

CEM Extension - End of Project Report

PLEASE READ ATTACHED GUIDELINES BEFORE COMPLETING THE FORM



Administrative Information

1. Lead Organisation	2. Name of Project:	3. Project Reference Number:
University of Strathclyde, Glasgow	Community Energy Malawi Sustainability Extension	Not applicable
4. Project Start Date:	5. Project End Date	6. Country to which block grant relates:
1 st June 2017	31 st March 2018	Malawi

Monitoring Objectives and Outcomes

7. Has the focus of the delivery of your project significantly altered since your last report? If so please explain how and why, and attach copies of relevant correspondence with the Scottish Government.

For work area 1 (1.1 to 1.4), work area 2 (2.1 to 2.5) and work areas 3.1 and 3.2 the focus of the delivery of our project has not significantly altered since the start of the project (June 2017).

There are 3 remaining work areas where the actual activities have deviated from the planned activities, to the extent where a revision of the logframe output indicator is necessary, namely 3.3, 3.4 and 4.1. These deviations are discussed in depth here and are referenced alongside logframe reporting in Q10 (where appropriate).

The 4 month delay to the start date of the activities for June 2017- March 2018 most significantly affected work area 3.3, simply because of the nature of the work itself. Work area 3 comprises of delivery of renewable energy systems for business owners, installation of the systems and subsequent use of the systems. These activities cannot be run in parallel and must be completed in sequential order. The knock-on effect is that the systems were installed late (in January 2018) and (as monitoring and evaluation visits take place on a monthly basis) only 3 data collection visits were able to take place before March 2018.

Work area 3.3 (combining feedback from the PUE owners into the PUE feasibility studies and business plans) relies wholly on the monitoring and evaluation data. CEM and UoS will continue to focus on this work after March 2018. The revised feasibility studies and business plans are expected to be in a final report in July 2018, once sufficient data has been collected.

Work areas 3.5 and 4.1, logframe deviations are required and were discussed with SG at an in-person meeting on 17-01-18 and a summary of the proposed deviations (as presented at the meeting) is included here for reference:

<https://drive.google.com/open?id=1O1eyCT9DiJim5hmPP90UIMgvSdpvN2X5>

Following the meeting the revised logframe output indicators were accepted by SG for both work area 3.5 and 4.1. The deviation is included in the logframe below where necessary and reported against in the reporting column in section 10.

8. Please summarise in one paragraph (no more than 300 words) the achievements of the project. You should include figures for the total number of beneficiaries supported both directly and indirectly and broken down by gender where possible.

CEM has been active in all 18 CBO's across all the districts they currently work in and have now assigned energy officers to different regions of the country, giving national coverage for the organisation. A full team comprising in country director, CEM Trading manager, finance manager, four development officers and two interns with the addition of a communications manager have been extremely active in demonstrating high impact DEOs, developing productive uses in Malawi through social enterprise, exploring the 'Energy Hub' idea for future funding development and mapping the future sustainability of CEDP projects. CEM has also engaged more widely with the Malawian renewable energy community through mapping the key opportunities and barriers for a Malawian minigrid market. A summary of the key achievements (with beneficiaries) in 2017/2018 are outlined below:

- CEM staff employed as energy experts for 1 year and retention of expertise (5 Male and 4 Female)

- CEM thoroughly assessed the sustainability of the CEDP systems and have identified the action plans for the community to proactively take action to support their system through maintenance and component replacement (proposed to continue throughout 2018-2019 and of high impact for the 72 effected communities)
- CEM provided refresher training for 28 solar energy technicians to perform minor system fixes at community level (benefiting the 21 Male and 7 Female technicians and the 28 communities within which they are based)
- DEO information exchange in Balaka district (325 local people engaged with the District Energy Officer directly)
- Through the minigrid learning paper CEM engagement was on a national level, encouraging lessons learnt across the renewable energy sector and acting as a catalyst for shared knowledge exchange for wider sector benefit
- CEM trading has increased sales over the year and expect to sustain sales next year

9. Discuss the achievements of your project in relation to the contributions it has made to the aims and objectives of the Scottish Government's Malawi Development Policy (maximum 300 words).

The Scottish Government International Development Policy aims and objectives include supporting achievement of the United Nation's Sustainable Development Goals (SDGs) and improved economic growth in developing countries by working in a focused way (including a special relationship with Malawi) to support relevant in-country priorities and policies.

In 2014 overall electrification rate in Malawi was 11.9% and in rural areas less than 2%. Since electricity consumption per capita is linked to higher Human Development Indicator ratings, electricity access is a key enabler for development directly linking to all SDGs and, in particular, Sustainable Development Goal 7 (Ensure access to affordable, reliable, sustainable and modern energy for all).

Sustainable and appropriate energy infrastructure at community structures, households and businesses, is an enabling technology for local communities to improve their quality of life, reduce poverty and develop economically, all aims stated in the Scottish Government's International Development Policy.

CEM promotes renewable energy in communities in Malawi and this funding has allowed CEM to continue its support for these communities, and develop as an organisation to more effectively provide a platform for these communities to access the clean energy services required to increase their quality of life. During this project, CEM has bolstered off-grid rural energy projects, directly addressing the national Malawian goals for achieving modern energy access nationally.

This funding has allowed CEM to consider their day to day work in the wider context of the Malawian political framework, proactively lobbying for sustained political support for high impact District Energy Officers working closely to the communities they serve. It has allowed CEM to consider novel approaches and business models for 'EnergyHubs', as a future sustainable pathway to productive use support and maximum local community impact from energy access, as well as opening up opportunities for the most vulnerable in society.

10. Please detail the progress you have made towards the achievement of your project's outputs and outcomes over the course of the project as identified in the project logframe.

Outcome: Demonstration of high impact DEOs. Develop productive uses in Malawi (either as an individual entrepreneur or as a group) through social enterprise. Explore the 'Energy Hub' idea for development in Malawi. Map the future sustainability of CEDP projects. International collaboration.			
Work Area 1: Strengthening Active Citizenship in Energy through high impact District Energy Officers			
Code	Activity	Output/Indicator	Reporting
1.1	UoS and CEM meeting with GoM (lobbying for budgetary support for District Level Energy activities).	Summary of meeting outcomes and the way forward reported to SG directly after the meeting or SG involved in the meetings. The meeting summaries will be	Continued engagement between UoS, CEM and GoM through meetings, the outcomes of which have been reported to SG on an ad-hoc basis during the course of the year.

		reiterated in the final reporting by the end of March 2018.	<p>Most significantly, during a meeting on the 25/08/2017, GoM provided extremely positive feedback on the District energy officer blueprinting recommendations paper, with minor changes. GoM provided a letter of support provided here: https://drive.google.com/open?id=1_jsdQ7KdfJsX2l6StIX2bQUeCTg0rnry</p> <p>Work area 1.1 activities are discussed in more detail on page 10 onwards of the final report for work area 1 as a whole found here: https://drive.google.com/open?id=1e3p3jPG8WgAmH_GsOD68ldqaOoUIGCQb</p>
1.2	Field work - Trial of DEO policy brief and key recommendations of DEO activities and responsibilities in 1 district within Malawi.	Summary of trial progress and key recommendations reported to SG in the final reporting (March 2018).	<p>At grassroots level, CEM spoke with stakeholders and institutions in 5 Areas Development Committees (ADCs) of Nsamala, Kachenga, Phalura, Amidu and Nkaya.</p> <p>A total of 11 primary schools, 1 secondary school, 2 irrigation schemes were visited and sensitized and advised on renewable energy technologies coupled with productive uses of energy. A total of 325 people have been directly reached with either sensitization messages or being backstopped on energy issues in this period.</p> <p>Those reached include 3 technicians in maintenance and operation department in health centres, 33 technical officers in agriculture enterprises (irrigation schemes), 35 teachers in school, 16 members in trading centres who are promoting the productive use of energy and 48 DEC members and other NGO's, 190 ADC members in 5 ADC.</p> <p>The major trial activities and key recommendations are presented alongside the background material on page 12 onwards of the final report (covering all aspects of Work Area 1 activities and results) given here: https://drive.google.com/open?id=1e3p3jPG8WgAmH_GsOD68ldqaOoUIGCQb</p>

			<p>Meeting summaries are mainly contained in the annex not to detract from the main report body (Annexes 1-7).</p> <p>An interim field work report was provided to SG and UoS by CEM on the 31st October, as found here (noting this is now preceded by the final report):</p> <p>https://drive.google.com/open?id=1gTcu8wyWOCaFcaC0Dau9pKGYBjPrVgaX</p> <p>A presentation was created by UoS and delivered by CEM to the District Executive Committee in Balaka and the slides can be found here:</p> <p>https://drive.google.com/open?id=1KvO0Ex7Nlwlypa7-tKjhcMys4nZiPQIJ</p>
1.3	Desk work - Review of the DEO brief and inclusion of key recommendations and challenges in further 1 trial report.	Updated DEO policy brief and activities reported to SG in the final reporting (March 2018).	<p>The recommendations for additions and edits to the blueprinting recommendation paper are presented alongside the background material in a holistic final report, covering all aspects of Work Area 1 activities and results. The recommendations are given in detail on page 14- page 17:</p> <p>https://drive.google.com/open?id=1e3p3jPG8WgAmH_GsOD68ldqaOoUIGCQb</p>
1.4	Desk work - DEO trial analysis; Economic and Social benefits from a dedicated DEO budget report.	A report delivered to SG and GoM on the social and economic benefit of the DEO role and budget from the trials. The report will be delivered within the final reporting (March 2018).	<p>Through collaboration with Loughborough University, The University of Strathclyde was able to leverage through the DFID funded Transforming Energy Access a 3-month placement for a social and economic impact factor expert ([REDACTED]) to focus on suitable social and economic impact factors to measure impact from energy access itself and the district energy officers.</p> <p>During the placement, [REDACTED] worked in Lilongwe and joined CEM on DEO visits to Balaka district to collect data and experiences for her research. A summary on the placement from [REDACTED] is found on the TEA website here: [REDACTED]</p>

			<p>The social and economic impact analysis report is presented alongside the background material in a holistic final report, covering all aspects of Work Area 1 activities.</p> <p>This is found on page 18 onwards: https://drive.google.com/open?id=1e3p3jPG8WgAmH_GsOD68ldqaOoUIGCQb</p> <p>Annex 18 and annex 19 in the same document are together the start of a social and economic impact development ‘tool’ that the DEO and existing extension workers can use in a standardised way across different districts in Malawi to measure social and economic impact of energy interventions.</p> <p>This ‘tool’ is important to justify energy interventions against spend and allows for off-grid projects to be assessed directly against other forms of developments, such as national grid extension.</p> <p>[REDACTED]’s research is ongoing, with a research paper based on her work with CEM expected to be published during 2018.</p>
Work Area 2: Supporting and reviewing sustainability through CEDP system monitoring			
Code	Activity	Output/Indicator	
2.1	Field work - Sustainability data gathering and community support visits.	A blog post by UoS summarising the field work and community support visits. A brief summary of the visits will be included in the final reporting delivered to SG March 2018.	<p>73 individual renewable energy systems at 22 locations were visited by CEM in August 2017 to assess the system performance status and enable an estimation of future sustainability.</p> <p>During the course of the year, CEM Energy Officer [REDACTED] created two ‘case studies’ of ‘success stories’ from the CEDP sustainability field work and community support visits. These are found here: https://drive.google.com/open?id=0B78-NNFPEg2LSFNnM1VFRzNjSm8</p>

			<p>and here: https://drive.google.com/open?id=OB78-NNFPEg2LVW1tcUNaTORtR1k</p> <p>A blog post detailing the positive effect from the CEDP systems on education standards in Ntchisi can be found here: https://strath-e4d.com/2018/04/24/cedp-system-and-education-standards-in-ntchisi/</p> <p>A mid-year report was delivered to SG in October 2017 and updated in April 2018 to capture all background, activities and learnings from work area 2 between June 2017 and March 2018. A brief field work summary can be found in final reporting documentation, found at: https://drive.google.com/open?id=1t4kgTKoh3HgUO4LscDSBGxvzanXRAzJh</p> <p>Finally, CEM and UoS have started a community energy action planning spreadsheet to create clear pathways for the community to support the systems through local means: https://drive.google.com/open?id=1DoCNFBX5YnG7JNYcE3KyU9gWHspa9T1d</p>
2.2	Desk work - Data analysis from Kobocollect and further capacity building with CEM.	Output from this work is expected to be a report to SG including the sustainability of the CEDP systems based on the survey results and site visit experience.	<p>The work area allowed CEM and UoS to get a firm understanding of the status of all CEDP renewable energy systems and create a preliminary way forward to sustainability.</p> <p>A full analysis of system sustainability is provided in the same report as provided for section 2.1: https://drive.google.com/open?id=1t4kgTKoh3HgUO4LscDSBGxvzanXRAzJh</p> <p>In addition, a preliminary action plan with a main focus on community support mechanisms is provided in the same excel sheet as above: https://drive.google.com/open?id=1DoCNFBX5YnG7JNYcE3KyU9gWHspa9T1d</p>

2.3	Desk work - Mapping sustainability of PV systems using MonteCarlo project risk assessment.	The output from this work is a report delivered to SG on the results from the MonteCarlo tool including a prediction of future system sustainability.	<p>A research paper is submitted to the IEEE Power Africa conference in Cape Town 2018 detailing the novel MonteCarlo modelling approach, given here: https://drive.google.com/open?id=1TudO6SBzcydWgJlXsd_C2D8lPgJkRpfV</p> <p>The methodology will be presented during the conference and extended into a journal publication in 2018. The MonteCarlo model results compared to the CEDP system performance data is presented separately here: https://drive.google.com/open?id=1SqBZ-rLnyLhek3hSymqICla3_urtEfWS</p>
2.4	Workshop - Workshop with previously trained technicians and provision of tools.	The results from the workshop will be delivered to SG through a final report March 2018. The workshop material and summary will be freely available on the Strathclyde blog.	<p>At the end of 2017, CEM continued their year-on-year training offer to support 30 technicians through 'refresher training' delivered in the community.</p> <p>The aim of the continuation training is to ensure the CEDP renewable energy systems (installed in 2014 in 10 community based organisations around Malawi) are supported by up-to-date technical knowledge, fostered within the community where the installations are situated.</p> <p>The training manual was developed by CEM and builds upon previous knowledge and provides further engineering knowledge related to renewable energy systems.</p> <p>Of the 28 participants:</p> <ul style="list-style-type: none"> • 25% were female • 25 of the participants were returning technicians and 3 were replacements (as identified by the community and CEM together) for missing technicians <p>The results from the workshop are summarised in a final report found here: https://drive.google.com/open?id=1cAvAHsMYC8q71_OKCA8bBAbTpNYC7yJ4</p>

			<p>A blog post, detailing the refresher training is given here: https://strath-e4d.com/2018/03/29/continued-commitment-to-community-based-technical-support-for-renewable-energy-systems-in-off-grid-rural-africa-how-refreshing/</p> <p>The workshop material is provided here: https://drive.google.com/open?id=0B78-NNFPEg2LVmZ3a2piT0owMW8</p>
2.5	System Redesign and sizing guide.	Provision of a system sizing guide delivered to SG through a final report March 2018.	<p>CEM use a system sizing guide based on work by Jignesh Parmar, the excel that forms the basis for their guide is here: https://drive.google.com/open?id=1zRg8doutLiGEX1_ci73r2-ePPZamKrjA</p> <p>For work area 2.5 CEM and UoS have verified the basic solar load vs. system capacity calculations used in this excel. The CEM full resizing report (based on this excel) is found here: https://drive.google.com/open?id=1WO7auF_pGNcVm8Wanfxoll2g2_Zffw9d</p> <p>The document is a working document and will continue to be improved, with audience and accessibility by the community in mind. It is directly useful for CEM in improving CEDP system sustainability over the coming year and will be delivered to the communities with CEDP systems as well as linking to the District Energy Officer.</p>
Work Area 3: Business development; Entrepreneur and social enterprise			
Code	Activity	Output/Indicator	
3.1	Field work/desk work – productive use of energy trail support.	A brief summary will be provided to SG in May 2017 giving details of the identified way forward for a PUE trial and the necessary support. The full	The 4 month delay to the start date of the activities for June 2017- March 2018 most significantly affected work area 3, due to the nature of the work itself. These activities cannot be run in parallel and must be completed in sequential order. The knock-on effect is that the systems were installed late (in January 2018).

		assessment will be provided as part of final reporting in March 2018.	<p>Aside from the delays to this work area, 6 PUE business owners were identified by CEM (3 male and 3 female) supporting refrigeration, barbershops and shop lighting.</p> <p>As a deviation to the output indicator for this work area, it is proposed the 'final report' is replaced by a 'working report' to be taken forward into the next funding period for CEM to update as the data is available. If this is an accepted deviation, the working document is found here: https://drive.google.com/open?id=1ksxKdRxfV2tPZ6zaPaFcf-hKzX8BiCBQ</p> <p>and will be continually updated, with a suggested revised final report delivery in July 2018.</p>
3.2	Field work - Visits to the supported PUE to carry out a feedback survey and to support the PUE owners with problems during business set-up.	A summary of the visit will be provided to SG shortly after the visit (expected to be August 2017). UoS will produce a blog post detailing the field work. The full field work report will be provided as part of final reporting in March 2018.	<p>The post detailing the PUE work so far was used as an opportunity for a capacity building exercise between UoS and CEM. CEM were tasked with creating the post right through to publishing on the E4D blog. UoS mentored Morton (trading manager from CEM) in producing the final blog and this can be found here: https://strath-e4d.com/2018/04/23/pay-as-you-go-renewable-energy-systems-for-malawian-businesses/</p> <p>As a deviation to the output indicator for this work area, it is proposed the 'final report' is replaced by a 'working report' to be taken forward into the next funding period for CEM to update as the data is available. If this is an accepted deviation, the working document is found here: https://drive.google.com/open?id=1ksxKdRxfV2tPZ6zaPaFcf-hKzX8BiCBQ</p> <p>and will be continually updated, with a suggested revised final report delivery in July 2018.</p>

3.3	Desk work - Combine feedback from the PUE owners into the PUE feasibility studies and business plans.	As part of the final reporting (expected to be complete end of March 2018), the updated business plans will be included, incorporating feedback from PUE support and trials.	<p>CEM and UoS developed a data collection excel to monitor monthly CAPEX and OPEX for the pay-as-you-go business owners after their renewable energy system was installed by CEM. The tool is found here: https://drive.google.com/open?id=1yEwIPp4evzPgGNzK70Xenpsux9O0ep52</p> <p>Monitoring and evaluation visits take place on a monthly basis so only 3 data collection visits were able to take place before March 2018, therefore there are only 3 months' worth of data.</p> <p>Work area 3.3 (combining feedback from the PUE owners into the PUE feasibility studies and business plans) relies wholly on the monitoring and evaluation data. CEM and UoS will continue to focus on this work after March 2018. The revised feasibility studies and business plans are expected to be complete by July 2018, once sufficient data has been collected.</p>
3.4	Productive Uses of Energy - Energy Hub feasibility study.	A full feasibility study and business plan for an Energy Hub development in Malawi will be delivered as part of the final reporting (expected to be complete end of March 2018). This outcome will support future investment and funding for an Energy Hub in Malawi.	<p>As work began on this deliverable, it was soon apparent that a full feasibility report wouldn't be possible without a specific location for EnergyHub development in mind, as there are many vital project variables that are location specific (such as local affordability). We considered picking a location, however by being too specific the results would not be relevant or useful to EnergyHub development at other locations.</p> <p>To allow the report to be useful in future, the work has deviated from the logframe output/indicator. The deviation was discussed with SG during an in-person meeting (for this purpose) on 17-01-18 and accepted as an appropriate deviation. Further details of the deviation are found here: https://drive.google.com/open?id=1cEMuGM5L3IoQDFVnsmxVUurzmBilorBF</p> <p>A revised output/indicator was agreed:</p>

			<p><i>'A pre-feasibility study and simple business plan for an Energy Hub development in Malawi will be delivered as part of the final reporting (expected to be complete end of March 2018). This outcome will support future investment and funding for an Energy Hub in Malawi.'</i></p> <p>A pre-feasibility study fulfilling the revised output/indicator is found here: https://drive.google.com/open?id=1TxKfNkSkR41Zd4t-oHPx-UVEzXk3P2Q3</p> <p>The pre-feasibility results are currently being used to support proposals for future investment and funding for an EnergyHub in Malawi.</p>
Work Area 5: Mini-grid development. Lessons learnt from a change in scale			
Code	Activity	Output/Indicator	
4.1	UoS to set up and lead a learning consortium with CEM to disseminate lessons learnt for mini-grids in Malawi.	An active online consortium led by UoS with useful events and communications for mini-grid development in Malawi and internationally.	<p>This work area was intended to compliment the mini-grid learning activities proposed in the draft Malawi Renewable Energy Strategy and the parallel work by the mini-grid clearing house (established by the UNDP clean energy mini-grid programme).</p> <p>As this work began it became apparent that an online 'data and knowledge repository' was already within the remit for the UNDP mini-grid clearing house, active up to 2019.</p> <p>To align the work package with activities of the UNDP mini-grid clearing house (rather than replicating them) we proposed a deviation to the logframe output/indicator. The deviation was discussed with SG during an in-person meeting (for this purpose) on 17-01-18 and accepted as an appropriate deviation. Further details of the deviation are found here: https://drive.google.com/open?id=1cEMuGM5L3loQDFVnsmxVUurzmbIlorBF</p>

			<p>A revised output/indicator was agreed: <i>'Delivery of a learning report on the current minigrid sector in Malawi, including:</i></p> <ul style="list-style-type: none"> <i>• a summary of Past and Current minigrid Projects in Malawi with a focus on failures and success</i> <i>• stakeholder Mapping</i> <i>• case studies drawing out key lessons from experience of previous initiatives</i> <i>• CEM UNDP minigrid – overview of the process capturing key lessons from project including design, planning, implementation, operation and maintenance</i> <i>• current barriers and challenges to minigrids in Malawi with recommendations to address them'</i> <p>The learning report can be found here: https://drive.google.com/open?id=1Uw_Lh4cEKuUIIDVKoRi4zSeSwZ7eOldF</p>
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11. Please detail the progress you have made against the relevant programme level indicators as set out in Q36 of your application form.		
Indicator	Baseline	Current value
See above		

12. Have any of the risks identified in your original application been realised? If so, which ones and what actions have been taken in response?	
Risk realised	Action taken
No risks identified	

13. Have you experienced any other issues/problems during the course of the project? If so, what actions have been taken in response?	
Issues/problems	Action taken
PROJECT DELIVERY	
--- Raised by UoS ---	
As in 2017, communication difficulties with CEM caused by very poor internet connection	The issue was raised during in-person meetings held between UoS and CEM in Malawi, and regularly brought up during remote meetings. It is unclear to UoS why the internet has not been addressed by CEM. An upgraded internet package at the office would have a significant positive impact on the effectiveness of the CEM team and UoS will continue to bring this up as an issue. Power black-outs are also acknowledged as a contributory issue and small solar PV back-up systems to support key organisational functions should be considered this year.
Inconsistent quality of reporting delivered by CEM.	This year, CEM agreed to deliver mid-year reports to SG as a learning activity for delivering reports directly to a funding body. The reports were delivered in October 2017 and were very good and a significant improvement on some of the reports previously delivered to UoS. Subsequent reporting to UoS has been inconsistent. Therefore, with the capacity clearly demonstrated, UoS proposes moving to a more clearly defined collaboration model with CEM retaining full responsibility for reporting on CEM led activities.

<p>Lack of clarity in respective roles and responsibilities with regards to management and oversight. The ultimate purpose of this funding stream is 'CEM capacity building'. However, this is framed around a programme of impactful work, which has been delivered successfully. In the course of the last 3 years (since MREAP closed) the UoS/CEM relationship has evolved and CEM capacity has developed. Misunderstandings of roles and responsibilities at management level occasionally affect pace and quality of progress.</p>	<p>The relatively open and honest relationship that exists between CEM and UoS has allowed these issues to be raised and the programme of work has been successfully delivered.</p> <p>To further improve joint working and realign understanding of roles and responsibilities, UoS propose a process of constructive reflection and a joint 'Action Learning' workshop on operational optimisation (suggest to commence in May 2018).</p>
<p>--- Raised by CEM ---</p>	
<p>Some mismatch between activity budgets and activity costs</p>	<p>Some activities were completed in parallel to achieve the planned work streams with a reduced activity cost, coming within the budget. In future, more time should be spent on activity planning to make sure the budget reflects the needs of the officers to carry out the tasks.</p>
<p>Civil unrest in Mulanje from September 2017 – December 2017: Rumours of “blood-sucking” created community tension in the Mulanje areas resulting in cars being burned, injury and death to some community members.</p>	<p>All fieldwork in the area was immediately halted and resumed only when assurance was given from trusted partners in the local area as to the safety of the situation. CEM continue to monitor the situation and will adjust adapt fieldwork plans with the safety of staff as a priority.</p>
<p>--- Raised by CEM and UoS ---</p>	
<p>Significantly late start to the projects (4 months late) as the 2017-2018 funds were not released by SG until the 'Renewable Energy Toolkit' was print ready.</p>	<p>A UoS researcher travelled to CEM in May to meet with the illustrator of the 'Renewable Energy Toolkit', as he was not working quickly on bringing the toolkit to completion and was the source of delay for the document. Following the meeting the illustrator subsequently delivered the document with haste.</p> <p>However, the document caused a 4 month delay in the 2017-2018 work activities from the start. Therefore, UoS and CEM worked together at revising the project plans to work efficiently and fit the new timescales. Therefore, in April 2018, this delay had limited knock-on effect, only impacting work area 3.3. As we only have 3</p>

	months' worth of PUE owners' data, we cannot use this data as a basis for an updated business plan for pay-as-you-go PUE renewable energy systems. We fully expect to achieve this deliverable post-April, as more monitoring and evaluation data is collected and available to inform the business plans.
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Response to Previous Progress Reports

14. What progress has been made in response to comments made on previous progress reports?	
Comments	Progress to the response
No comments provided on previous reporting	

Financial Reporting

15. Please provide a detailed breakdown of actual expenditure for the last financial year, compared to the projected expenditure submitted along with your original application (or a later version agreed by SG).		
Budget headings	Projected Expenditure (in £)	Actual Expenditure (in £)
Staff Costs		
Total for Scottish Staff	£27,269	£27,269
Total for National Staff	£50,674	£50,047
Sub-Total Staff Costs	£77,943	£77,316
Running costs in Country		
Overheads		
Office Costs	£11,722	£12,353
Other	£4,500	£4,903
Sub-Total Running costs in Country	£16,222	£17,256

Travel - International		
International Airfares		£970
International staff other travel costs	£2,000	£1,030
Sub-total International Travel	£2,000	£2,000
Travel - National		
In-country travel (all other)	£12,893	£12,505
Sub-total National Travel	£12,893	£12,505
Subsistence		
National staff	£1,760	£2,257
Sub-total Subsistence	£1,760	£2,257
Activity costs		
1.1 UoS and CEM meeting with GoM	£389	£0
1.2 Field work - Trial of DEO policy brief and key recommendations of DEO activities and responsibilities in districts within Malawi (1 trip only)	£3,890	£3,324
1.3 Desk work - Review of the DEO brief and inclusion of key recommendations and challenges in further 3 trials report	£0	£0
1.4 Desk work - DEO trial analysis; Economic and Social benefits from a dedicated DEO budget report	£0	£0
2.1 Field work - Sustainability data gathering and community support visits	£776	£870
2.2 Desk work - Data analysis from Kobocollect and further capacity building with CEM	£0	£0
2.3 Desk work - Mapping sustainability of PV systems using MonteCarlo project risk assessment	£0	£0
2.4 Workshop - Workshop with previously trained technicians	£6,526	£6,947
2.5 System Redesign and sizing guide	£776	£0

3.1 Field work/desk work – productive use of energy trail support	£4,000	£3,771
3.2 Field work - Visits to the supported PUE to carry out a feedback survey and to support the PUE owners with problems during business set-up	£1,552	£1,189
3.5 Productive Uses of Energy - Energy Hub feasibility study	£0	£0
5.1 UoS to set up and lead a learning consortium with CEM to disseminate lessons learnt for mini-grid in Malawi.	£776	£674
Sub-total Activity costs	£18,685	£16,775
Capital costs	£496	£419
TOTAL	£130,000	£128,528

16. Please comment on the breakdown of expenditure in Q15 above, particularly explaining any significant disparities between projected expenditure and actual expenditure within the relevant financial year.

Budget expenditure and actual expenditure are extremely similar for 2017-2018, as shown by the figures in Q15 above. There are no major disparities between projected expenditure and actual expenditure this year. Some activity costs are different to the expected activity cost, due to CEM completing some activities in parallel to improve efficiency. There is an overall underspend of £1,472 within the final CEM account.

17. Please provide a detailed breakdown of actual expenditure for the full project, compared to the projected expenditure detailed in your original application (or a later version agreed by SG). **

Budget Headings	Actual Expenditure (in £)	Projected Expenditure (in £)
As above – budget was carried out in the same year		

18. If there are any funds remaining unspent, please provide an explanation below and details of how you intend to spend them. (Using a separate sheet if needed.)

There is no underspend in the UoS account for this work. A relatively small total underspend of £1,472 is reported by CEM. With SG agreement, CEM request any final CEM underspend to be spent in the upcoming period to further the impact of the proposed activities.

19. Please comment on plans for the disposal of capital assets at the end of the project in line with the terms and conditions under point 6 of your grant offer letter.

The only capital assets in this funding period are the personal renewable energy systems for the PUE owners, as delivered under work area 3. These systems are subject to the pay-as-you-go business ownership model, as the novel primary research focus of work area 3. Therefore, as expected, CEM will own the PUE systems during the micro-finance period. During this time, CEM are responsible for all maintenance for the systems on behalf of the business owners. After this, ownership will divert to the business owner and the business owner will be responsible for the maintenance of the system.

20. Have you secured any other funding for your project? Please explain if this funding has significantly differed from anticipated, and if so, why?

There is a marked difference for this year (June 17- March 18) as CEM has actively sought out and secured long-term funding, which is able to cover 57% of core costs in the period March 18 – March 19. This is extremely encouraging and in-line with the long-term goal for SG and UoS towards supporting CEM to achieve self-sufficiency.

More specifically, for next year (March 18 – March 19) and beyond CEM have secured:

- PITCHES project running from August 2017 to April 2019 with a total project budget of £60,226. Powering Isolated Territories with Hydrogen Powered Energy Systems is a research project CEM is conducting for ITM power on the feasibility of hydrogen energy. £60,226 covers CEM staff time, travel and subsistence, and overhead costs.

- UNDP project running from May 2017 to April 2020 with a total budget of \$222,000 (noting more funding might be committed to increase the mini-grid size from 45kW to 80kW). \$72,000 of the total budget is allocated to CEM core costs (with \$150,000 for equipment procurement costs – handled by UNDP).
- CJIF productive uses (complimentary to the UNDP project at Sitolo), running November 2017 to October 2021 with a total budget of £96,909. £16,693 is allocated for capacity building training, out of the remaining £80,216, £46,905 is allocated to CEM core costs.

Sustainability

21. What have you done to ensure that the outcomes of your project are sustainable and will be built-on or continued?

It has been acknowledged that reliable and skilled staff are essential for sustainability. A focus has therefore been put on capacity building with staff; with extensive in-country training in Kobocollect, to allow the staff to become more self-sufficient with using kobo and analysing the results.

UoS and CEM are continually tracking CEM core funding. CEM are performing well and becoming less reliant on SG funding every year.

Proposed future activities for CEM and UoS to work on build heavily on the most promising and successful activities undertaken in 2017-2018. CEDP sustainability activities address directly the sustainability of previously installed renewable energy systems through identifying community solutions and a solid action plan.

Project Partnerships

22. Please provide a concise narrative with examples of effective partnership working from your project. Please limit your answer to 250 words.

Strong partnership made between UoS [REDACTED], Aran Eales and Damien Frame and CEM Country Director Edgar Bayani and the CEM team through skype conversations held and frequent correspondence through emails. The partnership will continue effectively for future collaboration between the respective organisations.

Long standing partnership between Loughborough University, UoS and CEM has continued through the postdoctoral placement of [REDACTED] at the CEM offices (discussed at length on Q10). Other partnerships are as identified below:

Organisation	Area of Speciality	Type of Collaboration with CEM
University of Strathclyde	Renewable energy research	Working together on SG Grant
		Working together on new project proposals
		Helping to raise CEM Profile
		Conducting parallel research alongside the CEM activities
Community Energy Scotland	Renewables	Co-implementers of Climate Justice Innovation fund on Sitolo minigrid
Government of Malawi	Policy	Knowledge exchange meetings
UNIMA – The polytechnic	Minigrids	Stakeholder Surveys for minigrid report
Malawi Energy Regulatory Authority	Minigrids	
Department of Energy Affairs	Minigrids	
Mawerera enterprises	Minigrids	
SONLITE SOLAR	Minigrids	
Mulanje Renewable Energy Agency (MuREA)	Minigrids	
Mzuzu University	Minigrids	
The University of Loughborough	Social science	
INDIO pay-as-you-go solar	Supplier for pay-as-you-go-solar	Productive Uses of Energy
Balaka District Executive Committee	Policy	District Energy Officer activity trial input
Balaka Development officers	District governance	District Energy Officer activity trial input
National Institute for Civic Education	Education	District Energy Officer activity trial input

Balaka District Council District Planning Director	District governance	District Energy Officer activity trial input
Balaka District Council Environmental District Officer	District governance	District Energy Officer activity trial input

23. How has feedback, monitoring and evaluation been sought from your partner organisations in Malawi? Please also detail any significant feedback you have received from your partner organisations.

For the first few months of the funding period, ongoing feedback and monitoring was conducted during weekly meetings between UoS and CEM, with a verbal review of the weekly progress and instant feedback given as to next steps.

CEM officers were encouraged to participate more in project monitoring through a rotating meeting minutes' role, entitled 'DJ of the week', where they were supported by UoS in taking minutes and actions during the meeting and taking an active interest in monitoring the actions of the team throughout the week.

'DJ of the week' was a success for the planning stages, but was not maintained through the implementation stages of the activities as members of staff were regularly out of the office on field work. UoS aim to revisit the idea with CEM after April 2018 with a view to actively maintaining the role through the implementation stages of the next funding period.

Further Information

24. Please let us know if any of your contact details have changed

No change

End of Project Report Reviewed by

Name	Affiliation
Damien Frame	Research fellow

Prof. Stuart Galloway	Energy for Development academic lead
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Report Prepared by

Signed by: [REDACTED]

Date: 27/04/2018

Designation on the Project: CEM Extension Project Lead

Signed:

[SIGNATURE REDACTED]

Signed by: Aran Eales

Date: 27/04/2018

Designation on the Project: CEM Extension Support

Signed:

[SIGNATURE REDACTED]

Guidance Notes: Full Financial Report

- This report is to be completed by all Project managers/leaders at the end of each financial year.
- Please complete this form electronically.
- Once complete please send this reporting form, by email to: penny.george@scotland.gsi.gov.uk
- The report should be submitted by the end of April of the year directly following the financial year to which this report relates.

Question	Guidance
Administrative Information	
1	Insert the name of your Organisation in the space provided.
2	Insert the name of your Project in the space provided. Make sure that this is the same name given in your grant offer letter.
3	The Project reference number was given to you by the Scottish Government in your grant offer letter – please refer to it in all correspondence. This is a number unique to your Project and helps the Scottish Government track information related to your Project within the system.
4	The start date is the date you received your first tranche of funding.
5	Please insert the date your project has drawn to a close.
6	Insert the country to which the block grant relates (Malawi, Zambia, Tanzania or Rwanda).
Monitoring Objectives and Outcomes	
7	If your Project has changed significantly in the focus of its delivery since your last report, please explain how and why, attaching copies of all relevant correspondence you have had with the Scottish Government about this.
8	Please provide a brief summary of the achievements of the project including figures for total number of beneficiaries aided both directly and indirectly as well as a gender breakdown. You should also use the case study template to provide a case study of the project.
9	In 300 words or less please discuss the achievements your Project has made towards the aims and objectives of the Scottish Government’s Malawi development Policy.
10	With reference to your Outcomes and Indicators, as detailed in your logframe, please complete the table. In the first column list the Outcomes and Indicators used to monitor your progress in achieving these. In the second column, provide figures for the baseline indicator at the start of the project and in the third column provide figures for the indicator level at the end of the project. Where possible insert values, e.g. the indicator may be: ‘one workshop on improved food preparation techniques in each of 5 communities by June ’15.’ Progress against this indicator might be ‘3 workshops held in 3 different communities.’ In the third column you should also provide an assessment of whether you have achieved the outcome statement in column 1. You have three options: Fully achieved; Partially achieved; Not achieved.

11	Please provide a summary of progress against the programme level indicators as identified in Question 45 of your original application form.
12	Comment on any risks that you identified in Q38 of your original application that have been realised. Please explain what actions you have taken to address these or what actions you intend to take.
13	Please comment on any issues or problems you have faced over the reporting period, how you addressed them or how you intend to address them.
Response to Previous Progress Reviews	
14	You may have received a query or comment from the Scottish Government previously to which you are required to respond. If this is the case then please record the comment in the first column. In the second column explain what action you have taken to respond to that comment.
Financial Reporting	
15	Please provide a detailed breakdown of expenditure incurred against expenditure planned over the last 12 months, using the budget headings agreed with Scottish Government either at the beginning of the grant, as per Q41 of your original application, or during the grant if you have had approval to change budget headings.
16	Please comment on the detailed breakdown attached in Q15, in particular explaining any significant disparities between projected and actual expenditure.
17	Please provide a detailed breakdown of expenditure incurred against expenditure planned during the course of the project, using the budget headings agreed with Scottish Government either at the beginning of the grant, or during the grant if you have had approval to change budget headings.
18	Please comment on any outstanding amount that is left in the budget and provide an explanation for why it has not been spent, bearing in mind that you should have previously alerted the Scottish Government if you were expecting to have an underspend at the end of the financial year. You will need to include a proposal for how you will spend any remaining budget.
19	With respect to any capital assets that have been paid for through Scottish Government funds, please provide a full explanation of any such assets held by the project and any plans for their disposal as outlined in point 6 of your grant offer letter.
20	Have you been successful in securing any other funding over the last 12 months? If so, please give details. You may wish to refer to Q50a of the application form.
Sustainability	
21	Please describe what has been done over the last 12 months to ensure that the outcomes of your Project are sustainable and will be built-on or continued. Assess how likely Project outcomes are to continue once the Project ends and tell us what you are doing to encourage continuity.
Project Partnerships	
22	A key element of the International Development Fund is the <u>two-way</u> exchange of knowledge and expertise between Scotland and developing countries. The Scottish Government wants to ensure this is happening, therefore, please provide a concise narrative with examples of effective partnership working from your project. Please limit your answer to 250 words.
23	Please describe how feedback, monitoring and evaluation have been sought from your in-country partner organisations. You might comment on the mechanisms in place to ensure effective feedback, monitoring and evaluation. Please also detail any significant feedback you have received.
Further Information	

24	We would be interested to hear any stories that illustrate the positive impact the Project is having. Please include any further information or comments you feel are important but not covered in this form, that might facilitate the effective monitoring and evaluation of the progress made on your Project. Please limit your answer to 500 words.
25	It is essential that you let us know if any of your contact details have changed, either in Scotland or in Sub-Saharan Africa.