



CALL 3 – APPLICATION FORM & GUIDANCE FOR FEASIBILITY STUDIES

**EPSRC Future Manufacturing Research Hub:
SUSTAIN - Strategic University Steel Technology and Innovation Network**

Call Type: Invitation for Proposals
Closing Date: 09:00am Monday 23rd September 2024
Related Themes: Carbon Neutral, Steel Utilisation, Iron and Steelmaking and Smart Steel Processing

1. Summary

The EPSRC Future Manufacturing Research Hub: SUSTAIN is offering up to £300,000 in overall funding, to support a number of Steel Decarbonisation Feasibility Studies at TRL 1-3. We aim to provide at least 3 awards for the third call, up to the value of £100,000 each (80%FEC / funder contribution). Projects must be completed by April 2026. Exceptional proposals may qualify for a higher level of funding which will also depend upon the research quality, strength of collaboration, the number of proposed research outputs and the overall contribution to the fundamental grand challenges. The funding is available for novel research in sustainable steel manufacture, smart production and recycling of end products. We would also welcome proposals that address the utilisation of steel with the potential to generate new business models and/or supply chain solutions for the steel industry or that identify policy impediments/requirements for the industry’s transformation. The scope of the call is defined in Section 6 of this document.

The call is open to all UK academics whose institutions are not currently involved with the SUSTAIN project and are [eligible to receive EPSRC funding](#). This excludes individuals or groups that have previously been awarded SUSTAIN Feasibility Study funding, unless the new proposal focuses on a significantly different area of research.

The call is the primary mechanism for new academic collaborators to engage with the SUSTAIN Hub. The partnership is motivated to increase collaboration between the current Hub and Spoke Universities (Swansea, Warwick, Sheffield), wider UK academia and the UK Steel industry, including companies within steel production, supply chain and (in particular for this call) end product manufacturing. This will ensure that a diverse set of knowledge, experience and perspectives are engaged to consider the challenges presented by the grand challenges. In addition to maximising potential research synergies, the call also offers projects access to facilities, equipment and expertise from the Hub and Spoke Universities plus other SUSTAIN partners such as The Henry Royce Centre, AMRC, and MPI among others.

Activity	Date
Call Promotion Starts	Monday 1 st April 2024
Call Launch & Official Open Date	14 th May 2024
Sandpits	July 2024
Closing date for applications	Monday 23 rd September 2024 9:00am.
Evaluation for shortlist of applications by	Mid-October 2024
Grants announced and feedback given by	Mid-November 2024

Academic Partners:

Sponsored by:



Projects must start within 3 months in receipt of the offer letter, however, if applicants have special circumstances, consideration will be given on a case-by- case basis.

2. Background

SUSTAIN launched in 2019 as a partnership between Swansea, Warwick and Sheffield Universities and the five major UK steel producers by volume. The shared vision of the SUSTAIN partners is to transform the steel supply chain from a reliance on CO₂ intensive commodity products to a flexible and responsive sector where energy and resources are used and reused far more effectively. The Hub continues to seek to expand the network by drawing upon complementary research activities and expertise from the wider UK academic community.

SUSTAIN has ambitious and challenging research goals which through connected innovation vehicles are projected to help double UK steel manufacturers GVA by 2030, boost jobs to 35,000+ and increase productivity by 15%. The future health and sustainability of the industry is key to delivering the UK industrial strategy and its decarbonisation 2050 target. This call will look to explore opportunities to increase the impact of decarbonisation of steel production on the users of steel, for example, decarbonisation of transport through electrification is dependent upon new stronger and lighter steels that are more resistant to degradation and transforming construction will be steel and glass intensive. Successful applicants will join the SUSTAIN innovation ecosystem (Figure 1) providing a springboard on which they can deliver research with impact. This broader network has the potential to transform the UK steel making industry to one of carbon neutrality and zero waste, focused on high value functional products created via entirely new manufacturing approaches.

3. The SUSTAIN Challenge

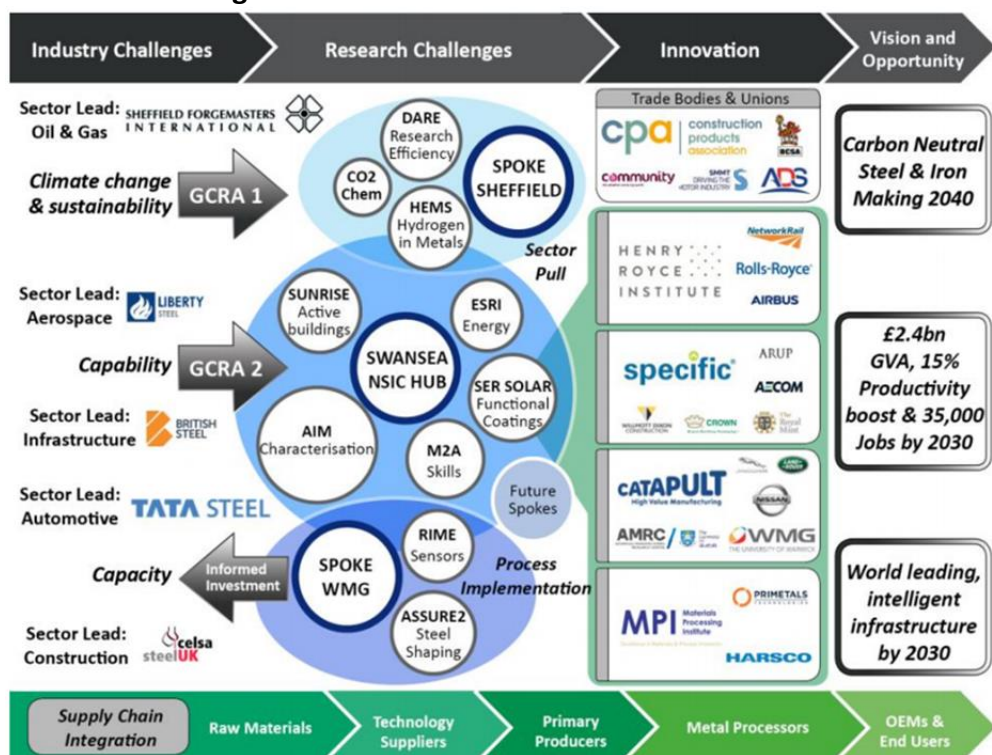


Figure 1: a schematic representation of the current SUSTAIN innovation ecosystem and its objectives.



4. Academic Impact

The SUSTAIN partnership aims to produce significant academic impact to the steel industry as a whole through the application of strong, novel research at the TRL 1-3 level. Through this research it is expected that high value publications, patents and an increased level of academic esteem will be developed for the existing and future partner institutions. The research journey from where we stand in 2024 to the delivery of an actual carbon neutral steel industry will form a close bond between the individuals and groups performing the research that will ensure future collaboration, projects and funding leverage with the industry. We aim to achieve this through a common area of focus upon maximising the impact on sustainability of the use and re-use of low embodied CO₂ steel.

5. Technological Impact on UK Manufacturing Research

SUSTAIN will be instrumental in maintaining a leading and differentiated technology base within the UK, which is imperative to securing the future success of the steel industry. Supply chains will also benefit by more secure access to a successful UK steel sector supplying high quality sustainable products and with increased focus on development of the leading-edge products for the future and the technologies pathways to manufacturing. Our model of regional clusters with international standing working with industry is unique and disruptive and builds on the complementary markets the companies serve. It also connects to an established innovation eco-system via the IKC (SPECIFIC), Henry Royce Centre and HVM catapult (WMG/AMRC) together with MPI giving an internationally unique lab to line capability. The five UK steel producers are committed to increase infrastructure investment to £300Mpa aligned to a high-risk research agenda which SUSTAIN can deliver. This is now already coming to fruition. Hence, consideration of the eventual implementation of the research outcomes (at whatever stage of the supply chain) will be important for the projects funded by this call.

6. Scope of the Call

This call and previous calls have addressed challenges at TRL 1-3 and be aligned with at least one of the priority areas outlined within the Grand Challenges:

[SUSTAIN Grand Challenges](#)

- **GCRA 1:** Carbon Neutral Iron and Steelmaking
- **GCRA 2:** Smart Steel Processing

A previous list of successful projects through these feasibility study calls can be found here ([SUSTAIN Steel - EPSRC Future Steel Manufacturing Research Hub — SUSTAIN Feasibility Studies](#)). These studies have been necessarily focussed on the production of steel. The scope of this call will be focussed more on how this work and that of SUSTAIN's core research program can be levered to deliver new thinking on the benefits to the users of steel.

FS Challenge Scope

Proposals should be aligned to the following areas, but we will also accept any high quality, novel proposal related to steel production and use in the UK centred around decarbonisation:

- **Financial/Business Modelling for Green Steel:** Development of understanding that assists decision making of the impact to customers of the industry and its supply chain when moving to green steel production.



- **Value Intensive Steel Design:** Today's products are tomorrow's scrap. Projects that consider design of steel intensive products that deliver sustainability benefits through their lifetime and are ready for the circular economy are welcome.
- **Re-use, Remanufacture and Life Extension** of steel products to deliver full life-cycle CO₂ benefits.
- Any novel **Decarbonisation and Recycling** projects that may produce a step change on the path to Net Zero in partnership with steel users.

Proposals should demonstrate the potential to significantly improve the Carbon Footprint of steel users and / or the whole steel life cycle through direct changes and augmentation of systems and processes, the introduction of novel technology for materials tracking, disruptive supply chains and closed loop recycling of products. Due to the industrial focus of the project, academics are strongly encouraged to include industrial project partners, particularly users of steel who may be new to the SUSTAIN program to facilitate future trials with UK steel companies, provide knowledge and experience and demonstrate a pathway to manufacturing and exploitation. The SUSTAIN team is happy to help with contacts in the steel production industry where required.

Potential steel intensive sectors of the UK economy that are fulfilled by the UK steelmakers are outlined below for illustrative purposes, though this need not limit the aspiration of the applicants:

- Civil Nuclear
- Rail and Transport Infrastructure
- Construction
- Automotive
- Aerospace components
- Steel Packaging

Projects addressing relevant opportunities in these (or other) sectors should consider that these may be served by more than one of the steel makers in the UK and there may be opportunities to partner with more than one of the UK producers in your proposed research.

7. Funding Available

The SUSTAIN Hub awarded 3 Feasibility Studies across the two Grand Challenge areas in 2020. In line with funding available, SUSTAIN will award up to 3 Feasibility Studies during the third call. **The funding available for each Feasibility Study is £125,000 (FEC); 80% being funded directly from the Hub (i.e. maximum grant per project of £100,000). It is expected that the remaining £25,000 will be contributed by the collaborating institution.** Maximum project length is 12 months (100%FTE), with funding intended to cover the costs of the PI and supporting researchers in undertaking their research feasibility project. **Projects must be completed by 30th April 2026.** Funding will therefore primarily cover staff time (including associated Indirect and Estate costs), with the remainder supporting consumables and travel. Funding for PhD students is not available. Other funding may be accessible for specialist measurement or limited pilot and upscale trials with our partners at Specific, AIM, Catapult Centres, Henry Royce Institute and MPI, but this must be discussed and agreed in advance with the nominated centre and SUSTAIN team.

8. Equipment

Funding for the purchase of equipment is not eligible.



The Hub, spokes, industrial partners and other affiliated project partners are committed to supporting the UKs research community and have jointly agreed to provide access to facilities, equipment and expertise at cost to proposals funded through this call (subject to terms and conditions agreed on a case-by-case basis). If you believe that your proposal would benefit from access to specialist equipment, please contact SUSTAIN via info.sustainsteel@swansea.ac.uk where your query will be passed to the relevant person.

9. Eligibility

The call is open to all UK academics whose institutions are not currently involved with the SUSTAIN project and are [eligible to receive EPSRC funding](#). This excludes individuals or groups that have previously been awarded SUSTAIN Feasibility Study funding, unless the new proposal focuses on a significantly different area of research.

10. Process for the Applicant to follow for preparation and submission of their proposal

- Attendance at the FS launch meeting (not mandatory but recommended)
- Applicant considers new idea.
- Attendance of sandpits at SUSTAIN conference 8-10th July 2024 (not mandatory but highly recommended)
- Applicant to discuss proposal with their line manager, confirm letters of support from industry, understand and follow their institutions internal procedures for applying for funding.
- Develop proposal and submit by 09:00am Monday 23rd September 2024.

11. How to Apply

Please complete in full the application form (Appendix A) of this document.

The guidance and application form includes:

- General guidance
- Practical applicant information to be completed
- Alignment to SUSTAIN Grand Challenges
- FS Challenge Scope
- Proposed start date, duration and flexible working requirements
- The original research or a summary of the state of the art in the field
- The proposed project (with up to x4 A4 sides for completion)
- Contribution to SUSTAIN targets and KPI's (see appendix b)
- Resource requested
- Table information including work package details, work plan (Gantt chart) and current grant proposals

Submission Checklist

- Application form (Appendix A of this document)
- A summary CV of the proposed candidate(s)
- A list of publications from the proposed candidate(s)
- Letter of support from supporting universities / industrialists / organisations where applicable.



Partners included in the proposal must provide a letter of support for the applicant to submit with the proposal. Letters should be on headed paper, signed and dated and submitted with your application.

12. Assessment Process

Submissions will be considered by a panel consisting of Hub Investigators supported by independent assessors to ensure a fair and unbiased process. In order of importance, the evaluation criteria for applications will be:

- 1. Fit to Scope:** Does the proposal address one or more of the topics outlined in the call scope and is the proposal at an appropriate TRL?
- 2. Research Quality:** Is the proposal likely to result in high quality research outcomes, in the form of journal publications, patents etc.?
- 3. Novelty:** Does the proposal contain genuine novelty either in terms of its approach / outlook or scientifically speaking and is the work timely? Is it being addressed elsewhere?
- 4. Relevance:** Is the proposal relevant to the interests of industrial partners or represent the opportunity to significantly improve the U.K.'s manufacturing capability?
- 5. Ambition:** Does the proposal offer suitable levels of challenge, ambition and risk? High-risk, high return studies are encouraged.
- 6. Impact:** Is the approach credible and will the team be able to deliver? If feasibility is demonstrated is there potential for developing a larger collaborative project, either at a similar fundamental level or at higher TRLs?
- 7. Planning:** How well has the proposal been planned? Are the requested resources appropriate to deliver the proposed programme within the timeframe and have they been fully justified?



13. Equality & Diversity

SUSTAIN is committed to supporting and promoting equality and diversity in all of its practices and activities. We aim to establish an inclusive environment and welcome diverse applications from all protected characteristics. We particularly encourage applications from women, as this cohort is under-represented in engineering across academia and industry.

14. Terms & Conditions of the award

Successful applications will be required to enter into a legal binding agreement with Swansea University that will incorporate the [UK Research and Innovation standard terms and conditions](#) of the grant.

15. GDPR

The data you provide will be utilized and deleted in alignment with GDPR requirements, by following the [SUSTAIN Privacy Policy](#).

16. Contacts



Applicants are asked to consult their university's research office ahead of submitting a proposal to this call, in order to be clear of the requirements for meeting the deadlines set out in page 1 of this document. The award is contractually and financially from Swansea University to the University in question. If you have further questions, please e-mail info.sustainsteel@swansea.ac.uk

Completed forms must be submitted electronically in **PDF format** to:

Info.sustainsteel@swansea.ac.uk

Proposals must be submitted by 09:00am Monday 23rd September. The SUSTAIN team will acknowledge receipt of each proposal and assign a unique number.



Appendix B

SUSTAIN KPI's

Type		KPI	Aligned Ambition
Publication & Dissemination	1a	Journal Publications	International Academic Leadership 2030
	1b	Conference presentations & posters	
	1c	Policy Publications and Briefings	
	1d	Annual reports	
Pathway to Manufacture & Impact	2a	Patents	Double GVA by 2030
	2b	Investments	
	2c	Traceable CAPEX	
	2d	Productivity Enhancement	
	2e	Projected contribution towards Net Zero steelmaking	
	2f	Demonstrated contribution towards Net Zero steelmaking	
Outreach and Engagement	3a	Workshops, knowledge transfer activities & update meetings with industrial partners	Responsible Innovation & International Academic Leadership
	3b	Contribution to SUSTAIN online presence (blogs, social media)	
	3c	Sandpit sessions	
	3d	SUSTAIN Conference	
	3e	Academic Engagements (conferences, idea generation, webinars etc.)	
	3f	New Spoke development	
	3g	Public Engagements (exhibitions, trade shows, school visits)	
	3h	Internal Engagements (Inreach, Theme meetings)	
	3i	Additional Collaborators	
Leverage	4a	UKRI (RC) Competitively won	Sustainability & Impact
	4b	Innovate UK (Open)	
	4c	Other	
EDI	5	Equality Impact Assessment	

