



## **The Biochar Demonstrator Flexible Fund**

### **Operational Guidelines**

***Closing date: 3<sup>rd</sup> February 2023***

The Biochar Demonstrator is one of five demonstrator projects and a coordinating hub funded under the UKRI Strategic Priorities Fund Greenhouse Gas Removal Demonstrators (GGR-D) programme. The project is led by the University of Nottingham, in collaboration with Bangor University, Forest Research, Scottish Universities Environment Research Centre, UK Centre for Ecology and Hydrology, and University of Leeds.

Flexible funding awarded by the Biochar Demonstrator (up to £50K at 100% FEC, paid at 80% FEC to the home institution to a maximum of £40K), will be used to support the research and salary costs of early career researchers (ECRs) over short term projects related to biochar. Eligibility will depend on self-identification of ECR status, and support from an incumbent academic at a UK institution. The funds will be awarded to undertake a defined piece of work by the ECR to fill gaps within the field of biochar research. The aims of the flexible fund are:

- To address research gaps as they emerge, covering both biochar deployment and specific measures to aid policy and business development.
- To aid ECRs in their career development in terms of independence and help establish a strong UK biochar research community.

There will be two calls for this flexible fund, the second is expected to launch in November 2023. Successful applicant's to the first call will be able to apply for the second call. The precise number of projects funded will depend on the merit and costings of the applications received, but it is expected that at least 5 ECR projects will be funded across the two calls.

We encourage applications from individuals underrepresented in their fields of research in the UK – we believe that diversity strengthens and enhances our team and quality of research. The funded ECRs and their respective projects will not only join the Biochar Demonstrator network but also the stakeholder family of the GGR-D Programme.

#### ***1. Purpose and Scope***

##### **Purpose:**

The purpose of the flexible fund is to support ECR career development and address research gaps as they emerge, covering both biochar deployment and specific measures to aid policy and business development.

The primary goal of the Biochar Demonstrator is to address the key uncertainties to the deployment of biochar for the sequestration of carbon across the UK. Through this, we are applying highly stable wood-based biochar to arable, pastoral and forestry soils at rates of 10 t/ha, supported by characterisation, lifecycle assessment and techno economics and social science research. We aim to deploy 200 tonnes of biochar to land across the course of the Demonstrator project, the largest



biochar demonstration project in the UK to date. Further details about our project can be found on our website: [biochardemonstrator.ac.uk](http://biochardemonstrator.ac.uk)

We recognise that there are many elements relating to biochar research that will not be addressed by the Biochar Demonstrator and are seeking to fund ECR projects which will address some of these gaps. We are open to proposals in all aspects of biochar which could contribute to the overall aim of GGR in the UK. We would also like to encourage proposals addressing crossovers between biochar and other GGR approaches (especially other GGR-D programme approaches: afforestation, perennial biomass crops for GGR, accelerated peat formation, and enhanced rock weathering. Further details of which can be found at <https://co2re.org/ggr-projects/>) as well as the wider GGR landscape, including policy and regulation.

We are particularly interested in projects which align to one or more of our key research themes.

**Themes:**

The Biochar Demonstrator's primary goal is to address the key uncertainties to the deployment of biochar for carbon sequestration across the UK.

Funded projects should focus on one or more of the **4 key themes** of the Biochar Demonstrator:

1. Biochar production, characterisation & stability
2. Lifecycle assessment and techno-economics of biochar
3. Deployment of biochar as carbon sequestration
4. Social science research of biochar

Projects will be prioritised where the project scope addresses key knowledge gaps in our understanding of biochar in GGR in the UK that are not currently being addressed by the Biochar Demonstrator or other research programmes.

Topics of particular interest include:

- Biochar production, characterisation & stability
  - Analytical methods and models to yield greater detail on the stability of biochars.
  - The impact of pyrolysis temperature on biochar porosity and adsorptive characteristics.
  - Alternative methods of biochar production and/or utilisation of novel feedstocks.
- Lifecycle assessment and techno-economic assessment of biochar
  - Comparisons of biomass use for biochar and competing use cases.
  - Comparison of biochar for combustion and as a soil amendment.
  - The future potential demand and availability for biochar feedstocks.
  - Feasibility of small-scale Carbon Capture and Storage (CCS) systems for integration into biochar processing facilities.
  - Lifecycle assessment of portable or small-scale biochar production.
- Deployment of biochar as carbon sequestration
  - Application of biochar as a smart fertiliser exploiting the cation/anion exchange capacity.
  - Nutrient availability with regards to co-application of fertilisers and char.
  - The applicability of biochar as a nutrient trap in field ditches.



- Exploring practical delivery mechanisms for biochar at depth.
- Future regulation and policy - opportunities and potential for the application of biochar from 'wastes' to land.
- Social science research of biochar
  - Opportunities and risks of biochar as understood by allotment holders.
  - Limitations preventing commercial vegetable growers from using biochar.
  - State of farmers knowledge and understanding of biochar as livestock feed.

### **Funding:**

Funding is available for projects up to £50,000 (100% fEC)/£40,000 (80% fEC). Funds will be awarded for 80% full economic costing (fEC) to a maximum of £40,000. The applicant and home institution must agree to find the balance of fEC for the project from other sources.

Matched funding and collaboration with industry or other programmes is permitted. Partnership be it financial or in-kind with industry is encouraged. A letter of support should be supplied from all project partners confirming:

- the organisation's role in and commitment to the proposed project and explain how it will contribute to the impact of the project
- the value of any cash in-kind contributions.

### **Duration:**

Individual projects should last between 3 and 12 months full time equivalent (FTE), for example a 50% part time project may take up to 24 months. The project must begin within 3 months of receipt of the offer letter. The project regardless of FTE must be completed by 1 June 2025.

### **Equality, Diversity and Inclusion**

The Biochar Demonstrator commits to develop a culture of equality, diversity, and inclusion (EDI), where these values are fully embraced and where everyone is made to feel valued and work in an environment of mutual respect.

We encourage applications from diverse and underrepresented groups in their fields of research, as we develop the biochar research community.

The principles of EDI will be adhered to across the flexible fund, specific measures include:

- All assessment panel members are encouraged to have undertaken equality and diversity training prior to appointment
- Assessment panel composition will be considered with the aim of maintaining EDI principles
- Assessment of the applications will be by blind review

## **2. Eligibility**

Funding is available for UK ECRs with the support of a PI who is eligible to receive BBSRC funding and are based at a UK institution (<https://bbsrc.ukri.org/documents/grants-guide/>). In some cases, the



ECR may be an incumbent academic, and therefore be able to fulfil the role of both ECR and PI. In these cases, it is still recommended to have additional support from within the home institution.

The funds are not suitable for postgraduate research student positions.

Early Career Researcher (ECR) designation is not specifically defined by factors such as age or work experience. Instead, ECR encompasses researchers who are early on in their research trajectory. For this reason, eligibility for this fund simply requires self-identification as an ECR.

For further guidance: Typically, this may be within the first 10 years of post-doctoral research in a field associated with the application topic, excluding time spent out of research for any reason including career changes, gaps in career and caring responsibilities, and adjusted for part time or <1.0 FTE roles.

### **Home institution support**

The home institution is responsible for all in relation to an employee's (i.e. the ECRs) contract of employment.

The PI and home institution are expected to mentor and support the ECR through their continued development and this project. The proposal should demonstrate what support is available for the ECR from their home institution and a commitment to ECR development through and beyond the project.

### **3. Finances**

#### **Full economic contribution (fEC):**

The Biochar Demonstrator Flexible Fund awards will be awarded at 80% fEC to include VAT.

#### **Eligible costs:**

Eligible costs as per BBSRC grant funding ([BBSRC research grants guide](#)). A budget template is provided in the application form.

Equipment purchases are not an eligible cost in this scheme.

#### **Payment of Awards:**

Funds will be paid in arrears to the awardee. Funds will be paid by BBSRC to the University of Nottingham in quarterly arrears, on final project costs once a project has completed. University of Nottingham will then pay invoices to awardees institutions.

Successful applicants will be informed via email and an electronic award letter will be sent to the PI. It is their responsibility to inform and circulate it to the institution's awards/ research office.

UoN will provide a simple contract for the awardee, assigning all rights to the awardee's institution but requiring funds to be spent as detailed on the application and a final report to be sent to the Biochar Demonstrator project manager. A signed contract will be required prior to project commencement. Applicants for projects with matched funding, or other consortia agreements will need to have signed agreements in place prior to funded projects commencing; with a copy provided to the Biochar Demonstrator project manager.



#### **4. Submission and Assessment Process**

Applications will be accepted after the scheme has been publicised on the Biochar Demonstrator website and up until the deadline. The Flexible Fund Panel will be formed from at least 3 independent experts, primarily sourced from the Biochar Demonstrator Expert Advisory Group.

The Biochar Demonstrator Project Manager will check application documents are correctly completed and send them to the Flexible Fund Panel. In the case of conflict of interest, the panel will engage the Management Board (MB) or an external nominee to evaluate the application. The panel will review the application in confidence to ensure it: (i) falls within the scope of the Biochar Demonstrator; (ii) has a realistic project plan to achieve the outcomes within the stated time frame; (iii) is value for money and has been appropriately costed; (iv) is appropriate for this fund.

The Biochar Demonstrator Project Manager, Principal Investigator and applicant will agree the specific starting date for accepted projects (to be within 3 months of awarding). Reports of awarded projects, and final project reports, will be an agenda item on Biochar Demonstrator Management Board meetings.

#### **Proposal Criteria:**

Criteria for funding are as follows:

- Proposals must address a clear gap in the understanding of biochar for carbon sequestration in the UK.
- Proposals must contain a clear and concise plan with well-defined and achievable objectives and deliverables.
- The applicant must indicate ECR status.

Successful proposals will demonstrate the following:

- A research agenda that has the capacity to deliver meaningful results within one of the fund topics, over the project timeframe;
- Project outcomes with impact in line with the funding requested;
- The requisite skills and capacity to deliver the proposed research;
- Evidence of a clear and appropriately costed research plan;
- Support from the home institution and PI; and,
- A clear rationale as to why this fund is an appropriate funding stream for the project.

#### **Application review process:**

Applications will be peer reviewed blind, with names and institutions removed by the project manager before being passed on for assessment. Panel members will declare any conflict of interest on review of anonymised applications. In the case that a conflict of interest arises the management board will determine the appropriate mitigation. Panel member will not assess any application to which they have a conflict of interest, however they may still be involved in the overall review process depending on the level of conflict.



Panel members will undertake a paper-based review of applications, using the below evaluation criteria with two members reviewing each application, one acting as an assessor, the other as a discussant. Following paper review the Panel will meet to discuss all the proposals, to agree a priority order and to make funding recommendations to the demonstrator Management Board.

The projects will complement, but not duplicate, existing investments by UKRI, BEIS and others in biochar research. To ensure this, the review panel will be appraised of active publicly funded UK biochar projects, to the best of the demonstrator’s knowledge.

Funding decisions will be reported to the BBSRC prior to confirming funding decisions with applicants. Awards will be publicly announced following acceptance of the award by the applicant and signing of relevant contracts.

**Evaluation criteria:**

Proposals will scored under the following criteria:

Criteria	<b>% contribution of total score</b> Applications will need to meet a 50% threshold for each criteria
Quality of Science proposed	<b>30</b>
Relevance and impact of proposal to the application of biochar as carbon sequestration in the UK	<b>30</b>
Project management – are the objectives and deliverables well defined and achievable under the scope of the fund	<b>15</b>
Evidence of ECR skills/capacity & PI support	<b>10</b>
Value for money & costings	<b>10</b>
Appropriateness to this fund	<b>5</b>

**5. Review and Reporting Process**

**Ongoing review:**

Successful ECR applicants will maintain regular informal contact with the management board to track progress against agreed objectives and to gather data for sharing within the demonstrator and across the GGR-D programme where appropriate. The ECR will be visited at least once by an appropriate demonstrator team member(s) to review progress, share lessons, and explore opportunities for collaboration and impact. If an in-person visit is not possible (e.g. because of COVID restrictions), virtual activities may replace it.

Funded projects will be expected to engage with demonstrator and GGR-D programme activities, these may include but not be limited to participating in events and working groups, contributing to communications products, networking, and stakeholder engagement. Funded projects will contribute to ResearchFish reporting where applicable.



Successful applicants to the fund will be required to provide/contribute to at least one communications or engagement activity during their project and evidence from applicants will contribute to the development of the wider mapping of existing and emerging stakeholders in the biochar and GGR space. These may include outreach to communities of interest; the use of emails/newsletters; website updates & blog posts; conference presentations or event attendance. Outreach and other engagement activities will be undertaken in consideration of EDI principles.

#### **Final report:**

Funded researchers will be required to produce a report at the end of their award, for which a template will be provided. The report must be submitted to the Biochar Demonstrator Project Manager within 1 month of the agreed project end date. The Report will detail the:

- Work that was undertaken to achieve the objectives
- Results obtained and outcomes of research
- Breakdown of financial expenditure (receipts should be retained)
- A one-page public summary

The report must be countersigned by the home institution PI and the public summary of the work may be published on the Biochar Demonstrator website. Invoices will not be paid until the report has been received and approved by the management board.

#### **6. Data Protection**

All data collected during the course of application will be protected in line with the UKRI Data Protection Policy which can be found at:

[Data protection policy – UKRI](#)

The BBSRC may use information for research related activities, including but not limited to, statistical analysis in relation to evaluation of the Biochar Demonstrator, study of trends and policy and strategy studies.

To meet the Research Councils' obligations for public accountability and the dissemination of information, details of grants (including successful awards) may also be made available on the Research Councils' web sites and other publicly available databases, and in reports, documents, and mailing lists.

#### **7. Acknowledgement**

Any publications should acknowledge support as follows 'We acknowledge that the UKRI-BBSRC funded Biochar Demonstrator (BB/V011596/1), supported this project'.