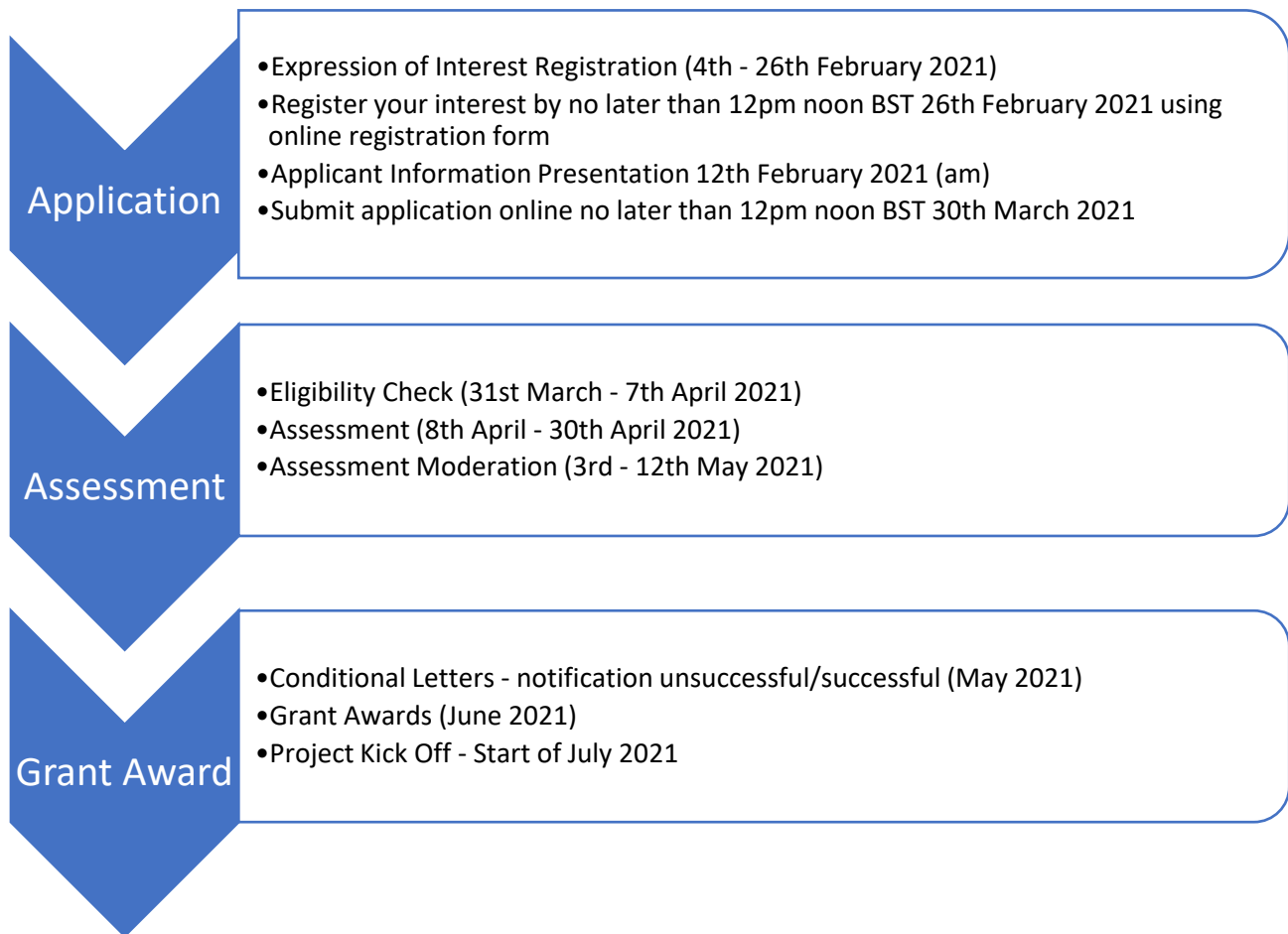
All proposals that are awarded funding under this scheme will undergo assessment for acceleration support requirements. This planning session will be conducted by the BEIS Supplier appointed to deliver Acceleration Support.

BEIS have designed this strand of the Energy Entrepreneur's Fund to help ensure that grant recipients achieve maximum commercial impact from the grant. Therefore, receiving the identified acceleration support is a condition of the grant award and grant recipients are required to co-operate with both the Acceleration Planning Session and the Acceleration Manager who will oversee the delivery of the acceleration support. Any failure or refusal to support this element of the programme will result in termination of the grant.

Participants will also be asked to collaborate in monitoring and evaluation activities and to provide feedback on support provided through the programme.

3. Application and Assessment Process

The following dates are applicable to the Phase 8A of the Energy Entrepreneurs Fund:



Phase 8A Timings: Launch February 2021

As outlined in the diagram above, the EEF competition process will be undertaken in three key stages comprising application, assessment, and grant award.

Stage 1: Application

Bidders are asked to submit a competition application form, with supporting information by **12pm noon BST, 30th March 2021**. The notes below explain the details of the application process:

- **Online Registration Form:** You must first register via the online registration form to be entered into Phase 8A of the Energy Entrepreneurs Fund. Once the registration form is submitted you will receive a password for the online application form. Those applicants that do not register will not be able to access the online application form. You must register your interest by **12pm noon BST 26th February 2021**, the online registration form will be closed after this time. There is no obligation for you to submit an application if you register.

-
- **Questions about the Competition:** If you have any questions on the competition process after reading these guidance notes, please submit them to entrepreneur@beis.gov.uk. All questions should be submitted by 12pm noon BST, 26th February 2021. Questions submitted after this date 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 website by 5pm BST 5th March 2021.
 - 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: **12pm noon BST, 30th March 2021**. The online application form will be closed for submissions after this time.
 - *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.
 - *Submission Content:* Each online application must include the following documents:
 - Completed Application Form ([the online application form can be found here](#)).
 - Completed Project Cost Breakdown Form (this should be uploaded in the Finance Section of the assessed criteria in the application form).
 - Completed high level project Gantt chart or project plan for the project proposed to be uploaded in the Project Plans section of the assessed criteria in the application form.
 - Completed risk register for the project proposed to be uploaded in the Project Success Factors, Risks, and Management section of the assessed criteria in the application form.
 - Optional: additional letters of support or other supporting information can also be submitted in the final section 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.
 - **Submission Costs:** You will not be entitled to claim from the Department any costs or expenses that you may incur in preparing your bid, whether or not your proposal is successful.

Stage 2: Assessment

Applications will initially be assessed against the Eligibility Criteria in Section 4. 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.

The eligible projects will be further assessed against the assessment criteria described in Section 8 (Assessment Process and Criteria), by four reviewers, including 3 technical reviewers and one commercial reviewer, these scores will then be moderated to determine an overall ranking list that will be used to allocate the funding for the Competition.

Technical and commercial reviewers will assess against the specific criteria summarised below and described in more detail in Section 8:

- Business Proposition
- Level of Innovation
- Impact on energy and climate targets and/or security of supply
- Project finances, Value for money, including any cost reduction potential
- Market viability and potential for commercialisation
- Project plans
- Experience and skills

The technical reviewers will be both internal and external low carbon technology professionals appointed by BEIS, and the assessments will be quality assured by BEIS. To be eligible to receive funding, a project must also be allocated a minimum total score of 60% against these assessment criteria.

The reviewers will consider the Project Criteria as listed above 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. The role of the commercial reviewer is to advise the technical review as to the suitability of the technology for market investment.

After the assessment stage, 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 and assessed. Feedback will be given at the same time the successful/unsuccessful letters are sent to the applicants.

Following notification of a successful application, the eligible costs of proposals will be checked, and the company's financial viability confirmed (See Section 7 for more detail). Any funding pre-requisites identified will be conditions of the grant. It will be a requirement before issuing the grant that a clear credible plan exists to raise the required company contribution to the work. Where due diligence checks identify any issues with the applicant's

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.

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

Stage 3: Acceleration Planning

The Energy Entrepreneurs Fund has provided complimentary Incubation Support Services alongside the successful applicants grant project since Phase 1 of the fund. These services, now known as Acceleration Support, will continue to be provided alongside the successful applicants grant project. However, the Acceleration Support contract is currently in the process of being re-tendered and therefore may not be in place at project kick off for successful applicants. In these circumstances the Acceleration Planning meeting will be organised and held as close to project kick off as possible. A meeting will be set up with the applicant, the acceleration co-ordinator and manager, and a BEIS official (most commonly your project monitoring officer). Receipt of the identified acceleration support is a condition of the grant.

N.B. Ideally the Acceleration Planning meeting will be held before project kick off to help identify any actions that need to precede the innovation development project. In such cases funding may be provided at BEIS's discretion to help carry out these actions and the milestones in the project plan amended accordingly.

4. Eligibility for funding

To be eligible for funding, proposed projects must meet all of the following criteria:

Innovation and technology readiness:

The project is at Technology Readiness Level (TRL) 3 or above (Critical Function or Proof of Concept Established). See Appendix 2 for more information.

Projects must fall within the definitions of industrial research, feasibility study or experimental development (as described above in Section 1) and be eligible under the subsidy requirements described in Section 5 of this guidance.

Project Status:

BEIS is unable to fund retrospective work on projects. The value of retrospective work may, however, be considered in the assessment process.

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 Appendix 1).

Match-funding:

Given the subsidy categories, applicants will need to have private funding in place to cover the balance of the eligible costs. Such funding may come from a company's own resources or external private sector investors but may not include funding attributable to any public authority. The match funding must be at least 10% of the total project costs. Before the grant letter is issued, the applicant will need to demonstrate a credible plan to raise the match-funding required for the whole lifetime of the project. This needs to be evidenced - for example by relevant bank statements or letters showing intention to invest into the applicant.

Project Location:

Over 50% of the project's activities must be conducted in the UK.

Grant size:

The total requested grant does not exceed £1m. The maximum total project value must not exceed £2.5m. Since BEIS is seeking to maximise the impact of government funding, projects looking for public funding intensities that are lower than the applicable maximum are likely to score higher in the appraisal process.

Technology scope:

The project must fit within one of the technology areas defined in Section 6.

Project duration:

All grants will end no later than 31st March 2024. All work carried out under the grant must be completed by this date. BEIS will not meet claims for any work carried out on, or after 31st March 2024.

4.1 General conditions:

Companies of any size are eligible to seek funding. Applications from SMEs, as defined in Section 5 are particularly encouraged.

Applicants who did not receive funding in the Energy Entrepreneurs Fund Phases 1 to 7 will be eligible to re-apply for funding in this phase. However, applicants are only permitted to submit an application for the same technology development project twice. If they are unsuccessful on both occasions, they are not allowed to resubmit the same project a third time.

Successful applicants from Phases 1, 2, 3, 4, 5, 6 or 7 may apply for funding for additional activities or new projects under this phase. This work must extend the scope of the previous work to new applications or processes. There will be no advantage for existing EEF projects applying for further funding in the application process, as all applications will be treated on an equal basis in accordance with the competition criteria. You will be asked to declare any previous EEF applications during the application process. Failure to declare previous applications to the Fund will result in failure of the Eligibility Criteria to proceed to assessment.

An individual organisation may not submit more than one application to a specific funding phase.

5. 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 for the EEF 8A are specific to this Competition only.

Subsidy Control

The EEF 8A 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 our international commitments on subsidies in the UK-EU TCA, and other trade agreements, as well as the WTO rules on subsidies¹. 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 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 also be subject to scrutiny from the European Commission in accordance with Article 10 of the Northern Ireland Protocol in the UK/EU Withdrawal Agreement².

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.

¹ <https://www.gov.uk/government/publications/complying-with-the-uks-international-obligations-on-subsidy-control-guidance-for-public-authorities>

² <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>

Maximum Subsidy Thresholds

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 projects'.

The size and type of funding that the project can receive will depend upon the type of applicant and which aid category they qualify under. These can broadly be defined as "small and innovative start-ups" and "all other applicants".

5.1 Funding for Small Innovative Start-ups

Small start-ups applying under this scheme may be eligible to be funded under "Aid for start-ups". In order to be eligible, the company must be:

- A small business (including micro businesses) as defined in 'Business Definition' below
- In existence for less than 5 years and not listed on any stock exchange
- Not have taken over the activity of another company, not yet have distributed profits and have not been formed through a merger

R&D expenses must represent at least 10% of total operating expenses in at least one of the three years preceding the date of application or in the case of a start-up without any financial history, in the audit of its current fiscal period, as certified by an external auditor.

These applicant(s) to the scheme will be eligible to receive up to £1m of grant funding for a project under 'Aid for start-ups'. The minimum company contribution that can be provided for a project is summarised in Table 1 below. Applicants within this subsidy category requesting grant funding of up to and including £500,000, will be required to demonstrate a cash match of 10%. Applicants within this subsidy category requesting grant funding of over £500,000 will be required to demonstrate a cash match of 20%.

Table 1. Minimum company contribution for projects qualifying under 'Aid for Start-ups'

Grant funds requested	Minimum company contribution required
≤ £500,000	10% of the grant funds requested
> £500,000	20% of the grant funds requested

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, as a 'Small Innovative Start-up' you are not eligible for the "Aid for start-ups" category defined above (e.g., have been in existence for over 5 years, or have not spent 10% of total

operating expenses in one of the last 3 years on R&D) then it is still possible to qualify for funding under the All Other Applicants scheme as detailed in Section 5.2.

Business Definition:

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	Staff headcount	Turnover	OR	Balance sheet total
Medium-sized	< 250	≤ £45m		≤ £39m
Small	< 50	≤ £9m		≤ £9m
Micro	< 10	≤ £2m		≤ £2m

The businesses that fall into the categories defined by the table are classed as Small and Medium Enterprises (SMEs). A large business in this context means any enterprise which is not a SME.

5.2 Funding for All Other Applicants

The scheme is also open to:

- all SMEs (including Small and Micro Enterprises who do not qualify above)
- other private sector organisations irrespective of size
- collaborative proposals
- ‘research organisations’ as defined below. It is expected that these will be part of a collaborative proposal, preferably with a SME partner.

These applicant(s) to the scheme will be eligible to receive up to £1m for funding a project under ‘Aid for research and development projects’. The maximum percentage of public funding that can be provided for the project is summarised in Table 2 ‘Maximum public funding for projects qualifying under ‘Aid for Research and Development’.

Research Organisation Definition:

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 (higher education institutions)
- 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.

Table 2: Maximum public funding for projects qualifying under ‘Aid for Research and Development.

Research Category	Size of Enterprise	Maximum amount of aid towards eligible Project Costs
<i>NOTE: If you are applying as a “Small Innovative Start-up”, this table is not applicable please refer to section 5.1.</i>		
Feasibility Study	Small	70%
	Medium	60%
	Large	50%
Industrial Research - Single Companies	Small	70%
	Medium	60%

	Large	50%
Industrial Research - Collaborations (either Business to Business or between Business and research organisations)	Small	80%
	Medium	75%
	Large	65%
Experimental Development - Single Companies	Small	45%
	Medium	35%
	Large	25%
Experimental Development - Collaborations (either Business to Business or between Business and research organisations)	Small	60%
	Medium	50%
	Large	40%

The figures represent the maximum aid intensity that BEIS will provide under EEF Phase 8A.

If you are applying as a collaboration, you must also submit a copy of the Heads of Terms³ for your collaboration agreement. BEIS will review the collaboration agreement before issuing the Grant Offer Letter to ensure that proposed collaborations are viable and robust.

Please note: if you are applying under ‘Aid for research and development projects’, you will be required to demonstrate that your project falls within the definition of industrial research, experimental development or feasibility study as defined in Section 1.

5.3 Public funding

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. Such funding includes grants or

³ Heads of Terms as a minimum

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.

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 tested (Part 2, 1.6 – Project Funding). Applicants will need to demonstrate why public funding is required to deliver this project.

6. Eligible Technology Areas

The EEF is open to applications for innovative technology development and demonstration projects in the areas of energy efficiency, power generation, heat generation and energy storage.

6.1 Eligible Technology Areas

These areas will be considered in their broadest context and support could be given to proposals that whilst helping achieve the 2050 Net Zero targets, might also demonstrate any of the following:

- Improved performance characteristics over existing technologies or products
- Novel component technologies that can be implemented in existing systems to deliver improved performance or reduced costs of the system
- Products, processes or technologies that can reduce the cost of installation or maintenance of existing systems

Types of technology supported may include, but not be limited to, those listed in Table 2.

The scheme will only fund innovations that are Technology Readiness Level (TRL) 3 up to TRL8. TRLs provide an indication of the level of maturity of a particular technology and BEIS descriptions of the TRLs is provided in Appendix 2. 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.

Table 2: Examples of Technology Areas Supported

Energy Efficiency and Building Technologies	Power Generation and Energy Storage
Insulation, glazing and ventilation technologies	Fuel cell technology
Building control systems	Control systems for micro and distributed generation
Novel or improved building fabric	Solar (including third generation and organic PV)
Advanced lighting systems	Energy or fuel from waste or waste heat
Space heating and cooling technologies	Energy storage technologies including heat and electricity storage, batteries, Super-capacitors and flywheels
Improved design, surveying or measurement technology	Ground source, water and air source heat pumps
Manufacturing systems, installation and integration processes that reduce costs	Electricity network process or technologies to support integration and deployment of low carbon generation or storage technologies
Energy demand reduction technologies	Bio-fuels (including advanced conversion)
Energy efficient motors and/or pumps (beyond EU Eco-design Directive requirements)	Wind Technologies (including new component technologies to reduce costs)
Installation and/or technology integration techniques	New Marine devices (including second generation tidal stream)

7. Project Plans, Finances and Financial Viability

7.1 Project Plans

Projects can be up to 36 months in duration. All projects must be financially complete by 31st March 2024 All projects must submit a detailed Gantt chart, or equivalent as part of

their application, which details the project timeline, the various work packages and the project milestones.

7.2. Project Lead

BEIS specifies that there should only be **one lead company assigned to each project proposal**. Grant Offer Letters for successful applicants will be made out to the delegated lead company 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 company.

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.

7.3 Project Costs

All applicants must complete the Energy Entrepreneurs Fund Project Cost Breakdown Form detailing their expected expenditure and spending profile for the project on a quarterly basis. Further details about this form can be found in Section 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 Finance Form to be our guide to project expenditure through delivery and costs should not vary significantly from this without prior agreement of the Department.

7.4 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.

N.B., We welcome university partners when they can add value, 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.

7.5 Overhead Rates

Overheads are additional indirectly incurred costs that are necessarily incurred by the applicant in undertaking the work. 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 will pay overhead rates between 10% and 40%. The overhead rate is agreed with BEIS before the Grant Offer Letter is issued and cannot be changed during the work.

7.6 Financial viability checks

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

Where a business 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 business 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 use of public money within which it operates.

7.5 Grant Use

Companies 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).

8. Assessment Process and 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.

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.

We will select projects that offer the best value for money taking account of the following areas:

1. Business Proposition – Questions 1 & 2 (20% weighting split equally between Q1 & Q2)
For this aspect of the proposal assessors will consider a range of questions. These will include (but not be limited to) the following: <i>Is the market need compelling?</i> <i>How large is the addressable market? (niche/small/medium/large) Nature of the market and ease of market penetration?</i> <i>Does the route to market and business model make sense?</i>
2. Innovation – Questions 3 & 4 (15% weighting split equally between Q3 & Q4)
For this aspect of the proposal assessors will consider a range of questions. These will include (but not be limited to) the following: <i>How innovative is the project? Is it a simple improvement on an existing product?</i> <i>How significant is the potential advantage which this innovation offers over existing solutions or alternative technologies that can meet current market needs?</i> Can the innovation be protected?
3. Impact on Climate Change targets and/or security of supply – Question 5 (20% weighting)
For this aspect of the proposal assessors will consider a range of questions. These will include (but not be limited to) the following: <i>To what extent does the proposed project offer a potential impact or contribution towards the UK's 2050 Net Zero targets?</i> <i>How strong is the case for reducing the costs of meeting the UK's emissions targets?</i>

How big are the relative savings against existing products, processes and technologies?

To what extent does the proposed innovation offer a potential impact on security of supply? How does this compare with existing products, processes and technologies?

Further information regarding the type of information to be provided can be found in Part 2, 1.2 of this document.

4. Project Details – Questions 6 & 7 (20% weighting split equally between Q6 & Q7)

For this aspect of the proposal assessors will consider a range of questions. These will include (but not be limited to) the following:

Is the technical and methodological approach appropriate to the needs of the project and are the innovative steps achievable through the proposed approach?

Is the project plan sufficiently detailed in comparison to the complexity of the project? Is the timing of key milestones realistic?

Has the applicant demonstrated sufficient resource commitment and capability to undertake the project?

5. Project Funding – Questions 8 & 9 (15% weighting split equally between Q8 & Q9)

For this aspect of the proposal assessors will consider a range of questions. These will include (but not be limited to) the following:

Is the budget realistic for the scale and complexity of the project? Has the applicant provided a realistic budget breakdown?

Do the work packages align with the predicted spend profile shown on the project cost breakdown form?

How strong is the case for added value of public funding?

Assessors will also consider whether or not the proposal offers a good value for money.

6. Experience and Skills – Question 10 (10% weighting)

For this aspect of the proposal assessors will consider a range of questions. These will include (but not be limited to) the following:

Does the business have the right, available mix of skills and experience to deliver the project successfully?

Is appropriate use being made of sub-contractors where in-house skills are either insufficient or not available in the right timeframe?

Where sub-contractors are being used, does the management team have experience of managing external contractors? Can any skills gaps be addressed by the acceleration support?

9. Notification

Applicants will be informed by email whether their application has been successful, subject to compliance with the terms and conditions of the Conditional Offer that will be received.

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 absolutely 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 Energy Entrepreneurs Fund at BEIS before doing so.

10. Feedback, re-application and right of appeal

A short summary of key feedback regarding the applications will be provided to all applicants, this feedback will be based on the summary comments of 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.

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

11. 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.

Part 2 - Completion of the Application and Finance Forms

1. Completion of the Application Form

This section aims to guide you through the completion of the online Entrepreneurs Fund Application Form. It is important that a response is provided to every question. This guidance is intended to explain what type of information applicants should consider providing to BEIS in order to assess their application effectively.

Applications will be judged based on the information provided in the application form and any supporting information provided. There will not be the opportunity to enter into discussion about your project with the assessors or BEIS. These guidance notes are not intended to be exhaustive; applicants are expected to develop their own responses based on your own skills, knowledge and experience. You are encouraged to be concise and to the point whilst providing all the necessary and relevant information.

Throughout the form there are boxes, in order to answer the question or provide information you should simply click on the box and begin typing or select from the drop-down menu. Questions do have word limits and when the text has reached the word limit you will not be able to add any further information and the text must be edited to fit within the word limit.

Any graphs, diagrams or supporting evidence that you are providing to support your application should be uploaded to your submission.

1.1 Summary Information, Contact Details and Business Information

The initial section of the application asks you to provide details about your organisation.

Section/Field	Guidance
Summary Information	
Names of business	Provide the name of the lead applicant business
Project Title	A brief title that can be used to summarise the project
Estimated start date	Select the month you would propose to start work assuming successful funding
Project duration	Enter the expected duration in months, taking into consideration the maximum project length of 36 months
Location of Main Project Activity	Give the location and postcode in the UK where the majority of the project activity will be taking place.
Total Project Costs	This figure should match the figure calculated in the Entrepreneurs Fund Finance Form. It should be the total value of the project including all eligible costs.
Company contribution	This is the amount of total eligible project costs that you will be paying from your own resources/private sector investment into the project.
BEIS Grant Applied for	This is the amount you will be asking for from the BEIS. You should ensure that you do not request a grant higher than the maximum allowed, taking into account all public-sector funding for the project.
Grant Funding requested as percentage of total funding	This is the percentage of total costs that the grant makes up. It cannot be more than you are eligible for as set out in Section 5.
TRL at start of project	Select the TRL from the drop-down menu that most accurately represents your technology at the start of the project. A list of TRL definitions are provided at Appendix 2.

TRL at end of project	Select the TRL from the drop-down menu that most accurately represents where your technology will be at the end of the project. A list of TRL definitions are provided at Appendix 2.
Contact Details	Name and details of the person who will be the main point of contact for the application process
Organisation Name	Provide the full registered name of the organisation applying for funding
Business Type	Please select from the drop-down menu
Number of employees (including directors)	Number of staff in your organisation (this will help us confirm the nature of your company)
Number of employees that will be directly involved in the proposed project	State the number of employees from your company that you expect to be directly involved in the project you are proposing.
Business Registration Number	Your business registration number as listed by Companies House.
Turnover (in most recent annual accounts)	Please provide your most recent turnover figure from annual accounts and the date of those accounts
Balance Sheet Total (total assets net of depreciation)	Please provide your most recent balance sheet total (total assets net of depreciation) and the date of the calculation.
Business maturity	Please enter the age of the business since its formal formation, this includes any periods of dormancy with Companies House.
Does the business have a parent company?	We need to understand if there any significant shareholders in your business. The parent company details should be provided in the Parent Company details section.

<p>How has the business been funded?</p>	<p>Please select all the types of funding that your company has received to date.</p>
<p>Which aid category are you applying under?</p>	<p>You must select one of the subsidy categories from the drop-down list. The options are:</p> <ul style="list-style-type: none"> • Aid for Start Ups – Small Innovative Start Up • Aid for Research and Development projects – Industrial Research • Aid for Research and Development projects – Feasibility Study • Aid for Research and Development projects – Experimental Development <p>For more details on the subsidy requirements, see Section 5 of these Guidance Notes. You must indicate that you comply with the financial obligation rules by providing the relevant information.</p>
<p>If you selected Aid for Start Ups you must have spent more than 10% of operating expenses on R&D in one of the last 3 years. Please provide details below.</p>	<p>If you are applying under Aid for Start Ups, then you must have spent more than 10% of operating expenses on R&D in one of the last 3 years, or, in the case of a start-up without any financial history, in the audit of its current fiscal period, as certified by an external auditor. Please fill out the table in the online application form.</p>
<p>If you are applying under Aid for Research and Development projects, is this a collaborative project?</p>	<p>If you are applying collaboratively, please provide details of the partner organisations in the Entrepreneur Fund Partner Details Form.</p> <p>If you are applying as a collaboration you must also submit a copy of formal Heads of Terms agreed between all the collaborators.</p> <p>Prior to the issuing of a Grant Offer Letter, you will have to submit to BEIS a copy of the collaboration or joint venture agreement that you propose to work under. You should be aware that BEIS will not issue a Grant Offer Letter until they have seen, reviewed and approved a final draft of this agreement.</p>

	Sub-contracting work to a third party does not classify as a collaboration.
Parent Company Details	If you have a parent company, or are more than 25% owned by another enterprise, you must provide the details of that enterprise here.

1.2 Project Description and Company Status

This section of the application asks you to provide an initial summary of your project and company as an introduction for the assessors.

Section/Field	Guidance
Company Status	<p>This should be a summary description of your company which should set the scene for the assessors and introduce your company.</p> <p>This question is not scored but will be used by assessors to gain a high-level understanding of the company before they start their detailed assessment.</p>

Section/Field	Guidance
Project Description	<p>This should be a summary description of the project which should set the scene for the assessors and introduce your proposed project. You should use language that can be understood by people without specialist knowledge or expertise.</p> <p>This question is not scored but will be used by assessors to gain a high-level understanding of the project before they start their detailed assessment.</p>

1.3 Business Proposition: Market, Competitive Landscape and Route to Market

This section focuses on the business opportunity that you believe exists, the potential return on investment and the products, processes, or outcomes from the project and how you plan to derive value from them.

Section/Field	Guidance
<p>Question 1:</p> <p>What are the business opportunities/market problems that this innovation and project address?</p> <p>Describe the first addressable market for your innovation, including the size of this market. Describe the specific market sub-sectors that will be the initial target markets for your innovation in the first three years of commercialisation.</p> <p>Describe the problem that your innovation overcomes for this target market(s) and the customer value proposition.</p> <p>Describe the competing solutions/technologies to your innovation.</p> <p>Describe the Unique Selling Point of your innovation that enables you to differentiate it from the competition. Describe what independent justification/market research you have to substantiate all the above information.</p>	<p>You should outline the business opportunity and technical solution that you have identified.</p> <p>You should describe the size of the market opportunities that this project might open up, including details of:</p> <p>Current nature of the specific market(s) at which the project is targeted (e.g., is it characterised by price competition amongst commoditised suppliers? Is it dominated by a single leading firm? Is it a UK market or a global one?).</p> <p>The dynamics of this market including quantifying its current size, value, actual and predicted growth rates.</p> <p>For highly innovative projects, where the market may be unexplored, you should explain what its size might be, (national/global), how the project will seek to explore the market potential and what sources you have used to reassure yourself that sufficient demand exists to justify the investment.</p> <p>You should describe the particular problem or issue that is facing your business, marketplace or customers that your innovation addresses.</p> <p>You should explain what the competing solutions to the problem are and what differentiates your innovation from these and why this would be a more attractive solution.</p> <p>You should provide evidence for your statements, including any independent corroboration, about the addressable market for project outcomes and set out any assumptions you have made.</p>

--	--

<p>Question 2.</p> <p>How will the outcomes for the project be commercially exploited?</p> <p>Describe the business model that your company will use to generate value from the innovation (i.e. how will you generate revenue?).</p> <p>Describe the likely route to market for your innovation.</p> <p>Describe and quantify the potential sales pipeline for your business based on the target markets described in Question 1.</p>	<p>You should describe the business model and route to market and how this will generate value / revenue. You should explain what you need to do to address the market described in the previous question successfully, within the desired timeframe and cost.</p> <p>Applicants should list the potential exploitable outcomes of the project such as:</p> <ul style="list-style-type: none"> • Products or services • Processes • Applications <p>You should describe how these outcomes will be exploited including where applicable protection of intellectual property rights, changes to business models and business processes and other methods of exploitation and protection.</p> <p>You should explain your anticipated routes to market, highlighting the initial one(s) and outline your strategy for developing market share. You should explain the projected market share for the project outcome, with justification in the light of any potential competitors.</p> <p>If you have customers or potential customers already in place these should be identified and evidence of their support provided.</p> <p>In addition to the immediate practical exploitation of the outcomes, you should identify and quantify the likely impacts of a successful project on your business and indicate the timelines over which these impacts will be realised.</p> <p>You should provide a potential sales forecast based on the target markets identified previously, showing both sales and revenues.</p>
--	---

	<p>For highly innovative projects, where the market may be unexplored, you should explain what the route to market could or might be.</p> <p>You should provide evidence for your statements, including any independent corroboration, about the route to market for project outcomes and set out any assumptions you have made.</p>
--	--

Assessor's questions to consider:

Question 1: To what extent are the business opportunity and market problem that this innovation and project address compelling?

Is there a clearly identified problem that this innovation is solving?

Has the applicant clearly identified and understood their target market?

For early TRLs (3-5) they may not be certain which markets will be more appropriate but should be able to describe an anticipated target market.

For later TRLs (6-8) justification for market selection would be expected.

Is the market opportunity large enough to support a business?

Does the applicant demonstrate an understanding of the customer value proposition appropriate to its TRL level?

How strong is the evidence for market potential?

Does the venture demonstrate an understanding of the competitive landscape?

Does the innovation have a Unique Selling Point compared to competitor solutions?

Is the overall business opportunity and market realistic and compelling?

Question 2: To what extent is the proposed commercial exploitation of the outcomes for the project realistic?

Has a route to market and business model been identified?

Is the understanding and description of the business model and proposed route to market commensurate with the stage of the technology/project and in your view, is it realistic/does it make sense?

Early TRLs (3-5) may not be certain of their exact business model route to market but should be able to set out reasonable options.

Later TRLs (6-8) are expected to have a better developed understanding of their proposed business model and route to market.

How robust is the case for exploiting the project outcomes to generate value?

Does the applicant demonstrate a realistic understanding of market potential and future sales?

How strong are industry / supply chain relationships? Are these at a level appropriate to the development of the innovation/applicant?

Are the plans to exploit the outcomes of the project realistic?

1.4 Innovation

This section focuses on the degree of innovation in your proposed project, the performance and cost of your innovation and the current and anticipated TRL level. You should complete the table in question 4 in as much detail as possible, where an innovation is at an early stage you should still complete the tables to demonstrate that you have considered these issues.

Section/Field	Guidance
<p>Question 3.</p> <p>What is the current status of your technology and what has been completed or proven to date?</p> <p>Describe how your technology is innovative compared to existing/competing solutions. If appropriate, please include</p>	<p>You should describe the stage of your technology and choose a TRL number.</p> <p>TRL levels indicate the level of maturity of the product or process. Using the guidance in Appendix 2 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.</p> <p>You should detail what has been done to date, (lab or bench demos, component tests, development prototypes, engineering or operational prototypes) and over what timescale.</p>

<p>a photograph and/or schematic as a separate attachment.</p> <p>Describe the probability of overcoming the technical risks on delivering the stated aims of the project.</p>	<p>What is the latest position with the innovation and where is it located? If you were showing the innovation to us today, what would we see?</p> <p>Outline any results that you have had to date and any sources of technology you have used. You should demonstrate the level of reliability and current effective run time (if appropriate) of your innovation.</p> <p>You should describe the evidence you have which substantiates your belief that the intended work is innovative – this should not be based on your opinion alone. Evidence could include the results of patent searches, competitor analyses, literature surveys etc.</p> <p>If applicable, you also should briefly outline your own background IPR, as related to the project. You should also include any data that you may already have collected that demonstrates the performance of the innovation.</p> <p>You should describe the probability (low/medium/high) of overcoming the known technical risks associated with successfully delivery the aims of the project. Describe the approach taken to known technical risks and how you intend to overcome them.</p> <p>You should provide evidence for your statements, including any independent corroboration, and set out any assumptions you have made.</p>
<p>Question 4.</p> <p>Complete the Table below to describe the cost and performance of your technology. Quantify the expected improvements in the cost and performance as a result of undertaking this project.</p>	<p>You should select the type/area of benefit which your innovation offers from the drop-down list. The options are:</p> <ul style="list-style-type: none"> • Cost of Energy reduction • Cost of Process reduction • Greenhouse gas reduction • Energy Efficiency • Conversion efficiency • Other

N.B. Exceptionally, if you have selected “Other”, you must explain this in the text box below the drop-down list.

You should complete the table to describe the current cost and performance of your technology; the expected cost and performance of your technology at the end of the project; and the target costs and performance for your technology within 5 years of commercialisation.

You should specify:

- The unit size of the innovation at each stage
- The estimated performance of the innovation at this size, using industry standard metrics, for example:
 - Conversion ratio
 - Cost per kWh or MWh
 - Efficiency factor
 - Operating level
 - Levelised Cost of Energy (LCOE)
- The estimated cost of each unit of the innovation at that size
- The estimated price per unit
- The estimated sales volume of units
- The estimated gross profit margin per unit as a percentage

You should set out a comparison of your innovation’s costs and performance against incumbent / competing technologies and you should demonstrate the source of your comparators.

You should provide evidence for your statements, including any independent corroboration, and set out any assumptions you have made regarding sales forecast and overheads. You should demonstrate that your margin is sufficient to cover your overheads, i.e. that the business is viable.

	<p>You should describe any infrastructure your innovation may require, including information on how these may change over time or with scale, for example:</p> <ul style="list-style-type: none"> • Geographical location • Site co-location • System integration, inputs or conditions <p>You should describe any environmental impacts directly or indirectly resulting from your innovation. Include how these may vary over time, for example:</p> <ul style="list-style-type: none"> • Emissions • Noise or vibration • Visual intrusion <p>You should describe any regulatory requirements critical to the success of commercialising innovation, including how these may vary over time, for example:</p> <ul style="list-style-type: none"> • Planning consents • Environmental permitting • Other industry specific requirements
--	--

Assessor’s questions to consider include (but not limited to):

Gateway question: Is the innovation technically feasible?

Question 3: To what extent is the TRL chosen an appropriate assessment of the technology readiness based on the description, costs and activities to date?

Is the TRL chosen an appropriate assessment of the technology readiness based on the description, costs and activities to date?

To what extent does the technology demonstrate innovation over existing/competing technologies?

Is the innovation well-planned and based on reasonable technical assumptions and/or proven data points?

Is the probability assigned to the technical risks reasonable? Can the technical risks be overcome?

Question 4: How far does the innovation show performance / cost improvements over incumbent or competing technologies?

Are the costs of the technology well understood?

Does the technology demonstrate an achievable pathway to commercially viable costs?

Will the project result in tangible improvements in performance of the technology?

Does the project contribute to reducing the cost of the innovation?

Does/will the technology demonstrate performance improvements of over incumbent technologies?

1.4 Impact on Climate Change Targets and/or Security of Supply

This section focuses on the impact on climate targets and/or security of supply that you believe your innovation will have.

Any data or references that might help to support your answer that cannot be included in the application form should be provided to BEIS as a separate attachment. These may include for example tables of data, diagrams.

Section/Field	Guidance
<p>Question 5.</p> <p>How will the innovation impact on carbon targets and/or security of supply and over what timescale?</p> <p>For a single unit of your product or service, quantify the tonnes of carbon saved and compare this against the estimated unit costs (given</p>	<p>You should highlight how your innovation will make an impact on climate change targets and/or security of supply. For example:</p> <ul style="list-style-type: none"> • Is it through change in user behavior resulting in reduced energy usage? • Does the innovation reduce the cost of installation and/or maintenance for existing equipment? • Is it through improved performance characteristics of a component or a material leading to greater efficiency?

<p>in Question 4) to give a price/tonne of carbon saved (state all assumptions).</p> <p>Please state the carbon/greenhouse gas emissions savings that your product/service could enable once it is established in the marketplace and over what timescale. Please state the market penetration and sales volume assumptions you have used.</p>	<p>You must quantify the potential impacts on greenhouse gas / CO₂ emissions. Using data provided in previous sections around market size, share and assumptions around market penetration you should highlight the potential for carbon or energy savings.</p> <p>Where impacts are around cost reductions and savings, the size and scale of these should be estimated.</p> <p>You should use the cost information provided in answer to Question 4 to calculate the cost per tonne of CO₂ saved. You should describe to what extent the proposed level of grant from BEIS represents value for money in terms of the future installed system cost per tonne CO₂ saved by that system or product. You should justify this, for example explaining where the product / technology would sit on the Vattenfall/McKinsey abatement curve.</p> <p>You should identify the timescales over which the impact will take place taking into account when the innovation would expect to reach market and its uptake within the marketplace.</p> <p>You should consider whether any technologies that are currently being developed will supersede your innovation. These technologies should be highlighted and the potential impact on the timescales considered.</p> <p>Where possible, you should also provide relative data against existing technologies, products or processes to highlight the comparative savings.</p> <p>Applicants may also wish to consider calculating the payback period for the innovation to demonstrate the benefits of their innovation. Applicants may also wish to consult BEIS's guidance for valuation of energy use and greenhouse gas emissions at the link below. This provides data and information and a toolkit for calculating the impact of changes in energy usage.</p>
--	---

	<p>https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal</p> <p>You should outline your methodology and provide evidence for your statements, including any independent corroboration, and set out any assumptions you have made.</p>
--	---

Assessor's questions to consider:

Question 5: How attractive is innovation's impact on carbon targets and/or security of supply?

Are the carbon numbers quoted EEF project specific?

Does the innovation save carbon directly or is it an enabler?

What is the time of innovation to market?

What is the chance of success of market adoption?

What is the likely scale of market adoption?

What are the likely impacts over different timescales?

What are the comparative benefits against similar technologies?

Does the technology represent (or potentially enable) reduced carbon abatement costs respective to its target market?

Is the offered impact on 2050 targets or security of supply attractive at this stage of development?

When commercialised, would this technology offer an impact on carbon targets or security of supply in its target market?

1.5 Project Plans

This section focuses on what work you plan to do during your project, the key milestones and timings, risks associated with the project and how you propose to manage the project. A project Gantt chart (or similar) should also be submitted as a separate file. The details provided below should match what is provided in the Gantt chart.

Section/Field	Guidance
<p>Question 6.</p> <p>Describe the Scope of Work, key work packages and milestones for the project.</p> <p>Describe the technical approach which is being taken to develop and demonstrate the technology.</p> <p>Include an explanation as to why this is the most suitable technical approach.</p> <p>List other individuals / organisations that you plan to contract/work with as part of delivering this project.</p> <p>Describe how the components you are proposing to develop are different from those already commercially available.</p> <p>Describe where the innovation will be at the end of the project and state what TRL you expect to have reached.</p>	<p>You should describe the programme of work you intend to undertake with the funding.</p> <p>You should provide an overview of the technical approach you propose to take including the main objectives including an estimate of the minimum level of technical or cost performance that the proposed project needs to demonstrate (how big a step is this?).</p> <p>You should include alternate R&D strategies that could be used and explain why the approach you have chosen will provide better outcomes.</p> <p>The timeliness and novelty of the research aspects of the project should be highlighted and explained in an industrial/business context.</p> <p>Identify the key milestones of the project and any interdependencies between the various work packages. Applicants should also outline the key deliverables for the project.</p> <p>Identify any go/no-go decision points in the project (e.g., dependencies on achieving particular performance milestones or component solutions).</p> <p>You should identify who will be carrying activities out (including any collaborators, customers, suppliers, subcontractors, research organisations, certifying bodies, etc.) and outlining the resource and management requirements and highlighting any sub-contracted work and how you propose to manage the project. This includes demonstrating sufficient resource commitment and capability to undertake the project, with clear management reporting lines identified.</p> <p>Using the guidance in Appendix 2, you should choose the TRL they feel will be most appropriate to your innovation at the end of the proposed project. You should justify the TRL which you have selected.</p>

	<p>You should demonstrate the expected level of reliability and effective run time (if appropriate) of your innovation by the end of the project.</p> <p>If you were showing the innovation to us at the end of the project, what would we see?</p> <p>You should provide evidence for your statements, including any independent corroboration, and set out any assumptions you have made.</p>
<p>Question 7.</p> <p>What are the project success factors, risks and management for these?</p> <p>Describe the top three critical success factors for this project.</p> <p>Describe how these success factors will be measured.</p> <p>Describe the top three challenges to delivering this project.</p> <p>Please provide a risk register covering: key commercial, regulatory, operational, environmental risks including how these will be monitored and managed</p> <p>Summarise the key risks associated with the project and how these will be monitored and managed.</p>	<p>You should describe the critical success factors for your project. You should explain why these are important, how you will measure them and how they will be managed during the project.</p> <p>You should describe the main challenges to delivering the project, which should link to the risk assessment description.</p> <p>Identify key project management tools and mechanisms that will be implemented to provide confidence that sufficient control will be in place to minimise operational risk and, therefore, promote successful project delivery. This should include the arrangements for managing any significant sub-contractors.</p> <p>In addition to the basic risk register template provided in the application form, you may provide a separate Risk Register for your project. You should consider risks and issues of the following types:</p> <ul style="list-style-type: none"> • Operational • Commercial • Technical • Personnel / Health and Safety • Regulatory <p>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.</p> <p>In the summary risk register, describe the main risks, and then rate as High/Medium/Low (H/M/L) for both impact and</p>

probability. Describe whether each described risk can be accepted, transferred or mitigated. Assign the residual risk to the project as Red/Amber/Green.

Assessor's questions to consider:

Question 6: How appropriate is the technical approach for the demonstration and development of the technology? Are the milestones realistic?

How appropriate is the technical approach for the demonstration and development of the technology?

Are the work packages and milestones realistic? (e.g., is it well planned, thought through, costed, under/over ambitious for the timeframe, skills in place or to be recruited).

Will the deliverables demonstrate tangible progress/value inflection?

Given the stage of the technology development and the context of what the project wants to achieve, give your view of the strength of the industrial/partner relationships that are mentioned in the application (e.g., is there indication that they have the necessary relationships for this next stage of development)?

Is the outcome TRL chosen commensurate with the activities and outcomes of the project?

Question 7: How well have the critical success factors and the management of risk been considered and evidenced?

Based on your experience, does the project scope look feasible and what are the key risks for project delivery? Please score your view of relative delivery risk.

How well have project challenges been described?

How well does the venture recognise the critical success factors and risks for the project?

How well has the management of success factors and risks been evidenced?

1.6 Project Funding

This section focuses on the finances of the project and the justification for the funding that you require. The Entrepreneurs Fund Finance Form should also be downloaded, completed and submitted as part of the application. The numbers provided in the application form should match those within the Project Cost Breakdown Form.

Any data or references that might help to support your answers that cannot be included in the application form should be provided to BEIS as a separate attachment. These may include for example tables of data, diagrams.

Section/Field	Guidance
Total company contribution	This is the amount of total eligible project costs that you (and any partners / collaborators) will be paying from your own resources/private sector investment into the project.
Source of company contribution	Please state the source of your company contribution to the total costs (your match funding). If you have partners / collaborators, include their contributions here as well.
Amount of BEIS grant applied for	This is the amount you will be asking for from BEIS. You should ensure that you do not request a grant higher than the maximum allowed, taking into account all public sector funding for the project.
Other Public sector funding applied for	<p>Please provide full details of other funding that you are currently applying for or have already applied for or received in relation to this particular project. This data is important as other public sector support is counted as part of the grant you can receive for the project and total subsidy contribution.</p> <p>Do not include grants that have been used to reach this point in the development process and are now completed. Please include this information in 1.1.</p>
Total project value	Please add total company contribution, amount of BEIS grant applied for and other public sector funding applied for to give the total value of the project

Grant funding requested as a percentage of total funding	<p>Input percentage calculated in the Project Cost Breakdown Form.</p> <p>N.B. This figure must be compliant with the relevant subsidy category under which you are complying.</p>
Project Start Date and End Date	<p>Please indicate when (subject to approval) you would expect to be able to start your project, and when you expect it to complete. Please be aware that there are restrictions on project length and make sure your project completes within the maximum time allowed.</p> <p>The start date should only be considered as an indication. Should you start your project before final approval any costs will be incurred at your own risk, will not be eligible for grant, and will not be included in project costs you can claim against.</p>

Section/Field	Guidance
Question 8. Provide a summary of the main areas of spend within the project. Including information on the expected origin of your company contribution.	<p>Please provide a narrative description of the anticipated project costs, making clear the level of contribution from the business and the level of funding required from BEIS.</p> <p>This should match the details provided at the start of the application form as well as within the Entrepreneurs Fund Project Cost Breakdown Form, with any supporting information and explanation provided in this section of the application form. This is the section where you can describe the breakdown of costs between your organization and any partners / collaborators.</p> <p>You should attempt to demonstrate that:</p> <ul style="list-style-type: none"> • The budget you are proposing is realistic for the scale and complexity of the project. • If applicable financial commitment from other sources is demonstrated for the balance of the project costs.

	<ul style="list-style-type: none"> • The budget breakdown is realistic and consistent with what is being proposed. • The spend profile matches the work packages and project plan. <p>Please state the amount of sub-contract funding (if any) within the expected spend of the project and justify the necessity for this spend as opposed to the addition of collaboration partners.</p> <p>Please state the amount of funding requested for academic partners (if any) and justify this spending using the Transparent Approach to Costing (TRAC) methodology to calculate 80% full economic costs.</p> <p>Guidance on eligible costs is provided in Appendix 1.</p>
<p>Question 9.</p> <p>Please provide a summary of your funding and spending history on the innovation to date.</p> <p>Provide the total invested in the innovation to date, itemised by category e.g.: Grant funding, own cash invested, external funding received/invested, non-cash investment i.e. personnel resource etc.</p> <p>Provide a high level breakdown of how funds have been spent to date.</p> <p>Describe the other sources that you have approached, organisations and companies that you have contacted.</p>	<p>You must provide a clear breakdown of previous funding and spend on your innovation, including any grants or awards received, and how these have been deployed, which should reflect your answer to Question 3. You should differentiate and value different types of funding / investment.</p> <p>You will need to demonstrate the added value of public funding for your proposed project. To demonstrate this, you will need to provide evidence that:</p> <p>There will be an increase in your total Research & Development spend on low carbon technologies in the UK; and either:</p> <ul style="list-style-type: none"> • Why you are not able to wholly fund the project from within your business's own resources; or • How BEIS's funding would allow you to undertake the project differently or more quickly and why this would be beneficial to the UK. <p>Please provide full details of other public funding that you have received, including but not limited to grants and investments, received to date, in relation to this, or related, projects. Related projects mean any</p>

	<p>projects using resources or assets (including intellectual property) which are being used by this project.</p> <p>You must include any grants that have been used to reach this point in the development process and are now completed or close to completion and any for which an application is underway or in progress.</p> <p>You should describe other sources of funding you have explored to fund this project and the outcome of these discussions. Public funding should not be the first option for your project.</p>
--	--

Assessor's questions to consider:

Question 8: How appropriate is the proposal financially? Is the overall budget realistic and justified in terms of the aims and methods proposed? Do the project costs provide fair market value?

How well thought out and appropriate are the project financial plans?

Is the overall budget realistic in terms of the aims and methods proposed?

Is the project's match funding realistic?

(If required) Is the case for sub-contract funding well made as opposed for sub-contractors being consortium partners?

(If required) Is the case for academic partner spend well justified?

Question 9: To what extent has the applicant demonstrated value for money in previous funding? How strong is the case for added value of public funding?

Has appropriate progress been demonstrated in the innovation given the level of funding received to date?

Is the case for public funding justified?

How strong is the case for public funding?

Have alternative sources of funding been explored and explained?

What added value does public funding bring to the development of the innovation?
 What added value to UK PLC would public funding bring?

1.7 Experience and Skills

This section focuses on the experiences, skills and track record of your business and its personnel.

Section/Field	Guidance
<p>Question 10.</p> <p>Please summarise the company's relevant experience in delivering projects and evidence relevant experience of the key personnel involved in the project.</p> <p>Please demonstrate that you have all the necessary industry and supply chain relationships in place to deliver this project.</p>	<p>You should highlight the experience of your management and delivery team and key personnel within your organization (and any partner organisations) that are involved in the project. This should focus on experience in project management, technology commercialisation, business development and raising finance (i.e., loans, equity finance).</p> <p>You should detail any track record individuals involved or your business has in undertaking and exploiting the results of research and development projects, to show your capability to develop and exploit the technology.</p> <p>If you feel the acceleration support aspect of the scheme might be able to provide additional skills or knowledge necessary for the successful completion of the project you should highlight these in this section.</p> <p>You should detail and explain and industry or supply chain relationships which are necessary, or which will help you to deliver this project.</p> <p>You should demonstrate sufficient resource commitment and capability to undertake the project, as described in Question 7 and your Gantt Chart, with clear management reporting lines identified.</p>

Assessor's questions to consider:

Question 10: To what extent does the organisation and delivery team have the right skills and experience to deliver the projects intended benefits to time and quality? Can any skills gaps be addressed by the acceleration support?

Have all the partners / sub-contractors been described?

Has the delivery team been described?

Are there any skills gaps, if so, is the applicant aware of them?

How will any skills gaps be addressed?

Are industry / supply chain relationships adequate to deliver the proposed project?

N.B. please consider within context of the TRL of venture and expected team experience/size for a venture of that TRL.

1.8 Public Statement

This section provides a public statement that BEIS can use for publicity purposes.

Section/Field	Guidance
Public statement	<p>This should be a brief summary of the project which should describe your company and project. You should use language that can be understood by people without specialist knowledge or expertise. It should explain why the project is innovative and describe the key aims and objectives. BEIS reserves the right to amend the description before publication if necessary but will consult you about any changes.</p> <p>This should not contain reference to any intellectual property as this description will be made available in the public domain if the application is successful.</p> <p>This question is not scored.</p>

1.9 Scoring Guidance

We will select projects that offer the best value for money overall based on their assessment against the criteria outlined in this section. The projects will be scored against the five assessment criteria set out in the table below. Projects must score a minimum of 60% (based on total score) to be eligible for funding.

Scoring Guidance 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.

2. Completion of the Entrepreneurs Fund Project Cost Breakdown Form

You will need to complete the financial details in the Financial Summary section of the application form and also complete the Entrepreneurs Fund Project Cost Breakdown Form. The information in both sections should be consistent.

You should only submit one project cost breakdown form for the project, which should combine the costs of all project partners. Within the project cost breakdown form and the application, you should make clear how funds will be split between partners.

The Entrepreneur Fund Project Cost Breakdown Form consists of 8 worksheets:

- Summary
- Project Location
- Labour and Overhead costs
- Material costs
- Capital equipment costs
- Sub-contract costs
- Travel and subsistence costs
- Other costs

Each of these sheets can be accessed by using the scroll bar at the bottom of the worksheets.

Within the spreadsheet there are grey cells which are auto-calculating based on data in the manual entry cells, information should not be entered into these. All blue cells are manual entry boxes or drop down boxes into which data can be input; Each tab provides example in the first row on how to fill out the form. Additional guidance on exactly what information should be input often be found by clicking into cells.

Guidance on eligible costs is provided in Appendix 1 of these guidance notes.

Guidance on what needs to be entered in some fields is provided within the sheet when you click on the box.

Worksheets only need to be completed if you have costs in those categories, so for example, if your project has no planned capital equipment or sub-contract costs, the form will assume these entries are £0 and calculate without them.

2.1 Project Quarterly Breakdown Worksheet

This worksheet provides the breakdown of all costs across the duration of the project. It represents the spending profile you expect for your project. In entering this information you should ensure that the profile is consistent with the timings of the various work packages you are proposing within the project plan.

You must ensure that the total, in the spread-sheet, for each category matches the total that has been calculated on the individual worksheets.

Appendix 1 – Eligible Costs

BEIS will only provide the grant to cover eligible costs incurred and defrayed in the period between acceptance of the BEIS grant and the deadline specified in the grant offer letter for completion of the project.

The definition of eligible costs includes the applicant's own costs, eligible costs incurred by consortium members and eligible costs incurred by companies connected to any of these. The cost of work contracted to connected companies, to consortium members or to companies connected to consortium members should be on the basis of eligible costs.

Costs must be denominated in GB pounds. Applicants should indicate where conversion has been made to GB pounds from other currencies and indicate the rate and assumptions used.

List of 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.

List of 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 one 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 are able to claim from HM Revenue and Customs.

Staff Costs

BEIS would not normally expect to see contractors in key posts, e.g. CEO, FD, etc included in applications. Exceptionally, where BEIS is willing to provide a grant which covers the cost of 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.

Appendix 2 – Technology Readiness Levels (TRLs)

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.

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).

	<p>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.</p>
<p>TRL 4 – Lab and Test Bench Demonstrations</p>	<p>Lab and Test Bench Demos of sub-systems & key components. Modelling & experimentation with parameters representing future conditions.</p> <p>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</p>

	<p>“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.</p>
TRL 5 – Development Prototypes	<p>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.</p> <p>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.</p>
Experimental Development (guideline)	
TRL 6 – Engineering or Demonstration Prototype	<p>Full-scale system in representative conditions - Engineering Prototype. Representative full-scale prototype system is tested in a relevant environment. Proof-of-application.</p> <p>Critical cost factors and new manufacturing capability are refined at this stage e.g. use of cost effective materials, demonstration that new</p>

	<p>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).</p>
<p>TRL 7 – Operational Prototype (Alpha Product)</p>	<p>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.</p> <p>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.</p> <p>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</p>

	<p>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.</p>
<p>TRL 8 – Production Prototype (saleable Beta product)</p>	<p>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.</p> <p>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)</p> <p>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.</p> <p>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.</p>

	<p>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.</p>
<p>TRL 9 – Marketable Product</p>	<p>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.</p>

This publication is available from: www.gov.uk/beis

If you need a version of this document in a more accessible format, please email enquiries@beis.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.