



Sparking the Cooking Supply Chain Competition ('SC2')

Grant Specification Document



Competition overview

The Modern Energy Cooking Services (MECS) challenge fund provides research funding to stimulate innovations in modern energy cooking technology and systems. In addition, MECS supports the advancement of innovative clean energy cooking products, processes, and services in low-income countries that are appropriate and acceptable to users.

The new '**Sparking the Cooking Supply Chain' (SC2) competition** is the latest in a series of challenge funds that the MECS programme has engaged with. Previous funds have prompted innovation, early research, and piloting, all of which seek to rapidly accelerate the transition from biomass to clean cooking, particularly modern energy cooking services, on a global scale. SC2 competition builds on this progression of interest by seeking to explicitly strengthen electric cooking supply chains. This new competition enables the MECS programme, funded by the Foreign and Commonwealth Development Office (FCDO) and delivered by Loughborough University, to address key barriers to electric cooking uptake by understanding what works and what doesn't in terms of supply chain activation.

There are a number of countries across Asia and Africa with pilot research projects where energy efficient electric cooking devices have been shown to fit the local cuisine, deliver cooking for a lower cost than alternative fuels such as LPG and charcoal, and be culturally and socially acceptable to households. There is also a body of research work which suggests that some countries are at a point where they might pivot to eCooking at scale.

The competition seeks to fund research projects that will deliver a minimum of 1,500 energy efficient electric cooking appliances into homes or businesses. Our research so far suggests that **electric pressure cookers (EPCs) are the 'front running candidate' for this outreach**, but we will consider any efficient electrical cooking appliance. Combinations of more than one device are acceptable **if a strong case is made**.

The core research question for the SC2 competition is;

How can the use of energy efficient eCooking appliances be accelerated by creating a sustainable supply chain with associated demand stimulation?

The key aim of the SC2 competition is:

To develop and implement a detailed sustainable supply chain activation plan.

Competition design

This competition will be run in 3 phases, starting with a 5-month formative research inception stage to develop a detailed sustainable supply chain activation plan.

Progression between the phases (i.e. phase 1 to 2 or phase 2 to 3) will be competitive and dependent on overall success of the previous phase.

- Total duration will be 35 months.
- Total funding available is £550,000.
- Multiple projects will be funded.

Match funding (financial or in-kind) and demonstrating links to other funding programmes is desirable. The finance element of your application will be preferentially scored if this is secured.

Phase	Challenge Fund Requirements	Progression to next phase
Phase 1: Data gathering and development of a detailed sustainable supply chain activation plan (inclusive of research and learning)	Application focuses on the development of detailed sustainable supply chain activation plan (5 months, up to £50,000). Proposal will be assessed on the likelihood of gathering the right data to develop a viable detailed sustainable supply chain activation plan .	Progression to phase 2 is dependent on the coherence and quality of the detailed sustainable supply chain activation plan developed during phase 1.
Phase 2: Implementation of detailed sustainable supply chain activation plan with 1,500 to 2,000 units (inclusive of research and learning)	The sustainable supply chain activation plan will be implemented.	Progression to phase 3 is dependent on the quality of implementation during Phase 2 and the potential need for Phase 3 funding.
Phase 3: ‘Maintaining Momentum’ finance to ensure cash flow and momentum beyond Phase 2 (inclusive of research and learning)	The sustainable supply chain activation plan will be extended with a further 2,000 (minimum) units.	

Eligible organisations

Organisations (of any size, from any country) who can acquire (import, assemble, or manufacture) and distribute (e.g. sell for cash, sell on credit, PAYG, subsidised¹ etc) a minimum of 1,500 efficient electrical cooking appliances to kickstart and research the ‘next step’ in creating a viable supply

¹ Please note that we acknowledge ‘free’ distribution by the use of carbon finance and/or Results Based Financing is potentially possible, but such an approach has to be considered in the light of a breadth of learning over the last 30 years on household use of ‘free’ kit. A strongly subsidised approach needs to have a strong rationalisation as to why it should be researched.

chain in a given country. Projects that progress to Phase 3 will need to demonstrate the capacity to distribute a further 2,000 devices (minimum).

Consortiums of organisations are eligible but there must be one lead organisation identified.

The research must take place in one of the eligible countries listed here;

Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Cameroon, Congo (Democratic Republic of the), Côte d'Ivoire, Ethiopia, Gambia, Ghana, Haiti, India, Indonesia, Kenya, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Morocco, Mozambique, Myanmar, Nepal, Niger, Nigeria, Pakistan, Papua New Guinea, Rwanda, Senegal, Sierra Leone, Solomon Islands, Somalia, South Sudan, Sudan, Swaziland, Tajikistan, Tanzania (United Republic of), Togo, Tunisia, Uganda, Vietnam, Zambia and Zimbabwe.

Limitations

- Organisations can only be named on one application as either the lead or as a consortium member. A consortium member is defined as an organisation who is actively involved in the implementation of activities. If an organisation is listed as either the lead or as a consortium member on more than one application, then all of them will be rejected. Only suppliers of devices and suppliers of specialist research capability can provide their services to multiple projects and be named in multiple applications.
- Applications suggesting working in more than one country will be rejected.

Phase 1 application

Organisations which are successful in being awarded phase 1 funding will spend 5 months collecting additional data and evidence to develop the details for a sustainable supply chain activation and research plan in their specific context.

The application for phase 1 should focus on demonstrating an understanding of what a sustainable supply chain activation plan could look like in the chosen context. It should provide an overview of the groundwork already completed and the existing knowledge. If some of the necessary data already exists, this should be identified and stated in the application with details of how it can be incorporated into the new data that will need to be collected. It should identify what data/knowledge gaps need to be filled during phase 1 and provide a plan for how that data will be collected (e.g. methods and approaches) and analysed within the 5 months available. There are different skills needed for data collection, consolidation, and analysis. The application should demonstrate that there is a team capable of completing all the required tasks within the 5 months available. Further details are available in the Application Guidance Document.

The next section is intended to provide a full overview of what is expected as part of the three phases of the competition. It provides the background thinking to the competition and outlines the expectations for each phase.

A 'detailed sustainable supply chain activation plan' explained

Phase 1: Detailed sustainable supply chain activation plan – Present a detailed sustainable supply chain activation plan which demonstrates a contextual and market understanding and presents a detailed implementation plan, including a plan for research and data gathering of user experience, and the experiences and learnings within the supply chain itself.

Phase 2: Implementation - Implement the **detailed sustainable supply chain activation plan**, including delivery of a minimum of 1,500 to 2,000 units, research and data gathering on emerging opportunities and challenges regarding the supply chain and consumer demand (e.g. user experience).

Phase 3: Maintaining Momentum - Implement an extension to the detailed sustainable supply chain activation plan to reach the next 2,000 users.

Background

We acknowledge that to date there are a number of organisations, suppliers, distributors, etc exploring the emerging markets for energy efficient electrical cooking devices, and many of these have explored the market with between 20 to 200 units. This has generated valuable data on how the devices match household and business needs: - culturally, economically and whether they are a good energy match.

We now wish to see how organisations might graduate to the next step of creating a sustainable supply chain with marketing 1,500 to 4,000 devices. We note that this is still only an intermediate step towards a truly scaled response with a sustainable market of tens of thousands of devices per year.

Phase 1: Detailed sustainable supply chain activation plan – Present a detailed sustainable supply chain activation plan which demonstrates a contextual and market understanding (A) and presents a detailed implementation plan (B) including a plan for research and data gathering of user experience, and the experiences and learnings within the supply chain itself (C).

A: Contextual and Market Understanding

This section should be used as a guide when writing the application for phase 1. It outlines all the data and evidence that will need to be collected and analysed for the detailed sustainable supply chain activation plan to be developed.

The application for phase 1 should outline whether this data is already available or if it will need to be collected during phase 1. If it needs to be collected the methods for collecting and analysing the data should be included in the application.

Description of cooking culture: cooking is a deeply cultural activity. Both society and individuals have long and deeply held beliefs about how the food should be cooked and how it should taste. Many have a belief that food cooked with electricity just doesn't taste the same. As urbanisation takes hold and/or greater awareness of cooking options becomes apparent, traditional practices evolve, and populations change their beliefs and modify the way they cook. Some devices are better suited for some meals more than others. Proposals should cite research and data that explains why they think that their proposed energy efficient electric device will save on the household's or businesses monthly expenditure in their regular weekly menu of meals. We note that the use of such devices may also save time and reduce kitchen emissions – the value of these and other benefits to the user should be cited.

Existing availability of ecook appliances on the market: an overview of what is currently available for eCooking, the retail market and whether other actors in the context are considering supply of such devices. What is the status of the current supply chain? Are there distribution networks of other complementary products to partner with (e.g., distributors of fridges or productive equipment)? Are there any regulatory barriers to entry (e.g., importation certifications)?

Existing opportunities to mitigate the upfront costs for users: schemes mitigating the upfront costs are likely to be part of a viable sustainable supply chain activation plan. There will be market segments where households are willing to pay for the appliances from their savings and/or their existing credit mechanisms (e.g., a bank or credit card). However, we anticipate that there may be a need to arrange credit facilities for the users – a User/Consumer Finance plan. Credit facilities may come from a number of sources and can be offered on different terms (fixed term, a form of lease hire or as a pay as you go). We note that many countries have Savings and Credit cooperative organisations (SACCO), and it may be appropriate to make the local SACCOS aware that the energy efficient appliances can save the household money and help repay the loan.

We are increasingly seeing the possibilities of the voluntary carbon market and of Results Based Funding (RBF). The voluntary carbon market is considering verification of the use of appliances through metering the electrical supply, and this may be something you may want to consider.

RBF can be accessed through several agencies who are aware that higher tier stoves, in general, improve health by reducing household air pollution, release time from the processes of fuel purchase and collection, reduce deforestation (as well as reduce carbon emissions), and offer gender co-benefits. We note that the World Bank Clean Cooking Fund (CCF) and NEFCO use RBF for its co-benefits, and Endeavor have also applied RBF schemes.

This challenge fund can be used in conjunction with an application for RBF or carbon finance to enhance it, however we offer a note of caution that some schemes take considerable time (and investment in processes) to access, and the applicant should be confident and provide some

evidence that the RBF/Carbon scheme can be accessed within the lifetime of the challenge fund if it is key to the detailed sustainable supply chain activation plan.

Applications for phase 1 should provide a brief overview of the financing options available within the selected country and then justify the selection of the chosen approach as part of the detailed sustainable supply chain activation plan.

If the long term sustainability of the supply chain is likely to include RBF and/or Carbon credit schemes the application for phase 1 should include a brief comment on what action you might take during the project timeline to initiate the use of such schemes in the longer term.

Appliance and fuel stacking: to date there is no clear picture on how much ecooking will form a part of total cooking practices. Rice cookers are common in Asia but usually used to cook just part of a meal. Kettles are common in East Africa, and while being very energy efficient, are task specific. The document 'cost effectiveness of electric cooking' showed how a stack of LPG and EPC could be a very cheap combination of Tier 5 cooking, however it requires the double upfront costs for the LPG stove and cylinder, and the EPC. Proposals should explain how they expect their appliances to affect stacking behaviour. This will be particularly important if the stack is thought to continue to include biomass-based cooking – for example an induction stove and charcoal (mimicking the LPG and charcoal commonly found currently in East Africa). When selecting appliances, consider data from the [Global LEAP Awards](#). The competition delivered a buyer's guide highlighting the most energy-efficient, user-friendly, durable, and safe EPCs available on the market today. We would encourage a review of this guide and more recent MECS reports which highlight an increasing market for EPCs.

Policy and enabling environment observations: the plan should consider the prevailing policies that may affect the sustainable supply chain activation plan and any proposed changes to the policy or regulation environment within the lifetime of the project. For instance, what is the ease of doing business in the chosen market, what are the custom and taxes applied to imports, and what standards are applied to these types of products?

Sustainability observations: the plan should clearly comment on the mechanisms by which growth will continue beyond the duration and funding of this call.

B: Detailed implementation plan development

The following items will all need to be addressed in order to develop the **detailed sustainable supply chain activation plan**. The application for phase 1 should outline whether this data is already available or if it will need to be collected during phase 1. If it needs to be collected the methods for collecting and analysing the data should be included in the application.

- **Location:** why is the location selected particularly suitable (what is the specific opportunity represented by working in this location?). Are there any barriers to working in this location?

- **Target market:** who is the target market? Why? What are the key features of this market and how might this impact uptake of the appliances?
- **Proposed appliance:** why the proposed appliance(s) has been chosen - cultural fit, energy efficiency fit, cost, proven reliability, ease of repair, safety record etc

Ensuring the safety of the appliance is essential. Therefore, if the efficient electric cooking appliance(s) that is proposed meets European or domestic country-based standards, we would allow the immediate go ahead of the project. If a device is innovative and not yet meeting European or a domestic standard, we will still consider the application but will ask for safety test data to be carried out before the project can be confirmed.

- **An analysis of how the proposed appliance fits with electricity delivery in the market segment(s) targeted:** appliances can be distributed to households and businesses that have a grid or off-grid connection. An analysis of the electricity supply and its load profile should be included. Analysis of whether peak loads might overwhelm the local supply should be included. An analysis on the wiring of typical target customers' households should be included.
- **Procurement of appliance/s:** will appliances be imported, assembled, manufactured? If imported – manufacturer/supplier, transportation, importation taxes, storage etc. What is the relationship of the market country to the country of origin? If assembled or part assembled - manufacturer/supplier, transportation, importation taxes, location of assembly, storage, resources available, capacity to deliver etc. If manufactured – materials (supplier, transport, implementation, storage), location of manufacture, resources available, capacity to deliver etc. [We are expecting the use of **commercially available cooking appliances**. We are not expecting design or modification of these devices].
- **Distribution/sales plan for a minimum of 1,500 units** of energy efficient ecooking appliances: including a clear description of the distribution network (retail outlets, agent networks, women's groups, online sales etc). How does the appliance get into a user's hands? How reliable/stable/sustainable is this model/approach? What are the ongoing costs of this model/approach and how can it be sustained? A financial case with itemised cash flow would be preferable. Any application that is unable to demonstrate the sustainable delivery of a minimum of 1, 500 units will not be considered in the review process.
- **Household wiring assessment:** how will the safety and suitability of household wiring be assessed, can upgrades be provided if necessary? (If so, what is the approach?)
- **User willingness and ability to pay information:** we note experiments on willingness to pay, which may not result in the full cost recovery of the appliance are common in supply chain research. However, for the purposes of this project we expect the initial sales distribution to be made on a full cost recovery basis (in conjunction with a suitable user/consumer finance plan, carbon credits and RBF finance) in order to lead towards a sustainable supply chain.

- **User/Consumer finance plan: what financial mechanism/s will be used to mitigate upfront costs for users:** how will credit (or other mechanism) implemented, how will it work, is the credit facility is tied to proven use of the device etc? If a specific credit providing institution is named in the proposal, then a letter from that institution indicating their commitment to establishing the required credit line/product should be included in the application.
- **A sales and awareness campaign*:** what messages are being used to promote the products, why? How is the awareness campaign constructed?
- **After sales services*:** immediate after sales services should be provided. Sometimes the use of an energy efficient electrical appliance requires some adaptation in cooking processes. There should be support made available for learning how best to use the appliance (and prevent early frustrations of bad tasting food). How will this be achieved/implemented?
- **How repairs of appliances will be supported or how a warranty will be honoured*.** What repairs and/or warranty will be offered and how will this be managed/implemented? Is there local availability of repair services and/or this something that could be developed? While it may not necessarily be the responsibility of the supplier, some commentary/think piece should be made on what will happen at the end of the products life? (i.e., how will e-waste be dealt with/prevented in the longer term?).
- **Analysis of potential job creation:** where, how, for whom?
- **Timescales** for implementing all of the above and for achieving the financial break-even point.

*Please note these items are important and should not be an 'afterthought'.

C: Research and data gathering plan

The research activities outlined in this section need to be included during the implementation phase of the competition. That means that during phase 1, the research activities need to be incorporated into the development of the **detailed sustainable supply chain activation plan**.

In the application for phase 1, organisations should demonstrate that they understand this need for research and outline the skills available to complete detailed analysis of the data collected. The application should outline a proposed analytical schema for the data and provide a commentary on how they would use the feedback and learning to improve their supply chain.

An ability to collect the data is not enough on its own – conducting the analysis and understanding what impacts it has or could have on the long-term sustainability of the supply chain is critical.

The following data will need to be collected and analysed during the implementation phase;

- **A plan to monitor a minimum of 10% of users with energy meters.** The type of meter, supplier, data resolution, data storage method, and what will be monitored should be specified². If the appliances have built in metering capability this would enhance the application, but there is also the option to bring in third party meters which would gather use data. Research suggests that households like a visible meter, particularly in the early days of use, so they can see how much the electricity is costing them. Energy-use is the most obvious form of monitoring, allowing various analyses and serving as a proxy for device use. However, other forms of device use-monitoring could be proposed. The project may also intend to obtain the users electricity meter number and get permission to access their user billing data held by the utility. This would give insight into the impact of ecooking on their overall consumption of electricity. If this element of monitoring is proposed a letter confirming co-operation from the utility should be included with the application.
- **A plan for gathering qualitative feedback from a minimum of 10% of users.** Getting feedback from users is vital to the project. Qualitative feedback should focus on experiences of acquisition, use and repair. (e.g. a follow up survey within one month of acquisition, and after 6 months). Additional, more detailed follow up should be conducted with a minimum of 50 users. This should focus on users known to have got on well with and/or have had problems with the appliance(s), it could cover successful and unsuccessful recipes; whether expenditure on cooking fuels changed; perceived benefits; how did they learn to use it; how often do they use it; etc. The proposal should outline how users will be contacted (method), how and when the responses will be collected, how the data will be safely and appropriately stored, the key themes to be covered in the feedback. (A full draft of the specific questions to be asked is not needed for the application). If a net promotor score is derived from surveys, the derivation should be described.
- **A plan to assess the suitability of the User/consumer finance plan (including links to results based financing or carbon credits).** The research should document the partnerships and the associated financial conditions attached to any credit line. A sample of experiences from a minimum of 10% of users who used any mechanism set out in the user/consumer finance plan should be documented. The proposal should outline how users will be contacted (method), how and when the responses will be collected, how the data will be safely and appropriately stored, the key themes to be covered in the feedback. (A full draft of the specific questions to be asked is not needed for the application).

² In previous challenge funds we have asked for a process called cooking diaries, which engages the user to document what foods they are cooking. We do not see this approach as part of this project. We assume a sample of users will be given energy meters which will record and store data automatically on device use (resolution at the minute level).

Implementation and maintaining momentum – a brief overview

This section provides a brief overview of the expectations for phases 2 and 3. The current application should focus on phase 1 (sections A, B and C), it is not expected to address phases 2 and 3 in detail at this stage.

Phase 2: Implementation - Implement the **detailed sustainable supply chain activation plan**,

For organisations successful in transitioning from phase 1 to phase 2, a second tranche of funding will be made available to implement the detailed sustainable supply chain activation plan developed during phase 1. The implementation will include the delivery of a minimum of 1,500 to 2,000 units as well as research and data gathering on emerging opportunities and challenges regarding the supply chain and consumer demand (e.g. user experience).

The deliverable for phase 2 will be a report on the realisation of the detailed implementation supported with an analysis of the learning generated through the implementation with specific references to the user experience data collected. It will include an analysis on the financials and overall sustainability of the supply chain. The implementation phase will be judged in terms of a **potentially sustainable supply chain**, not just the initial distribution of a minimum of 1,500 units.

Phase 3: Maintaining Momentum - Implement an extension to the detailed sustainable supply chain activation plan to reach the next 2,000 users.

For organisations successful in transitioning from phase 2 to phase 3, a third tranche of funding will be made available to extend the supply chain developed during phase 2.

The maintaining momentum phase assumes that perhaps delayed payments of any credit/RBF/carbon scheme may not coincide with the need for a second round of acquisition of units. 'Maintaining momentum' funding is available to those organisations that may wish to maintain momentum with ecooking uptake but do not have the required cashflow. We expect that a viable longer term supply chain will have engaged with investors and banks to secure finance (ideally during phase 2). Explaining the prospects for the longer-term finance will be part of the application process for accessing the maintaining momentum phase. In addition to the analysis of the learning generated through the implementation, the application for phase 3 will also need to include an updated research plan showing what new learning might be gained from the maintaining momentum phase. This may include further user feedback but could also include willingness to pay experiments, variations on the distribution channels, and strengthening the repair and maintenance networks including end of life disposal planning.

The regular reporting will cover experiences on the supply chain, what is working, what is not working, possibilities for adaptation and adjustments. This will be summarised in a final report to document the learnings for how to effectively create a sustainable supply chain with appropriate demand stimulation.

The deliverable for phase 3 will be a report on the realisation of the extended and adapted maintaining momentum phase, supported with an analysis of the learning generated. It will include an analysis on the financials and overall sustainability of the supply chain.

Competition Implementation

Date	Activity
July 27 th 2022	Pre- launch of Sparking the Cooking Supply Chain (SC2) competition
August 10 th 2022	SC2 opens for applications
August 17 th 2022	SC2 webinar – overview of the completion and opportunity for Q&A
October 5 th 2022	SC2 closes for applications
October 2022	Application review and shortlisting Completion of due diligence by shortlisted organisations
November 2022	Final selection and confirmation of award Contracting
December 2022	All projects begin for 35 months total (ending no later than October 2025)

Reporting requirements and payment schedules

All successful organisations will be provided with the relevant reporting templates. MECS receives public funding from FCDO and therefore, all information and data collected through the programme is published into the public domain. Commercially sensitive data is excluded from this requirement but the decision on what is deemed ‘commercially sensitive’ will be taken in conjunction with the MECS senior management team.

After an initial upfront payment on contract signing, all subsequent payments will only be made on the successful completion of pre-defined deliverables. Progression between the phases (i.e. phase 1 to 2 to 3) will be competitive and dependent on the overall success of the previous phase and the total amount of budget available. The time and budget allocated for each phase is;

- Phase 1 (5 months) – Contextual and Market Understanding research – up to £50,000
- Phase 2 (20 months) – Implementation – up to £300,000
- Phase 3 (10 months) – Maintaining Momentum – up to £200,000

Phase	Payment schedule
1	<ul style="list-style-type: none"> • Contract signing – 50% • Delivery of a detailed sustainable supply chain activation plan – 50%
2	<ul style="list-style-type: none"> • Submission of a confirmed order or reservation of goods from the manufacturer (or equivalent if manufacturing in country) – 40% • Proof of delivery and clearance from customs - 10% • Feedback and data from 150 users after first month of use - 15% • Feedback and data from 150 users after six month of use and an assessment of the consumer finance mechanisms - 15% • Final report detailing learning from 20 months of implementation and a plan to instigate any changes needed before entering phase 3 – 20%
3	<ul style="list-style-type: none"> • Phase 3 payments will be determined during the design and contracting phase • Final report detailing learning from 30 months of implementation and a plan for continuing growth/ongoing sustainability