

Kitchen Energy Audits

This project aims to develop and pilot a methodology for supporting households, businesses and institutions to understand the potential impacts of electrifying their kitchens. It will review current cooking practices, in particular expenditures on cooking fuels and offer the consumer advice on how they could switch part, or all, of their cooking to electricity.

Programme Background

This project responds to a direct request from the Government of Kenya, through the Energy Transition Council, for support to accelerate the transition to electric cooking and develop a National eCooking Study and Strategy for Kenya. The National eCooking Study and Strategy will feed into the overarching National Clean Cooking Strategy 2022-2028 and will focus on how energy-efficient eCooking technologies can be scaled-up in Kenya with the intended impacts of minimizing the drudgery and health risks associated with the use of solid fuels for cooking; improving environmental sustainability; and stimulating growth in demand for electricity.

The project will deliver against three objectives:

- (1) to produce a major study highlighting the potential for electric cooking in Kenya and how uptake might best be accelerated;
- (2) to support innovative new ventures within the Kenyan electric cooking sector that can help deliver the above with a particular emphasis upon supply chain development, carbon finance, utility-enabled finance and other forms of innovative consumer financing and profile-raising public awareness activity. These two objectives will contribute to the final objective;
- (3) to support the Kenyan government in the production of an integrated and comprehensive new national clean cooking strategy that is sensitive to Kenya's climate as well as energy access ambitions.

This project, as part of a package of studies for eCAP (ecooking capacity building and market development), will run in parallel to the development of the eCooking Strategy. The findings of the projects carried out under eCAP will be able to feed into the baseline study and the strategy and vice versa (i.e. issues identified during the baseline study can be explored and proposed actions from the strategy can be piloted in relevant eCAP projects).

Project background and scope of work

Many consumers are unaware of the savings they could make by adopting energy-efficient eCooking appliances. Even those that are, are often unaware of the range of technological and financial products on offer to them and the relative merits and drawbacks of each. Household wiring is often a bottleneck preventing the safe usage of eCooking appliances; however many consumers are also unaware of what to look for and how to upgrade. Energy auditing is a standard practice in the energy sector that enables consumers to understand the benefits and costs of switching energy sources and implementing energy saving measures. It is primarily used for industrial and commercial customers where the savings (in both energy and cost) can be considerable, however a streamlined version of the energy audit methodology could be applied to kitchens to enable cooks to

understand the potential costs and benefits of changing the way they cook. Additionally, energy audits could highlight power leakages in the wiring within homes or establishments and act as a first step towards myth-busting around the high cost of electricity.

Activities & Outputs

Develop methodology: Identify the key issues to explore and develop a structured process for assessing each. Develop any tools that may be required to support the methodology, e.g. spreadsheets, mobile apps.

Pilot methodology: Pilot the methodology with a small group of Kenya Power customers, review the outcomes and refine the methodology accordingly.

Report writing: Synthesise outcomes to inform the eCooking Strategy & KPLC’s Board of Directors and develop a toolkit highlighting pathways to stimulating demand and minimizing loss of power.

Deliverables, budget, and duration

The total budget is a maximum of £6,389 (ex VAT where applicable). The duration of the work is anticipated to be no more than 8 months.

The closing date for submission to this ToR is Thursday **17th November 2022**.

All contracting will be completed prior to the end of December 2022. The research is expected to commence no later than **9th January 2023**. All deliverables must be completed and delivered no later than **15th July 2023**. These dates are non-negotiable.

The consultant should demonstrate in their response to these ToRs how the work can be completed within the time available. Payment is contingent on successful completion of all deliverables.

Date	Deliverable	Payment Value
December 2022	Contract Signing	25%
15 th March 2023	Interim progress report	50%
15 th July 2022	Approved final report on key learnings	25%
Total		100%

Communication and Reporting

The contractual requirements will be managed by Jane Spencer, Project Manager at Loughborough University. All communications and reporting should be sent to j.e.spencer@lboro.ac.uk.

The consultant/organisation is expected to communicate regularly throughout the project via four-weekly update meetings or phone calls, and emails, on:

- Research progress and milestones achieved;
- Anticipated challenges or changes to research plans, activities and timelines;
- Upcoming activities and next steps; and
- Delays or concerns on reporting.

All meetings and appointments to discuss the overall progress of the project against the contract will be agreed and arranged in advance at mutually convenient times. Any significant changes to the approved research plan and timelines must be discussed and approved in advance. Loughborough University reserves the right to request the consultant/organisation to make revisions to the deliverables if they do not meet the required quality. The consultant/organisation will be required to make these revisions at no additional costs to Loughborough University.

Responding to these ToRs

Each submission will be evaluated based on the following combination of price and quality;

Quality	Score
Appreciation and understanding of the task.	5%
Quality of proposal and methodology	50%
Skills, expertise and experience of consultant/organisation team members including evidence of similar work completed	10%
Proposed management of the activities including Gantt chart	5%
Price and costs	30%
Total	100%

The University will accept the quotation which is the best value for money i.e. a balance between cost and quality. Shortlisted organisations may be invited to an interview (online) to finalise selection.

Responses should be a maximum of 12 pages (plus up to 3 CVs, 2 pages each).

Please send all responses to steer@mailbox.lboro.ac.uk with the subject 'Kitchen Energy Audit' by midnight (GMT) on **Thursday 17th November 2022**.

Ethical considerations

All research must be in line with the [Code of Practice for research, Promoting good practice and preventing misconduct](#) (UK Research Integrity Office, 2009).

The UK Research Integrity Office (UKRIO) is an independent charity, offering support to the public, researchers and organisations to further good practice in academic, scientific and medical research. Its confidential advice service is available to free of charge to individuals (members of the public, research participants, patients, researchers and students) and subscribing organisations. Their advice service can be [accessed here](#).

At a minimum, participants must not be subjected to physical, social, legal or psychological harm. Due consideration and ethical steps must be taken into safeguarding all participants, especially the vulnerable. A detailed Participation Information Sheet explaining the full scope of the study, what confidentiality entails, and that no participants will be forced into participating, must be provided at recruitment. Participants are to be made aware that participation is fully voluntary and there are no repercussions if they choose to no longer participate in the study at any point in time. Participants should, ideally, sign a consent form which includes consent for the use of photographs and videos.

Confidentiality must be maintained at all times. With regards to confidentiality and privacy of participation, participants must be informed that their anonymity will be maintained in any outputs and that all identifiable markers will be removed from any data sets that are published. Additionally, due consideration must be made to ensure that participants are safeguarded during the research process in line with the local government issued guidelines around COVID-19.

The consultant will be responsible for securing any research or ethical permissions needed from local authorities in each of the field work locations. There may be additional ethical, or research clearance needed for this kind of user centric design research in the chosen country.

