



Lloyds TSB  
Foundation for Scotland



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## Application to Scottish Government Climate Justice Innovation Fund Grants Programme Project Grant 2017 – 2020

Applicant Organisation Name
Community Energy Scotland

Office use only	Application ref:
	Project ref:

### Declaration

I apply on behalf of the organisation (insert name) Community Energy Scotland for a grant as proposed in this application in respect of expenditure to be incurred over the proposed funding period on the activities described within the application form and supporting documentation.

I certify that, to the best of my knowledge and belief, the statements made by me in this application are true and the information provided is correct.

This form should be signed by an individual authorised by the applicant organisation to submit applications and sign contracts on their behalf.

Signature

<b>REDACTED</b>
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Print Name

<b>REDACTED</b>
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Position

Head of Development
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Date

5 August 2017
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Main Contact person during application assessment process:

**REDACTED**

## CHECKLIST

Your Application consisting of:

- Part 1 - the Application Form (this document plus the Excel budget spreadsheet)

**Additional documents**

**Essential – Your application will be ineligible without these**

- The applicant organisation's most recent accounts, either audited or independently examined **Please note:** a project cannot be funded if no audited/independently verified accounts are available.
- A letter of support from your lead partner in-country, confirming the partnership and including their perspective on the research, consultation and project planning process.

**Relevant** - The following documents should be sent if they exist

- A copy of any MOU or contract with the partner organisation
- A copy of your Equal Opportunities/Diversity policy - a hyperlink is acceptable.
- Further details of budget.

**Optional** – These documents should be sent if they are of help to you in setting out your case

- Project planning models (such as Weavers Triangle) *The use of this tool is strongly recommended.***
- Scottish-based Project Manager's CV**
- In-country Project Manager's CV**
- Evaluation framework/outcomes grid**

All completed signed applications should be submitted by email to [international@ltsbfoundationforscotland.org.uk](mailto:international@ltsbfoundationforscotland.org.uk) or hard copy to arrive no later than **12.00 noon on Monday 7<sup>th</sup> August 2017.**

Emails should show the applicant organisation's name as the subject of your email.

**Only those documents (not the whole application) which are not available electronically need to be sent in hard copy and must be received by 2.00 pm on 11<sup>th</sup> August 2017.**

Please send to:  
Lloyds TSB Foundation for Scotland  
International Development Small Grants Programme  
Riverside House  
502 Gorgie Road  
Edinburgh EH11 3AF

**These deadlines are absolute and all documentation required must be submitted on time.**

## **Project Summary**

Please provide a summary of the project, describing how it came about, what it aims to achieve, what will be done to achieve this aim, and who will do this. You should also outline how the project will support Climate Justice Innovation Fund objectives, and how the project is expected to innovate. **Max 500 words.**

This project will work with 250 households in a remote rural community of four villages: Sitolo, Ndawambe, Faifi and Kaluzeze in the Mchinji District of Malawi. The project will build community resilience, strengthen local agriculture and local enterprise through a sustainable solar powered minigrid initiative.

Approximately 85% of Malawians live in rural areas, with a livelihood based on subsistence farming. Malawi's energy supply, as is Sitolo's, is dominated by biomass accounting for 88% of the total primary energy supply. This creates both environmental degradation through deforestation and health problems from smoky indoor cooking. Through capital funding secured from UNDP, Community Energy Malawi and Community Energy Scotland are currently collaborating to install the hardware for a 45kw solar powered electricity mini-grid in Sitolo with installation in November 2017.

Many rural mini-grids fail due to poor maintenance or financial problems. This innovative project will address these two issues and develop a replicable model for other future mini-grids. Key to success is the management of a commercial model providing affordable, clean energy at a similar or lower price than existing fossil fuel alternatives. With 'pay-as-you-go' approaches and tiered tariffs local people can select the service that fits their needs and budget. Charges incorporating costs for gradual repayment of up-front installation, maintenance and management, enables everyone to benefit, pay for the energy and save through reduced fossil fuel usage.

The project will:

- set up and build the capacity of a local management structure to run an innovative and sustainable solar powered minigrid with a commercial model to ensure the long term

sustainability of the grid for supplying electricity to homes, schools and local businesses. The management body will as a result be able to advise the community on sign-ups, tariff structure and health and safety

- train local technicians on solar PV installation and maintenance skills, electrical connections and safety and IT skills, to ensure local knowledge and basic maintenance and repair capacity as well as providing new opportunities for local and wider employment
- build local enterprise capacity, skills and knowledge to enable the use of this electricity to stimulate local economic development and build community resilience, particularly among disadvantaged women, young people and among farmers (both men and women). The business support will enable new business start up (including maize grinding mill, extra irrigation facilities, a milk cooling centre, solar water pump and barber shops) both through technical support on linking to the grid and linking them with government business support agencies locally. These businesses will further help local women by reducing the amount of time needed to grind maize and carry water manually and enable them to spend more time supporting their children or doing other economic activities. Farmers will be able to improve the productivity of their farming.

## Section A: APPLICANT INFORMATION

1. Name and details of applicant organisation:	
Name of Organisation: Community Energy Scotland	
Address of Organisation:	Highlands and Islands Social Enterprise Zone 67a Castle Street Inverness
Postcode:	IV2 3DU
Telephone:	01463 417104
Main Email:	<b>REDACTED</b>
Website:	<a href="http://www.communityenergyscotland.org.uk">www.communityenergyscotland.org.uk</a>
2. Is your organisation a registered charity?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Charity No: SC039673 _____
3. What is the status of your organisation?	<input checked="" type="checkbox"/> Company limited by guarantee <input type="checkbox"/> SCIO <input type="checkbox"/> Other (specify):

4. When was your organisation formally constituted?	June_ 2008
5. Which organisations are you a member of/ affiliated to?	<input type="checkbox"/> NIDOS (Network of International Development Organisations in Scotland) <input checked="" type="checkbox"/> SMP (Scotland Malawi Partnership) <input type="checkbox"/> Other <i>Please state</i>
6. Is your organisation diaspora led?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Comments:
7. Please provide details of the number of people based in your organisation in Scotland.	Full time 16 staff  Part time 7 staff  Volunteers/interns 0
8. What are the general activities of your organisation? <b>Max 150 words</b>  Community Energy Scotland (CES) addresses energy inequality in Scotland and internationally, by supporting communities to develop renewable energy (RE) generation, improve networking and by influencing policy. CES has 400 member organisations in Scotland, and our work focuses on maximising local benefits from renewable energy by increasing local energy ownership through creating ' <a href="#">Local Energy Economies</a> '.  Over the last 10 years we have supported over 1000 community groups to develop renewable energy projects (both on and off-grid) from micro scale to multi MW scale developments which help fund further community regeneration. Please see attached supporting documentation about CEM and CES, for more details.  At primary, grassroots level we work with communities one to one, guiding them through project development to implement renewable energy projects and at a secondary level we work with Government and Industry players to remove barriers and create an enabling environment. CES assists on technical, financial, regulatory, policy and planning areas - capacity building is core to CES work.	
9. Describe how the organisation is governed/managed; include the make-up of your Board, their skills and experience, how often they meet, and how decisions are made. <b>Max 200 words.</b>  The CES Board has 8 members (5 elected, 3 co-opted) who are responsible for strategic direction and management oversight of CES. Elected Directors are voted in by members at the AGM. Elected Directors co-opt others to bring in additional skills and experience.  The board has extensive experience in the energy sector, members from the academic, business and community sectors, including international development work. Several board members, including the Chairperson, are leaders of community owned renewable energy companies,	

bringing hands-on experience of setting up and managing grassroots energy projects. Others bring experience from Community Development Trusts, housing associations, campaign organisations, universities and the business networks (Chief Executive of the Scottish Hydrogen and Fuel Cell Association and deputy chair for the transport sub-group of Scotland's 2020 Climate Group\_.

The board meet on bi-monthly , receiving reports of work progress, proposal papers, management accounts and drive strategic thinking and ensure good governance.

CEO **REDACTED** is supported in day to day decision making by a management team comprising the Head of Development, Head of Innovation and Head of Operations. The management team meet regularly to review work plans, project delivery, financial updates and to ensure good human resource management.

#### 10. Financial Information

Please summarise the last two year's audited/examined accounts below:

For the financial year to:	2015-2016	2014-2015
<b>Income &amp; Expenditure Account</b>		
Total income	£3,401,198	£932,966
Total expenditure	£3,401,595	£1,120,044
<b>Balance Sheet</b>		
Unrestricted/general reserves	£244,618	£337,153
Cash in bank / on hand	£990,894	£174,319

#### 11. Is there anything you would like to explain about these figures?

The significant rise in income between 2014-15 and 2015-16 was due to securing funding for two significant new projects which will run over several years. This restricted funding is not available to CES for any other purposes. CES tends to have fluctuating annual income and expenditure as it starts and finishes significant projects such as these year on year.

Both years of expenditure over income were planned and funded through reserves.

The core 'unrestricted' income and expenditure of the organisation tends to be between £600,000 - £700,000 per year.

12. How are equal opportunities/diversity promoted within your organisation? If you have one, please provide a copy (or web link) of your Equal Opportunities/Diversity Policy. **Max: 150 words**

Please find attached our Equal Opportunities policy.

CES is committed to promoting equality of opportunity for all staff /job applicants, and for users of services or those benefiting from projects.

We create a working environment in which all individuals can make best use of their skills, free from discrimination or harassment, with decisions based on merit. We do not discriminate against staff or users on the basis of age, disability, gender reassignment, marital or civil partner status, pregnancy or maternity, race, colour, nationality, ethnic or national origin, religion or belief, sex or sexual orientation (protected characteristics). The principles of non-discrimination and equality of opportunity apply to the way in which staff treat visitors, clients, customers, suppliers and former staff members. All staff have a duty to deliver this policy, treat colleagues with dignity at all times, and not to discriminate against or harass other members of staff, regardless of their status.

13. Scottish Project Manager details: this is the person who would be responsible for overseeing the project grant management and reporting if the grant was secured

Name:	<b>REDACTED</b>
Organisation: (if different from Q1):	As Q1
Position in organisation:	Development Manager
Address (if different from Q1):	Techcube, Edinburgh, EH9 1PL
Telephone:	<b>REDACTED</b>
E-mail:	<b>REDACTED</b>

**Section B: PARTNER ORGANISATION(S) INFORMATION**

14. Name and details of partner organisation: (please copy and paste this section again or add as separate sheets if you have more than one partner organisation, with the lead partner appearing first)

Name of Organisation: Community Energy Malawi	
Address of Organisation:	Plot No.14/34 Area 14, Lilongwe, Private Bag B 408, Lilongwe 3
ZIP/Postcode:	
Country	Malawi
Telephone:	<b>REDACTED</b>
Email:	<b>REDACTED</b>
Website:	<a href="http://www.communityenergymw.org">www.communityenergymw.org</a>
Type of organisation ( e.g. NGO, community organisation etc)	NGO

<p>15. Is the organisation formally registered in country of operation?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Registration No: _TR/Inc 6332</p>
<p>16. Describe how the organisation is governed/managed; Include the make-up of the management committee/board, their skills and experience, how often they meet, and how decisions are made. <b>Max 200 words.</b></p>	
<p>CEM is governed by a Board of Trustees drawn from its member organisations. The Board comprises 6 members with tertiary qualifications ranging from Bachelors to PhD in energy and development related fields. It is chaired by <b>REDACTED</b> a lecturer in Electronic Engineering at the University of Malawi, Polytechnic. The Board meets at least twice every year and is consulted on all major policy decisions.</p> <p>Daily operations are vested in the secretariat headed by the Country Director who also acts as the Secretary to the Board. The secretariat has Finance/Administration and Programmes departments. Under the programmes officers are allocated regions where they facilitate the implementation of projects and activities.</p>	
<p>17. Please give some background on the organisation including its size, how many staff/volunteers, how long it has existed and brief details of projects run. <b>Max 300 words.</b></p>	
<p>Community Energy Malawi (CEM) is a registered charity. Community Energy Development Programme (<b>CEDP</b>) was its first major programme, a component of the Scottish Government-funded Malawi Renewable Energy Acceleration Programme (<b>MREAP</b>) which CES also worked closely on.</p> <p>CEM's vision is "Affordable and sustainable energy for Malawian Communities" through "helping Malawian communities to generate sustainable energy solutions to meet their energy needs". To realise this vision, CEM operates a three-year strategic plan with four strategic goals:</p> <ul style="list-style-type: none"> <li>• transformative awareness</li> <li>• energy access for the last mile</li> <li>• active citizenship and civil society</li> <li>• organisation sustainability</li> </ul> <p>In realizing these ambitions, CEM works with individuals and organisations passionate about renewable energy in a national and international network, both implementing projects and influencing policy.</p> <p>CEM has been working with the University of Strathclyde on a mini-grid learning project and with Hivos on a project to influence the mainstreaming of renewable energy in local development planning in Malawi as well as influencing the adoption of green and inclusive policies at local and national government level. It is being piloted in 3 districts.</p> <p>CEM currently has 12 members of staff comprising renewable energy engineers, biomass</p>	

specialists, advocacy specialists and finance/administration staff headed by the Country Director.

Please see attached supporting documentation about CEM and CES, for more details.

18. Please describe your partnership with this organisation, including details on: how long the partnership has existed, how it first started, and how it has developed. Give a brief description of the joint work you have done together. **Max 300 words.**

CES and CEM have worked together from 2014 to date.

CES and CEM first worked together to on the Community Energy Development Programme ([CEDP](#)), a component of the Scottish Government-funded Malawi Renewable Energy Acceleration Programme ([MREAP](#)). During this programme, CEDP directly helped 20,000 people in 12 districts across Malawi gain access to sustainable energy and the programme was a finalist in the Association of Project Management “Social Project/Programme of the Year” and highly commended for Energy Institute Awards—Community Initiative Award.

The partnership has grown from this work, and currently the two organisations are jointly delivering the UNDP funded Timely Initiative for Whole Access to Localised Energy (TIWALE) project comprising the installation of the hardware for a 45Kw Solar PV mini grid in Sitolo Village, Mchinji District.

CEM and CES have both also been part of the Arkleton Trust funded learning exchange during 2016/17 where CEM members visited Scotland to learn from CES member organisations’ work and then learning partners attended a workshop in Gambia to share experience.

The two organisations have a strong shared ethos of supporting community organisations to benefit from engaging in renewable energy initiatives and in tackling poverty and disadvantage through creating community owned affordable sources of energy. We have complementary skills and experience as organisations. CEM’s strong local knowledge, experience and networks as well as growing technical capacity ensure well grounded and effective projects in Malawi. CES’s wider technical experience, including recent experience gained from innovative projects in smart technology for active grid management and work on mini-grids, and experience of working with community led energy initiatives adds to that of CEM and helps to build CEM’s technical capacity.

19. Do you have a Memorandum of Understanding (MOU) or contract with this partner?

Yes - signed  Yes - draft  No

If ‘Yes’ please submit it with your application

20. How are equal opportunities/diversity promoted within this organisation?  
Maximum word limit: **150 words.**

CEM is committed to equal opportunities and human rights for all as enshrined in the Republic of Malawi Constitution. All staff members and associates working on CEM activities are responsible for compliance with this including the necessary attitudes associated. They are obliged not to

speaking or do any action that insinuate or lead to all forms of unlawful and unfair discrimination. The CEM Country Director and Finance and Administration Manager have the responsibility of ensuring the strict adherence to this policy. The CEM officers are under obligation to ensure inclusivity, gender responsiveness and equality in the design and implementation of projects.

21. Partner's Project Manager details: this is the person who will be responsible for overseeing the project management and reporting in-country. If you have more than one partner organisation, complete the lead partner's details only.

Manager's Name:	REDACTED
Name of Organisation: (if different from Q14):	Community Energy Malawi
Position in organisation:	Country Director
Address (if different from Q14):	As Q14
Telephone:	REDACTED
E-mail:	REDACTED

### Section C: PROJECT INFORMATION

22. Project Title to be used in all future correspondence.

Building community climate resilience through sustainable electricity for enterprise.

23. Please tick which Main country/area your project will be in

- Malawi
- Rwanda
- Zambia

24. If the project will work in additional countries/area which are these?

N/A

- Malawi
- Rwanda
- Zambia

25. If the project will work in additional countries/area, please explain the rationale for this. **Max 200 words.**

Not applicable – all project work will be within Malawi

26. Please tick which thematic area(s) your project aims to address.

- Food security
- Water

Energy

27. Describe the problem you are trying to solve or situation you are trying to address including which communities your project is going to work with. Tell us if you will be targeting any specific excluded groups (for example those with disabilities, the homeless, or those affected by conflict/violence). **Max 500 words.**

Approximately 85% of Malawians live rurally, with a subsistence farming livelihood. Opportunities for developing and diversifying their livelihoods or accessing good education are limited by lack of affordable and sustainable energy. This is particularly so for disadvantaged members of the community who lack the resources for generators. Sitolo and its associated villages are typical of this situation, with only farmers who can afford generators being able to irrigate their crops. Local dairy farmers are also limited in how much milk they can sell and the price they get because they do not have a cooling facility that enables them to store and transport their milk. Women's options are further limited because they have to spend considerable time carrying water and firewood in addition to farm work. The local schools have no electricity, so teachers and pupils cannot access online resources, build their networks or study easily after dark.

Malawi's and Sitolo's energy is dominated by biomass accounting for 88% of primary energy supply. This creates environmental degradation through deforestation, health problems from smoky indoor cooking and is expensive.

Malawi's electricity penetration of 9% is second lowest globally and supply is concentrated in urban areas with only 1% of rural households connected. Malawi has made the provision of electricity to rural areas a priority through the Malawi Rural Electrification Programme (MAREP) since the 1990's, extending the electricity transmission and distribution network. However many rural areas are not covered by MAREP, including Sitolo area. Alongside MAREP the government and other players have been piloting mini-grids as a way of serving very remote areas. Previous mini-grids within Malawi have largely failed due to poor maintenance or financial problems meaning they do not achieve their full potential or fall into disuse.

This project aims to pilot an innovative approach to providing electricity to disadvantaged communities in this remote area, with 250 households benefiting in the villages of Sitolo, Ndawambe, Faifi and Kaluzeze in the Mchinji District of Malawi, enabling the system to be accessible to all in the community and sustainable in the long run. A robust, community engaged programme will enable local community members, particularly women and those on low incomes, the opportunity to buy-into and fully benefit from the opportunities that modern clean energy provision can bring. With tiered tariffs which enable up-front installation costs to be absorbed into ongoing energy bills, those with little resource to pay for installation will still be able to use the electricity. Also, local youth will be trained as technicians for helping to maintain the system and this will enable them to improve their livelihoods and wider employment prospects.

All too often the focus with new energy solutions is in on the technical side, however with decentralised systems that are needed in rural, remote areas there is a very real need to ensure the community is fully onboard and capable of being somewhat self-sufficient in maintaining the system and making sure it is financially viable.

28. Explain how many people your project is planning to work with each year.

The project will benefit 250 households with a population of more than 1,550 people. The households will be given user training aiming at ensuring proper usage of electricity systems installed in their homes. These households will get electricity for lighting and small electrical

appliances in the home where they wish to purchase them through the project.

15 local entrepreneurs who want to set up as retailing agents of solar products for the home, will be trained in what products are available, their assemblage and their safe use, as well as how to set up their sales recording systems and reporting. This will give them a new source of employment and income.

12 local community representatives (three from each village) who will make up the management structure for the minigrid, will be briefed and trained on the financial system for ensuring the smooth running of the minigrid. This will cover both the billing system and the record keeping system. They will be supported by project staff over the full period of the project while they are tracking the actual financial records, to help them review whether the finances are sufficient to cover maintenance and repair long term and therefore in reviewing the tariffs to ensure sustainability. The actual electricity billing process, collection of fees and financial database management will be done by CEM Trading (a subsidiary of CEM) and the costs to cover this will be built into the tariff system at the start.

The project will train 20 technicians (5 from each village) to be first points of contact for customers in the community who need basic repair or customer service support on a day to day basis. More major repairs and annual maintenance work will be done by CEM Trading, but the local technicians will ease the burden on CEM to repair and maintain domestic faults as they will be attended to by the technicians. It is also employment creation for the technicians who will be skilled in connecting circuits, testing them and operation and maintenance. This will enable them once trained, to secure employment outside the village. Again, the costs of annual maintenance and an allowance for likely repairs will be built into the tariff system at the start.

30 Farmers in 2 irrigation clubs will receive training on proper usage of solar water pumping systems. They will also, through project staff, be introduced to the agricultural support services of Mchinji District agricultural extension service so that they can benefit from ongoing technical support for their farming from the district (the costs of this ongoing agricultural advice and support are not therefore included in the project costs, as these are covered by district government).

4 new businesses will be enabled to set up in the community in years 2 and 3, as result of electricity provision and support provided by project staff. They will also secure business set up advice and funds, through the project enabling local entrepreneurs to access basic training and support through personnel from the Mchinji District business and entrepreneurial support services. (The cost of the actual business support will not be a cost to the project as it will be from the District, but project personnel costs are included, to cover the work they will do to inform local people and link them to this service.)

Over 100 people will use the new maize mill, mainly women, each year and will benefit from the reduced hours of work that will be needed to grind maize.

29. Describe in one sentence the overall aim of this project.

**NB: for successful projects this may be used for publicity purposes.**

This project will build the resilience of 250 households in Sitolo, Ndawambe, Faifi and Kaluzeze in the Mchinji District in Malawi by enabling them to fully benefit from the economic opportunities electricity from a solar powered mini-grid can give them and provide a sustainable mini-grid management model for future mini-grid developments.

30. Project period (maximum 36 months). Projects must be complete by 31 October 2020.	
Will the project start in November 2017?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Planned end date: 31 March 2020	
Therefore total length: 3 financial years ___29 months	
31. Purpose of this application	
<input type="checkbox"/> New project start up <input type="checkbox"/> Feasibility (Field Testing) <input checked="" type="checkbox"/> Innovations on their path to scale	

32. What needs analysis have your partner(s) and your organisation done to decide what the priorities and activities should be for this project? Tell us about consultation with community groups, civil society organisations, and meetings with local government agencies. How were disadvantaged /excluded people able to put forward their needs? Tell us about other research/statistical data. **Max 600 words.**

The proposed location is Sitolo Village, T/A Mlonyeni in Mchinji District. Sitolo Community is composed of 4 Villages namely Sitolo, Kaluzeze, Faifi and Ndawambe. It has 833 households with a population of 5,223 people, located 18 Km from Mchinji Boma and 12 Km from the national grid. Their primary economic activity is agriculture that includes: rain-fed and irrigated farming of Irish potatoes, legumes, onions and maize as well as dairy farming. The location is not in the Malawi Rural Electrification Programme (MAREP).

CEM and CES has some prior knowledge of the village having participated in Strategic Energy Projects under CEDP (a project funded by the Scottish Government from 2011 – 2014) where one of the partners in the CEDP, Mzuzu University, worked in the village to install 11 Biogas systems in some households in Sitolo Village.

Building on this connection, CEM conducted Market Assessments in 2015 in partnership with University of Strathclyde, which sought to establish people's energy needs, their willingness to pay and available renewable energy resources in the area. The market assessments showed that income levels averages MK80,000 (£80)/month for female headed households and MK150,000 (£150) for male headed households. These market assessments were then followed up with consultations done with the community through focus group discussions and structured interviews. During the focus group discussions, all gender groups were represented and CEM used the Renewable Energy Toolkits in sensitising the communities about available energy options.

The focus group discussions and structured interviews revealed that setting up an electric maize mill, having more energy for agricultural irrigation, lighting for homes, milk chilling facilities for local dairy farmers and energy for setting up local enterprises (barbershops, phone charging, entertainment and refrigeration) were the key needs. These priorities represented the needs of both

women and men in the village. It was further established that the people were willing to pay for electricity if connected. Productive use of energy studies were then conducted to establish the energy productive potential of the area as well to inform the sizing of the electric system. This established that solar energy was the main option and determined how much energy was needed for the various uses identified.

There is no maize mill in this area such that women travel 18KM to Mchinji Boma or 19 KM to Magwero in neighbouring Zambia just to get their maize ground. The milk bulking groups do not have cooling facilities, a situation that results in the milk going sour. With electricity in the area, the milk bulking groups would be able to store, cool as well as process the milk while the women will reduce time spent on grinding maize and do other productive activities. Access to potable water will also increase as well as crop production through irrigation.

In addition to consulting the community members, other stakeholders were also consulted including the District Council, NGOs and private sector players in and around Mchinji district. This identified that the District Council were keen to support the initiative and that there were a number of support services available in the district which would help community members to develop the agricultural irrigation and farming potential from the electricity, and to support enterprise development locally through advice and extension services. Also, contact with Heifer International identified that they would be supportive of the local dairy farmers in advising them on selecting suitable milk chilling equipment that would run on this solar system, would help with funding to purchase the equipment and to set this aspect of the project up with the farmers.

All these informed the development of the min Grid Project concept and workplan.

33. Tell us how the project fits into the development priorities of local government agencies. **Max 250 words.**

The project fits both the Malawi Growth and Development Strategy (aiming to increase rural access to clean energy) and Malawi Energy Policy with a 2030 target of 30% population clean energy access. We will not install solar PV mini-grid (funded by UNDP) but will develop and test an innovative community engaged model for minigrid sustainability, through building community skills and knowledge, a financial model for grid maintenance / repair and connecting households and businesses to the energy supply to build income. This will build financial viability of the minigrid. The project complements the Government of Malawi's 'Malawi Rural Electrification Programme' (MAREP).

The Mchinji District development plan has expired (2016) but CEM consulted the Mchinji District Director of Planning and Development who confirmed that this project is in line with their priorities. The previous plan built on the MDGS, with rural economic development as a key priority. This project will support an isolated community to maintain electricity attracting other developments. Gender empowerment, integrated rural development, agriculture development, improving education and health services are all District priorities and the project contributes towards all these. The skills training fits the district's goal of building local technical capacity and a skilled labour force, feeding into the district's and government's plans of skills development through Community Colleges. The Government of Malawi's Community Colleges programme aims to have district community technical colleges offering different technical skills to youths. Training village level technicians ties in well and we aim to feed into curriculum development by TEVETA.

34. Who else is working in this area, and what are they doing? How will your project work with them to ensure they are complimentary and to avoid duplication? **Max 400 words.**

So far related to energy provision, it is only the CEM/CES consortium working in this area. As mentioned earlier, MAREP does not cover these villages and so they are unlikely to secure electricity through government schemes for many years. The current CEM/CES project funded by the UNDP, for the capital build of the solar powered mini-grid, is currently finalising the technical briefs for the installation of the mini grid and doing initial community sensitisation on how the capital works will be done and who is wanting to sign up to have the electricity supply connected to their home. The mini-grid installation should be completed by November 2017, which will tie in well with the start of the CJF project we are applying for here. This CJF project will focus on the innovative element of building the resilience of the financial model and the way in which the community oversee the minigrid management to ensure the long term sustainability.

On agriculture, HEIFER International is working in this area promoting dairy production. We will thus work with HEIFER International on the milk cooling facility as they have the expertise on specifications for such facilities and work alongside them in supporting farmers to use, maintain and benefit from this facility. The actual installation of the cooler and the support of the farmers on using it and maintaining it will not be part of this project as it will be covered by HEIFER International. However the CJF project will work with the farmers who want to expand their irrigation system by installing a solar powered pump and connecting this to the mini-grid. The CJF project will cover the costs of ensuring the farmers know how to use the solar pump and maintain it but the farmers themselves will purchase the pump and pay for its maintenance and repair.

Mchinji District has a range of advisory services including those for business set up / entrepreneurs and for agricultural advice and extension. The project will brief community members wanting to set up business or strengthen their farming practices, including the use of irrigation, about these local district services and through inviting district personnel to visit the community and engage in the project, will enable community members to start using these services, where they are not yet aware of them.

35. Please confirm that a letter of support written by your lead partner organisation is included which describes your partner organisation's perspective on the research, consultation and project planning process.

Yes

**Please note: the application will not be eligible without this.**

36. How does this project fit with global development policy and the achievement of Sustainable Development Goals? **Max: 250 words.**

This project will contribute to global development policy and SDGs by:

- Goal 1 – Ending poverty - through affordable energy will enable income poor rural families to diversify their livelihoods and save money on fuel.
- Goal 3 – Health – by reducing water carrying and replacing smoky fossil fuels with clean electricity, will improve the health of adults and children.
- Goal 4 – Good quality education –electricity for schools and basic IT training will enable teachers and pupils to access improved teaching and learning resources.
- Goal 5 – Gender equality – energy for water pumping and grinding maize will greatly reduce women's workload. Women will be represented on mini-grid management committee.
- Goal 7 – Affordable and clean energy – enable this remote community to access affordable renewable energy sustainably.
- Goal 8 – Decent work and economic growth –more business start-ups: solar powered irrigation system, milk cooling centre, maize mill and other businesses, extra local income and jobs. The

training for local technicians will increase employment opportunities for youth.

Goal 9 – Reduced inequalities –the poorest in the community, including women and those with a disability, access an affordable source of clean energy Technicians will ensure electricity installation in homes of disabled people will be done appropriately to their needs.

Goal 13 - Climate action – enabling a sustainable source of clean energy to be provided to a remote rural community, reducing their emissions.

Goal 17 – Partnerships – bring together communities, local government, private companies and a community network organisation, enabling provision of clean energy and development of local enterprise and education.

37. How does this project support Scottish Government Climate Justice policy? <sup>1</sup> **Max 250 words**

This project will contribute to delivering SG Climate Justice policy by:

- Addressing the energy and economic needs of climate vulnerable people, in particular remote rural communities in Malawi (with a focus on supporting low income households, women and children locally).
- Building the capacity, knowledge and influence of the local community in how the local mini-grid will work and how mini-grid financial system will run, to help ensure its long term sustainability through ensuring basic maintenance and repair.
- Building the resilience of the local community, particularly those who are disadvantaged, by helping them save on fuel costs, accessing electricity to improve their livelihoods and improving access to better educational resources.
- Taking a rights-based approach through strengthening a local community led committee which will have oversight of the financial management and basic maintenance of the mini-grid system.
- Provide information and training to local people, so they understand how to run and manage the local mini-grid system, how to use the electricity for productive uses, build local skills which will all increase transparency, participation, and access to information.
- By addressing the needs of women and those with low income in the community through having a tiered fee structure and system for paying, the project will enable equitable access to electricity connection.
- Joint work between CEM and CES, the project will share information, knowledge and understanding between those in Malawi and Scotland and this will be enhanced by information sharing about the project in Scotland.

38. What changes and improvements in people's lives (outcomes) will the project achieve during its lifetime? Up to 3 outcomes is sufficient. **Max 150 words.**

**Outcome 1:** 250 households in the Mchinji District of Malawi will have an affordable and sustained source of renewable electricity due to a strengthened mini-grid financial management system.

**Outcome 2:** There will be increased business activity, employment and strengthened livelihoods for the community in the villages of Sitolo, Ndawambe, Faifi and Kaluzeze stimulated by the introduction of the electricity supply.

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<sup>1</sup> <http://www.gov.scot/Topics/International/int-dev/climatejustice>

**Outcome 3:** A well tested financial and management model will be produced for sustaining mini-grids, and shared other communities setting up or managing mini-grids.

**39. WORKPLAN CEM**

What activities will your project carry out each year to achieve the Outcomes given in Q38? Which organisation will do these? What numbers of people will be involved in the activity?

**Outcome 1:** 250 households in the Mchinji District of Malawi will have signed up and been connected for an affordable and sustained source of renewable electricity.

<b>Activities in year 1 (5 months from Nov 2017 – March 2018)</b>	<b>Who will action</b>	<b>Target numbers</b>
Project inception meetings with communities and with project staff: one on minigrid system and one on tariff system	CEM	250 community members
Ongoing support from project staff for initial problems and bugs in the system which need sorting, until local people can be properly trained in doing basic repairs	CEM	
Planning and delivery of training: - 12 community representatives – billing and tariff system - Basic operation and maintenance of minigrid system	CEM/ CES	12 community reps 20 community members
Regular (monthly) contact with community reps for tracking of how the billing system is going, whether people are paying and what level of maintenance or repair costs there are. Meeting with community representatives to update them on this and to discuss any issues with them.	CEM	12 community reps
<b>Activities in year 2</b>	<b>Who will action</b>	<b>Target numbers</b>
Planning and delivery of training: - Basic operation and maintenance of electricity in their homes and any associated electrical appliances	CEM	30 community members
Tracking of how the billing system is going, whether people are paying and what level of maintenance or repair costs there are. Meeting with community representatives to update them on this and to discuss any issues with them. Review and adapt systems or	CEM	12 Community reps

tariffs where necessary.		
<p><b>Activities in year 3</b></p> <p>Review and refresher / upgrade training based on issues which have arisen in years 1 and 2:  - Operation and maintenance of electricity in their homes and any associated electrical appliances</p> <p>Document all the above reviewed training for use in other minigrid set up projects, with other communities.</p> <p>Tracking of how the billing system is going, whether people are paying and what level of maintenance or repair costs there are. Meeting with community representatives to update them on this and to review and adapt final system for tariffs and agree a system for ongoing tariff review. Document the learning for this for use in other communities/minigrids.</p> <p>Run community meetings to evaluate the tariff system and billing system, document the learning for use in other communities/minigrids.</p>	<p><b>Who will action</b></p> <p>CEM</p> <p>CEM</p> <p>CEM</p> <p>CEM</p>	<p><b>Target numbers</b></p> <p>50 community members</p> <p>12 community reps</p> <p>250 households</p>
<p><b>Outcome 2:</b> There will be increased business activity, employment and strengthened livelihoods for the community in the villages of Sitolo, Ndawambe, Faifi and Kaluzeze stimulated by the introduction of the electricity supply.</p>		
<p><b>Activities in year 1</b></p> <p>Identification and Training of youth and women entrepreneurs/retailers in assembling and maintenance of Pico Solar Products, periodic support for them to troubleshoot and track their progress</p> <p>Productive use of Energy (PUE) Trainings using PUE Toolkit targeting prospective and current entrepreneurs</p> <p>Meetings with technical, entrepreneurial, vocational and training authorities at district level to discuss services on offer and training that is being planned by the project and how to collaborate</p> <p>Planning and delivery of training for technicians:  - Training of technicians in domestic connections to circuits  - Training of technicians in basic maintenance, troubleshooting/minor repairs and periodic checks of solar PV systems</p>	<p><b>Who will action</b></p> <p>CEM</p> <p>CEM</p> <p>CEM</p> <p>CEM</p>	<p><b>Target numbers</b></p> <p>15 retailers</p> <p>40 people</p> <p>Working with District Govt staff</p> <p>20 technicians</p>

<p>Orientation of prospective maize mill and metal work operators on specifications of equipment to be used and how</p> <p>Training of Irrigation Clubs on proper use of solar pump installation and preparation for maintenance</p> <p>Training of Irrigation Clubs and Water Point Committees on Water Management</p>		<p>5 personnel</p> <p>30 farmers</p> <p>30 farmers</p>
<p><b>Activities in year 2</b></p> <p>Recruit new retailers to replace any that have stopped, and ongoing periodic support for youth and women entrepreneurs who are retailing Pico Solar Products, reviewing their progress and documenting their progress.</p> <p>Further productive use of Energy (PUE) Trainings using PUE Toolkit targeting prospective and current entrepreneurs, identify at least 4 businesses that want to start up and help them link with district government enterprise start up support services and resources.</p> <p>Ongoing support of Review and refresher / upgrade training based on issues which have arisen in years 1:</p> <ul style="list-style-type: none"> <li>- Training of technicians in domestic connections to circuits</li> <li>- Training of technicians in basic maintenance, troubleshooting/minor repairs and periodic checks of solar PV systems</li> <li>- Link technicians with TEVETA for certification of their training</li> </ul> <p>Review and upgrade of training of Irrigation Clubs on solar pump maintenance and on water management, documentation of learning from this training, for use with others / sharing with local District officials.</p>	<p><b>Who will action</b> CEM</p> <p>CEM</p> <p>CEM</p> <p>CEM</p>	<p><b>Target numbers</b></p> <p>15 retailers</p> <p>10 entrepreneurs</p> <p>20 technicians</p> <p>10 technicians</p> <p>30 farmers</p>
<p><b>Activities in year 3</b></p> <p>Recruit new retailers to replace any that have stopped, train them and provide ongoing periodic support for youth and women entrepreneurs who are retailing Pico Solar Products, reviewing their progress and documenting their progress.</p> <p>Continue to work closely with four identified new business start ups to track progress and support</p>	<p><b>Who will action</b> CEM</p> <p>CEM</p>	<p><b>Target numbers</b></p> <p>15 retailers</p> <p>4 new businesses</p>

<p>through the district government agencies.</p> <p>Provide final training to local technicians, encourage further technicians to take up certification of their training and review and document the learning from the training, to share with other minigrids.</p>	CEM	20 technicians
<p><b>Outcome 3:</b> A well tested financial and management model will be produced for sustaining mini-grids, and shared other communities setting up or managing mini-grids.</p>		
<p><b>Activities in year 1</b></p> <p>Set up guidelines on data collection and case study development for different aspects of the project – to include: documentation of viable minigrid financial system and how tariffs are set and managed; training required for local people and technicians to run and maintain the system; using business support services and Productive Use of Energy (PuE) toolkits to encourage business set up and development using electricity.</p> <p>Monthly visits by CEM staff to start / support local collection of data and case study material as planned above.</p> <p>Research and assess business plan models for replication of this pilot.</p> <p>Carry out press and communications work to highlight learning and raise profile.</p>	<p><b>Who will action</b> CEM/ CES</p> <p>CEM</p> <p>CEM</p> <p>CEM/ CES</p>	<p><b>Target numbers</b></p> <p>Mainly by staff, but also linking with 12 community representatives.</p> <p>12 community representatives.</p>
<p><b>Activities in year 2</b></p> <p>Monthly visits by CEM staff to continue / support local collection of data and case study material as in year 1.</p> <p>6 monthly review with community representatives to look at analysed data trends / common problems and how to deal with them. Review and assess whether tariffs have been pitched at the right level for sustainable maintenance of the system.</p> <p>Set up systems for documenting and reviewing all the training being done (under Outcomes 1 and 2) to set up templates for training manuals for sharing with other minigrids.</p> <p>Do annual feedback and review with the community on progress with the financial and management model, adapt the systems where needed.</p>	<p><b>Who will action</b> CEM</p> <p>CEM</p> <p>CEM</p> <p>CEM</p> <p>CEM/ CES</p>	<p><b>Target numbers</b></p> <p>12 community reps</p> <p>250 community members</p>

<p>Plan and carry out one community exchange visit to another community with a minigrid, to share experience and data to date.</p> <p>Carry out press and communications work to highlight learning and raise profile.</p>	<p>CEM</p> <p>CEM/ CES</p>	<p>12 community reps</p>
<p><b>Activities in year 3</b></p> <p>Monthly visits by CEM staff to continue / support local collection of data and case study material as in year 1 and 2.</p> <p>Carry out documentation and review of all the training being done (under Outcomes 1 and 2) to produce training manuals for sharing with other minigrids.</p> <p>Do final feedback and review with the community on progress with the financial and management model, adapt the systems where needed.</p> <p>Plan and carry out second community exchange visit to another community with a minigrid, to share experience and data to date.</p> <p>Share all documentation produced (on financial and management system, case studies and training manuals) on the Mini-Grid Learning Consortium website and CEM/CES websites</p> <p>Plan and deliver a meeting with officials at the District Council and with other interested stakeholders (other minigrids, NGO staff, etc) to share learning, documentation and case studies.</p> <p>Carry out press and communications work to highlight learning and raise profile.</p>	<p><b>Who will action</b></p> <p>CEM</p> <p>CEM</p> <p>CEM</p> <p>CEM</p> <p>CEM</p> <p>CEM/ CES</p> <p>CEM/ CES</p> <p>CEM/ CES</p>	<p><b>Target numbers</b></p> <p>12 community reps</p> <p>12 community reps and interested community members</p> <p>12 community reps</p> <p>20 officials and other stakeholders</p>
<p>40. Taking the outcomes and activities framework in the workplan, describe the project in more detail, to include what will be done, with whom, how many, when, where, what resources will be needed, role of staff posts and partners in delivering and managing the project. <b>Max 500 words.</b></p>		
<p>CEM will manage the delivery of the project in Malawi with CES helping to set up systems for review, documentation and sharing of the learning, as well as in sharing this learning on sustainable mini-grid development with communities outside of Malawi.</p> <p>The project will first focus on briefing and training the community about the mini-grid and its safe use; linking with key partners (district government agencies, Heifer International, etc) and setting up management and documentation plans for this pilot. Recruitment, briefing and training of several groups of people will follow to ensure the sustainable running of the mini-grid: community representatives, local technicians and local entrepreneurs. Throughout the pilot data will be collected and analysed regarding energy use and tariff payments. Support will be provided to</p>		

entrepreneurs and farmers, in their use of the new source of electricity.

Firstly, community representatives (3 from each of sub-villages) will be recruited and trained to form the local management group. They will be the point of contact for villagers wanting to sign up for grid connection, clarification on tariffs and troubleshooting. This management group will be trained on mini-grid financial system, role of the trained technicians and how to contact them for electric connection and troubleshooting. The community representatives will also be point of contact for Project staff to plan and run community briefing and review meetings over the three years. Eventually this will be the group to help oversee a sustainable mini-grid locally.

The second group are local people wanting to train as technicians to do basic connection and troubleshooting work on the mini-grid. These technicians will receive refresher / upgrade training in years two and three and be encouraged to secure training accreditation through Technical, Entrepreneurial and Vocational Education and Training Authority (TEVETA). For major repairs, these technicians will refer to CEM Trading.

Finally training and support will be given to entrepreneurs: this will include those wanting to retail solar products, local dairy farmers to set up a milk cooling facility, farmers wanting to expand their irrigation through installing a solar pump, and other local businesses (including a maize grinding mill, a barber shop and an entertainment venue). The project will also link them into further entrepreneurial advice and support services from the district government.

The last year of the project will focus on data review, documentation and sharing the learning from this innovative pilot. Analysis of the data collected (over three years) will inform the upgrading of the business model and tariff setting system, in consultation with the community representatives and users. Reviews of training delivered will be done and documentation produced on these and the learning gained. Similarly case studies will be written up on how businesses were supported to develop as a result of electricity availability and the use of the Productive use of Energy toolkit.

Learning will be shared through two exchange visits with other communities; online through the Mini-Grid Learning Exchange website and through a final stakeholder event in year 3.

41. What are the strengths, resources and existing activities in the community that the project will build on? **Max 200 words.**

The community in these villages have already shown their keen interest in the introduction to the mini-grid, through the existing UNDP funded project, through active engagement in meetings regarding planning the mini-grid. This is a huge asset of the project as they are willing to pay for electricity as well as provide out of school youths to be trained in technical issues relating to the project. A Village Energy Committee has been set to act as liaison between the project and the community.

Local farmers and business people have also begun to plan how they would use the electricity resource by: discussing options for solar water pumps for the irrigation system, linking with Heifer International regarding the milk cooling facility and by identifying some new businesses that might set up. Already in the community another donor (Rural Income Enhancement project) constructed a warehouse for farmers.

The local farmers are already organised in clubs, making it easy to mobilise them. A number of community members have identified their interest to stand as representatives for the

management group.

The project will also leverage on the other organisations working in the area. Heifer International, departments of health, education, agriculture, agri-business, forestry, Environmental Affairs and Trade and Industry will all be engaged on matters relating their mandate.

42. How will you make sure that the most disadvantaged people in the community/target group will be involved in and benefit from this project? **Max 200 words.**

The project will ensure that community representatives from each village include both men and women, Gender mainstreaming is being considered from all angles within the project. First, in line with SDGs, the project is keen on ensuring that the micro grid should lead to empowerment of disenfranchised groups like women, girls and children. To that effect some of the strategies employed are:

- Help mobilize women into women groups to enhance their potential in productive energy uses activities
- Ensure that out of the households to be connected 30% should be for female house headed
- In houses where there are people with disabilities, circuits will be designed to accommodate their disability e.g. those using wheelchairs will need to have switches at a height where they can reach
- Provide street lights in the villages as a corporate social responsibility of the project. This will enhance security at night especially for women and girls who can be targets for rape etc
- Recruit and train out of school youths as technicians responsible for providing first line of support in maintaining domestic circuits.
- Ensuring a minimum of 30% women representation in all project activities e.g. selection of technicians and beneficiaries for project trainings will ensure that 30% of the participants are women/girls.

43. How can you demonstrate your and your partner's capacity to deliver this project? What past experience do you have? What are the skills and experience of the project managers? How will the responsibilities for management and co-ordination be split, and how often will contact be? **Max 300 words.**

Community Energy Scotland has developed and delivered many large-scale community development programmes in both Scotland and Malawi, including the Community Energy Development Programme (CEDP) strand of the Scottish Government's Malawi Renewable Energy Programme (MREAP) 2012 – 2015. The CEDP directly benefited over 20,429 rural Malawians, was a Finalist in the Association of Project Management Awards 2014 and was Highly Commended in the Energy Institute's Community Initiative Awards in 2015.

Community Energy Malawi was established during CEDP and then worked closely with CES on CEDP to ensure strong community engagement and effective delivery on the ground. Since then CEM has gone on to deliver projects funded by Hivos and other funders. CEM and CES secured UNDP funding to install a mini-grid at Sitolo and have a proven working relationship.

CES will be the lead partner in Scotland responsible for overall project management, reporting and grant management whilst also providing support to CEM in relation to monitoring, review,

documentation and sharing of learning. **REDACTED** will be CES Project Manager and has worked on community sustainable energy projects for over 13 years in Scotland, South Africa and Malawi. She is a qualified Project Manager and was Programme Manager for CEDP.

CEM will be responsible for operational planning and delivery of the project within Malawi and **REDACTED** will be the Project Manager and brings his skills as CEM Director.

Project Managers will catch up via Skype or Whats App bi-weekly. Formal project reviews have been built into the workplan quarterly throughout the project. Each Project Manager will also report quarterly to their respective Boards.

For more details on both CES and CEM experience see attached organisational information.

44. Assuming success in the innovation aspect of the project, how will you build long term sustainability into the plans for this project, to make sure that the benefits will last in the long term and be sustainable when this funding comes to an end – what is your exit strategy? **Max 300 words.**

Three sets of people will be trained to ensure long term sustainability: a) community representatives forming the community management system overseeing the mini-grid locally, liaising with community members and briefing them; b) locally trained technicians to do the basic troubleshooting and grid connections work; c) local entrepreneurs to be connected to the grid as extra users of electricity to create revenue to the grid through tariff payments, enabling a more sustainable minigrid financial model. All these groups will be trained and involved closely in monitoring, reviewing the success of this innovative pilot and suggesting improvements.

Behind the local management and support system provided by these three groups, CEM Trading (a subsidiary of CEM) will be the agency that will Build, Own and Operate the technical aspects of the mini-grid and who will provide annual maintenance and backup repair system for more serious faults that local technicians are not trained to work on.

CEM Trading is a social enterprise incorporated in 2015 which secured Malawi Electricity Regulatory Authority (MERA) installer's license in 2016. It aims to improve communities and people's life chances and environment by investing the surplus from selling renewable energy goods and services back into CEM's community development work. CEM Trading trades in installation of renewable energy technologies, consultancy services and management of CEM Micro Grids in a Build, Own and Operate model as a utility company.

This model is based on CEM's research: 'Sustainability Studies of Solar PV projects'. Due to the complexity of energy installations and the need to carefully balance supply and demand, communities are not able to successfully operate systems on their own. While they are able to do community linking services, technically competent people must handle the generation, distribution and maintenance part. The cost for paying CEM Trading to do the maintenance, major repairs and billing management will be built into the tariffs charged.

45. Tell us about any plans to scale up and/or replicate the project. **Max 200 words.**

CEM has already entered into negotiations with Institute of Electrical and Electronics Engineers (IEEE)/Smart Village who will support the scaling up of the physical minigrid system by 70Kw to connect more homes in the four villages (total 850 homes). The IEEE proposal awaits results of a technical assessment to inform the UNDP supported installation. IEEE funding would help enhance education, empowerment and entrepreneurship which are the pillars of the IEEE/Smart Village Programme.

Any learning from this project in Sitolo will be shared with IEEE so that other projects they support in Malawi or wider in the future, could learn from the documented experience.

Through CEM's work with University of Strathclyde (UoS), more Productive Use of Energy studies are being done in three other sites which will inform the development of project concepts for scaling up this innovative model and applying it in other villages around Malawi. CEM is also co leading with UoS a Mini Grid Learning Consortium which among others is there to enhance learning on how to plan and implement mini grids. Scaling up or replication is therefore not only limited to CES/CEM partnership but other players in Malawi in the consortium.

46. What might go wrong during the project? (i.e. what are the risks?) What will you do to try and minimise these or deal with them if they occur? (Add rows as required).

<b>Risks</b>	<b>Likelihood of happening</b> (Low, Medium or High)	<b>How will you minimise the risk?</b> (ensuring as a minimum no negative impact to the community)	<b>Recovery plan if problem occurs</b>
Significant disruption owing to flooding	Medium	Scheduling of project plan will take account of rainy season (January & February) which often affects transport infrastructure	Revise schedule if required
Currency fluctuation – costs increase	High	Keep a close eye on currency rates throughout the project, keeping an eye on regular cycles of currency fluctuation and aiming to send funds during typically better periods whilst meeting the needs for project funds in Malawi.	Clarify and agree price increase variation tolerances in advance. Accept higher prices up to tolerance point.
Project cost escalation	Medium	Ensure effective project budgeting based on market testing. Ensure effective procurement for services and supplies.	Identify fall-back project options and apply.

Unforeseen delays in project implementation	Medium	Realistic timescales have been set with contingency for delays. Bi-weekly project manager meetings will take place during the course of the programme with regular project reviews.	Revise schedule and scope of work accordingly in liaison with Lloyds TSB and SG
Delays cause under-spend	Medium	Set realistic expenditure profiles and monitor spend on monthly basis. Allow budget flexibility of up to 10% between budget heads.	Look at project options for bringing forward project activities that are not blocked by the specific delays.
Community Group failure due to famine, disease and other factors.	Medium	As we have worked in Sitolo previously we have experience of local community support systems and from the district government.	Establish contingency plans to allow in-hand delivery in extreme circumstances.
Fraud / Corruption risk actions / funds	Medium	Ensure a transparent and zero tolerance policy & process is shared with partners, local communities and contractors; including a clear policy for reporting / investigating allegations	Put into practice the investigation systems in the policy, attempt recovery of funds and report any problems to partners, community and funders.
Health and safety of staff	Medium	Ensure training in safe work practices. Ensure good travel plans and communication defaults. Ensure all necessary health measures are in place. Ensure insurance in place where appropriate.	Help to ensure proper treatment for staff affected by injury or illness. Maintain close contacts with all staff.
Political Upheaval	Low	Focus on community plans and actions and district – level government actions	Monitor situation and be prepared to establish new Government of Malawi contacts if necessary.

Loss of Key Staff	Low	Maintain close team relationships. Ensure good terms and conditions of employment and a transparent recruitment process	Be prepared to implement rapid recruitment process if required.
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47. How will this project build the capacity of the applicant and partner organisations in the field of climate justice? **Max 500 words**

The project will establish a tested management and financial model for sustaining mini-grids in remote rural disadvantaged areas and create documentation of the learning and training development. This can then be shared both with other communities setting up similar projects in such environments as well as with NGOs or government agencies supporting other communities.

This will strengthen the ability of both the applicant and partner organisations in supporting other communities to sustainability secure energy provision in remote rural and disadvantaged communities not served by regular grid services. This will in turn improve opportunities for education, improved livelihoods and improved health in these communities.

This will enable the applicant and partner organisations to contribute to redressing climate injustice by bringing a sustainable environmentally friendly source of energy supply to communities typically affected by climate change, who suffer the worst impacts of climate change but who have done little or nothing to cause the problem.

Our organisations will also be able to share our experience with other similar capacity building organisations working in the field of climate justice.

48. What is the role of the Scottish organisation in this project? What is the added value that the Scottish organisation brings beyond the funding? **Max 200 words**

CES will be the lead partner responsible for overall project management, reporting and grant management whilst also inputting to the thinking and work on systems for monitoring, evaluation and documentation of the learning.

CES will add value by:

- providing support to CEM in relation to documentation and sharing of learning from this project
- Bringing related mini-grid management experience (both technical and financial) from mini-grid projects we have been and are involved in, in Scotland. CES has created a mini-grid database in Scotland, to document the range of mini-grids around the country and to enable their sharing online, of issues and how they have been solved in different locations. CES is also currently Project Managing a mini-grid on Knoydart, for the Knoydart Foundation and so has hands on experience of working to support a community responsible for managing its own mini-grid and billing system.
- Bringing our technical experience on smart metering and local energy balancing

technology, to advise CEM and CEM Trading on sound technical management of the mini-grid system and connecting customer loads.

**Section D: MONITORING, EVALUATION AND LEARNING (MEL)**

This section should detail your monitoring and evaluation plans in relation to the outcomes and activities described earlier.

49. What monitoring information will you gather about the activities? Please describe how you will know whether your outcomes are achieved, and whether your innovation is successful? What evaluation activities will you carry out? What tools and indicators will be used? **Max 600 words.**

**Outcome 1:** 250 households in the Mchinji District of Malawi will have an affordable and sustained source of renewable electricity due to a strengthened mini-grid financial management system.

**Indicators of success:**

250 households are connected to the mini-grid and have a sustained supply at the end of the project

12 Community representatives are able to effectively oversee community engagement with the minigrid connection and tariff system.

Sufficient tariffs are secured to cover the installation, maintenance and repair costs to sustain the mini grid system.

20 local technicians are able to safely and effectively deal with grid connections for new users and deal with minor repairs.

**Data to be collected:**

Records will be kept by CEM, trained technicians and CEM Trading staff of:

Numbers of households connected to the mini-grid and numbers of households with a sustained live connection at the end of each year of the project and at the end of year 3

Numbers and types of connection and repairs problems each year

Tariffs collected per household per month

Numbers of local technicians trained

Numbers of community representatives trained

Annual community satisfaction feedback responses (from community meetings but also feedback forms including using visual representations for those who are illiterate) regarding connections, repairs and tariff levels

**Outcome 2:** There will be increased business activity, employment and strengthened livelihoods for the community in the villages of Sitolo, Ndawambe, Faifi and Kaluzeze stimulated by the introduction of the electricity supply.

**Indicators of success:**

10 entrepreneurs earning a satisfactory income selling solar products

10 technicians earning a satisfactory income dealing with local connections and repairs

Farmer's solar irrigation system working effectively and affordably

Dairy farmers' able to increase their sales of milk through cooling facility

4 new businesses set up and trading at the end of the project (directly as a result of electricity availability)

**Data to be collected:**

Records will be kept by CEM, trained technicians and CEM Trading staff of:

Numbers of entrepreneurs trained in solar products and numbers continuing to sell at end of project

Numbers of technicians trained and continuing to offer connections and repairs service in the villages at end of project

Evidence of solar irrigation pump installation and connection to grid (photos), quarterly check on condition/maintenance and costs

Evidence of milk cooler connection to grid (photos), quarterly check on costs and annual farmer satisfaction feedback

Evidence of new business set up and connection to grid (photos and business registration) and monthly records of tariff payments

**Outcome 3:** A well tested financial and management model will be produced for sustaining mini-grids, and shared other communities setting up or managing mini-grids.

**Indicators of success:**

A sustained mini-grid business model in Sitolo with sufficient track record of tariff income and repair / maintenance record to evidence continued operation

Finalised report and template business model shared with other communities and stakeholders

**Data to be collected:**

Records will be kept by CEM and CEM Trading staff of:

Monthly, quarterly and annual tariffs secured over the project period from homes and from businesses

Monthly, quarterly and annual costs of repairs and maintenance over the project period

Quarterly and annual analysis of whether tariffs adequately cover mini-grid repairs and maintenance costs

Quarterly and annual analysis of balance of tariffs from homes and businesses

Quarterly and annual analysis of most common and significant repair and maintenance issues

50. How will you use and disseminate the learning from this project both successes and failures, to shape future work? **Max 400 words.**

Dissemination in Malawi:

A key element of our project is ensure that learning from our approach is gathered and used to inform other future mini-grid developments and this is built significantly into the activities of year 3.

A key findings report will be published in the Final Year of the programme and submitted to the Mini-Grid Consortium website in Malawi and an information sharing event will be run with Mchinji District to which other interested stakeholders will also be invited to hear the results.

The report will also be shared with the Malawi Scotland Partnership to share with its member organisations.

Dissemination internationally, including in Scotland:

The key findings report will also be shared with the Sustainable Energy for All's Mini/Micro Grid working group and the Low Carbon Energy for Development Network for their review and circulation amongst their members internationally. It will be uploaded online through CEM, CES and hopefully the Scottish Government international projects website.

Project progress and key learning will reported on through Community Energy Scotland's members bulletin, website, Facebook page and Annual Review which reaches both a Scottish and an international audience. It will also be shared with NIDOS and SMP members.

51. Please use the table below to give an overview of the monitoring, evaluation and learning plans

Role	What will be done, when and who will do it?	Which organisation
Monitoring of project progress	<p>At the start of the project, CEM and CES will agree finalised templates and database systems for collecting and storing monitoring data as outlined at Q 49 above: grid connections, training of relevant people as indicated in project plans, tariff collection, repairs done, businesses set up/supported.</p> <p>These will then be used by CEM staff, CEM trading staff and by technicians involved. Monthly records will be kept for connections, tariffs and repairs/maintenance work. Quarterly records will be kept of businesses supported.</p> <p>Community representatives will be briefed on the key elements of the monitoring system relevant to them (tariffs collected, connections made, repairs done) so that they can understand and review them quarterly with support from CEM Trading staff.</p> <p>Quarterly reports will be produced by CEM Project Manager (PM) and provided to CES Project Manager (PM), and they will discuss and review any problems or issues and review plans accordingly. Quarterly reports will then be finalised and shared with CEM and CES Boards.</p> <p>Annual reports will be produced and submitted as for quarterly reports.</p>	<p>CEM /CES</p> <p>CEM/CEM Trading staff and trained technicians</p> <p>CEM/CEM Trading</p> <p>CEM PM and CES PM, and Boards of CEM and CES</p> <p>CEM PM and CES PM, and Boards of CEM and CES</p>
Evaluation of the project	<p>Quarterly and annual reviews of project progress, by CEM and CES PMs and Boards, as outlined above under Monitoring.</p> <p>Quarterly and annual reviews by community representatives with CEM Trading staff.</p> <p>Annual community member reviews – including households, farmers/businesses – both through community evaluation meetings and individual feedback, including using visual cues for feedback from those who are illiterate.</p> <p>Mid-project CES PM visit to Malawi for project review meeting between community, CES staff and CES Trading staff</p> <p>End of project seminar with stakeholders, to share</p>	<p>CEM PM and CES PM, and Boards of CEM and CES</p> <p>CEM Trading and community members</p> <p>CEM/CEM Trading and community members</p> <p>CES PM/CEM PM and community members</p> <p>CEM PM</p>

	report and discuss findings / review success	
Learning from this project to improve future projects	End of project report and seminar, presenting financial modelling results and case studies	CEM/CES
	Sharing of results online and with relevant mini-grid and renewable energy networks as outlined in Q 50	CEM/CES

## Section E: PROJECT BUDGET

Applicants are requested to complete the Excel budget spreadsheet with details of the project budget. The section below is for the additional information that is required to support your budget as presented.

52. Total funds requested from Scottish Government:

Year 1: Nov 2017 – Mar 2018 (5 months)	£ 19,234
Year 2: Apr 2018 – Mar 2019	£ 40,136
Year 3: Apr 2019 – Mar 2020	£ 37,539
Year 4: Apr 2020 – Oct 2020 (7 months)	£ 0
<b>GRAND TOTAL</b>	<b>£ 96,909</b>

53. Please provide justification for any capital expenditure over £250 in your budget. An explanation of what constitutes capital expenditure has been provided in the guidance notes.

N/A

54. Please detail in the table below the international airfares in your budget; detail who the airfares are for, the dates, duration and reasons for travel. This applies to visits both to and from country. Please insert more rows if necessary. CES

Airfare (as detailed in budget)	Person travelling	To/From	Dates	Planned duration of visit	Purpose of visit
£900	CES Project Manager	Edinburgh to Lilongwe	November 2018	5 days	Project review during year 2, with CES and

					community

55. Please tell us about any matched funding sources for this project.

Matched Funding Source and Status		Matched Funding Amount				
Funding source	Are these funds secured?	2017/18	2018/19	2019/20	2020/21	Total
	Yes <input type="checkbox"/> No <input type="checkbox"/>	£0	£0	£0	£0	£0
	Yes <input type="checkbox"/> No <input type="checkbox"/>	£	£	£	£	£
<b>TOTAL MATCHED FUNDING</b>		£0	£0	£0	£0	£0

56a. Will there be any other non-financial support for this project, i.e. in-kind contributions?

Yes

No

56b. If yes, please give details of what these might be.

N/A

All completed applications should be submitted by email to:  
[international@ltsbfoundationforscotland.org.uk](mailto:international@ltsbfoundationforscotland.org.uk) to arrive no later than **12.00 noon on Monday 7<sup>th</sup> August 2017.**

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