MREAP - END OF PROJECT REPORT, JUNE 2015



Context - Malawi Renewable Energy Acceleration Programme (MREAP)

The Scottish Government commissioned a Scoping Study on Supporting Community Energy Development in Malawi in 2011 and the outcomes pointed to a range of programme activities that the Scottish Government might support.

Those recommendations were taken forward in the form of the Malawi Renewable Energy Acceleration Programme. MREAP was managed by the University of Strathclyde, had seven main partners, governed by a Programme Steering Group (co-chaired by the Government of Malawi Department of Energy Affairs and the University of Strathclyde) and was funded to the total of £2.26m. MREAP project activities ran from January 2012 – March 2015.

The following summary is extracted from the final report to the Scottish Government prepared in May 2015.

SUMMARY OF MREAP ACHIEVEMENTS

At many levels from Community to Academia to Government, MREAP has been a catalyst for the use of renewable energy to improve the lives of Malawians, particularly the rural poor. Nearly 80,000 now have improved access to energy services as a result of MREAP. In a country where less than 1% of the rural population has access to electricity, this is a transformational change. A light in the home, in a school and at a health centre may seem basic but it is, in fact, a critical first step for improved livelihoods for families, improved education for young pupils, and better care for new mothers and babies. MREAP with its network of dedicated partners have touched the lives of many communities throughout 16 districts in Malawi. We have empowered communities to own and manage projects. We have created a momentum in the Government of Malawi's Ministry of Natural Resources, Energy and Environment and the Department of Energy Affairs who lead the energy policy development; MREAP has demonstrated the potential benefits community energy can provide. Academic institutions in Malawi are training communities on the use of renewable energy, how to manage projects, and how to keep them sustainable. A new Masters in Philosophy in Renewable Energy degree has been created under MREAP and 13 students are on track to finish their studies in 2015. The MPhil programme is the first of its kind in Malawi and is a fundamental building block towards improving the research and leadership capacity in the country; these students will be the next generation of leaders in their field. MREAP has produced a wealth of knowledge on highly relevant subjects such as the process of setting up sustainable off-grid renewable energy projects in Malawi, feasibility for commercial scale wind, gaps and challenges in sustainability of off-grid solar PV projects, and produced a multi-language toolkit to help communities get a start for themselves. The ambitions of Sustainable Energy for All (SE4ALL) in Malawi cannot hope to be achieved with projects operating in isolation or disconnected from the enabling environment within the country. MREAP has shown that integration of project deployment, capacity building, institutional support, and knowledge creation can be complementary and accelerate the process of change.

ACHIEVEMENTS OF MREAP IN VIEW OF THE AIMS AND OBJECTIVES OF THE SCOTTISH GOVERNMENT'S MALAWI DEVELOPMENT POLICY

The Scottish Government International Development (SGID) Policy supports the Malawi driven development agenda over six key areas including sustainable economic development – of which renewable energy is an important component. MREAP was designed to accelerate the use of renewable energy in Malawi through multiple work streams coordinated through a programme steering group. While energy is not specifically addressed in the Millennium Development Goals (MDGs), it is widely accepted that the provision of energy is crucial to the success of the named goals. The recent UN Sustainable Energy for All initiative as selection as a Sustainable Development Goal (No. 7) which replaces the MDGs in 2015, formalizes energy's critical role.

Increased modern energy access and use of renewable is likewise a goal of the Malawian Growth and Development Strategy II. Though it makes reference to increased use of renewables, does not lay out any specific plans to achieve higher penetration rates (beyond large scale hydro projects). There is a distinct gap with respect to off-grid electric supply and community energy, which MREAP has sought to provide experience and learning. In areas MREAP has worked in, it has created awareness at the community, district, and national levels and the experience serves as critical evidence for future policy making, especially with regards to rural electrification and biomass management. Finally, the provision of the wind energy bankable yield report by MREAP is a crucial enabler for larger scale wind in Malawi.

By the provision of improved energy access to nearly 80,000 people, MREAP has provided benefits in many forms for Malawians who are energy impoverished – from lighting at households, schools, and health centres, to the increased use of more efficient cook stoves that reduce the amount of inhaled particulates if used correctly. MREAP has support approaches that empower communities to achieve real change through the use of renewable energy technologies.

MREAP has therefore supported SGID by the direct provision of energy access for Malawians and the support of the enabling environment through documented case studies and experiences in community energy.

PROGRESS MADE TOWARDS THE ACHIEVEMENT OF MREAP OUTPUTS AND OUTCOMES AS IDENTIFIED

IN THE **PROJECT LOGFRAME**.

Output/Outcome (including indicator)	Baseline data	Progress made against each indicator
Output/Outcome: MREAP programme	Accelerate the growth of community and renewable energy development in Malawi through multiple, targeted and coordinated activities with good potential to provide a platform for that growth.	
Outcome indicators:		

Evidence of coordination between existing structures and existing committees (Village, community and District levels)	Evidence of greater coordination with Village / District recognition of effective energy investment plans and associate technical support	The Process Evaluation states that an analysis of evidence suggests the CEDP projects have contributed to an improvement in quality and relevance of education and that over time this could lead to improvement in zonal level results. An analysis of District Education Plans (DEP)s provided evidence that CEDP projects are targeting the most vulnerable and underperforming schools. However, it appears that the process of engaging with District level officials in relevant sectors (health, education, social welfare) has been unsystematic. Where Primary Education Advisers have been engaged there has been a modest amount of influence on them, which in turn has supported an increased awareness of the benefits of energy.
Village renewable energy for community infrastructure (schools / clinics and water) linked to needs assessments and village/district plans	3 village level plans prepared around RET use which are linked to the District planning / investment strategies on energy and poverty reduction.	No village level plans developed; note this workstream was removed with SG approval.
Community-based needs based planning and facilitation is recognised as appropriate tool for the design of village/ community RETs	Demonstration that community facilitation leads to effective installation with appropriate business plans for long term O&M. Approach recognised as appropriate to context of Malawi.	Process evaluation states the process taken by CEDP is appropriate and includes business plans (though sustainability is not necessarily assured). Efficacy of the projects is currently early to judge, though indications at this stage is that there are contributions towards improvement human, social, ecological capital as expressed by the Sustainable Livelihoods outcomes
Outcome: CEDP	Effective community support & empower of support the effective for Malawian commu (the M&E framework	has A needs based sustainable application of small scale decentralised Renewable for households and communities)
% growth of fund for operations and maintenance over time	No fund	Fund established in 12 CBOs, unclear if all funds are sustainable
Increased retention of school teachers and health clinic workers	Community energy study indicated a problem with new teachers / teacher retention (anecdotal)	Benefits to teachers and health clinic staff from lighting Teacher Retention Survey states higher teacher satisfaction
Output/Outcome: ISP	Institutional Support Programme - Malawian institutions have evidence and systems to support the effective development of the renewable energy sector to provide development benefits for Malawian communities.	
ISP1 - Programme Steering Group operational	No PSG	5 PSG meetings held over 2012-2015: May 2012, Oct 2012, Nov 2013, April 2014, Mar 2015
ISP2 - Community Renewable Energy Evaluation	SG Scoping report 9/2011	A community energy evaluation completed and published in project year 2.
ISP3 - Framework for community energy monitoring, evaluation and learning which	No baseline available	Full M&L Framework published in 2013. Revised version used when project details became available. Analysis completed and compiled with Process Evaluation Report. Process evaluation presented at PSM Meeting held in Mar 2015.

ISP4 - Support to	No relevant	No policy framework is in place, though we have facilitated process to bring
development of	baseline	Scottish Government Support to Malawian Department of Energy and provided
renewable energy		key background documents on how Malawi can engage with the international
strategy and Scotland-		community especially with respect to SE4ALL.
Malawi policy		
development		
ISP – Financial Training	Limited financial	Financial Management training provided Nov 2014.
and Funding Support	structure and	Funding options made available to Community Energy Malawi in Jan 2015
Research provided for	awareness of	
Community Energy	financial	
Malawi	opportunities for	
	Community Energy	
	Malawi	
Output/Outcome: CEDP		evelopment programme -
CEDD1 1 Design and make	-	Energy Support Network and Tools
CEDP1.1 Design and make	[1] No toolkit	The toolkit was published and launched in June 2014. The toolkit is comprised of
widely accessible a	available	a primary toolkit (written document for those with higher literacy levels e.g.
community RE project toolkit		development workers and Government officials) and a secondary toolkit (a booklet detailing how to maintain and fix systems and a series of diagrams with
LOOIRIL		key messages from the primary toolkit aimed at those with lower literacy
		levels). The toolkit has been distributed to all CEDP CBOs and key sector
		stakeholders and is available on the CEM website (see Project Discussion and
		Narrative section)
CEDP 1.2 Establish a	[2] no inventory	The CEDP M&E Database capturing CEDP project data is available (based on
database of RE Projects	established	M&E framework) is available upon request.
	cotabilitiea	An inventory pilot was completed and is part of the 2012 Community Energy
		Evaluation.
		Project Data has been shared with CONREMA network.
CEDP 1.3 Establish and	No network in	Community Energy Malawi formally registered Dec 2014
support an effective	place.	Operational Membership application process as of Mar 2015 (10 active
community RE		members)
stakeholder network		6 newsletters published by Mar 2015
		Active CEM website and blog
		Community Energy Conference held in June 2014
		> 12 "Learning Journeys" involving peer learning for communities in Malawi
CEDP1.4 For stove	In target locations,	Sold
projects / solar lantern:	no stoves or	Stoves: 325
numbers that have been	lanterns were	Lanterns: 465
sold with usable	available.	Returned
guarantees of		Stoves: 37 (11% of sold)
replacement if fail within		Lanterns: 14 (3% of sold)
first year.		Replaced
		Stoves: 21 (57% of returned) Lanterns: 19 (90% of returned)
	CEDB2 Stratogic Eng	rgy Partner Projects - Provision of support from MREAP to enable scale up and
	-	s of MuREA; Mzuni; Concern Universal.
CEDP 2.1 Solar PV	No Solar PV	4 projects installed at 4 separate locations including 4 schools and 4 health
installations targeting	installations	centres.
health and education	operating at	5 CRED Systems revitalized
facilities in Chikwawa	selected locations	Sustainability challenges, interventions, and remaining issues documented at 5
District (WASHTED)	(Gumbwa,	CRED sites
	N'dakwera,	An estimated 5,282 people have access to renewable energy through project
	Chithumba, Dolo)	(3,140 Females, 2,388 Males)
	in Chikhwawa	
CEDP 2.2 A micro-hydro,	Bondo Micro-hydro	Scheme partially operating as of Nov 2014. Cannot confirm good O&M
micro-grid installation	scheme not	procedures in place.
powering 400homes,	operational	An estimated 3,409 people have access to renewable energy through the
business and community		project as of Dec 2014.
facilities in Mulanje		
(MuREA)	1	

	Deceline 2 milet	A disastar fully severisis and including a disastar star such as severe severe
CEDP 2.3 Biogas	Baseline 2 pilot schemes	4 digesters fully commissioned including a digester at an orphan care centre
installations targeting	schemes	8 digesters installed and undergoing initial feeding (exp. Fully commissioned by
sustainable cooking with		June 2015)
reduced dependence on		
charcoal and wood fuel		
for communities near		
dairy cattle farms (Mzuzu)		
CEDP 2.4 A combined	No baseline available.	5 schools with classroom systems, solar home systems, and community power
programme of regional	avallable.	centres (equivalent to charging stations) in Mtsimuke, Chawanda, Mchima,
efficient cookstove		Makanjila and Mgomwa.
manufacture and		>8 forest management plans established with legal mandate to look after local
distribution, forestry		resources
management and solar PV		15 stove production groups started, promotion in 100 villages in TA Kalembo,
for schools (Concern		STA Amidu, and STA Kachenga. 8,209 Stoves were distributed under the
Universal)		monitoring period (ending Jan 2014 for this sub-project)
		est. 43,836 people benefiting from access to improved cookstoves
		24 teaching staff benefiting through lighting in classrooms
		24 teaching staff benefitting through lighting at homes
		5,142 students benefitting from access to lighting at schools
		All activities in Balaka district.
		No data is available on fuel savings usage. Solar PV Sustainability report
		indicated relatively strong sustainability performance of Mtsumike (included in
		the survey works) compared with similar project. The model includes multiple
		income sources (mobile phone charging, 12V car battery charging, TV shows,
		night room rentals). Though these are good signs, long-term sustainability has
	CEDD2 Country di	not been fully ascertained.
CEDP 3.1 Number of CBO's	CEDP3 - Grant and Lo	
		46 projects have been grant funded and installed in Malawi by 12 Community
/ Projects in place through		Based Organisations (CBOs). Each CBO has a bank account, established an
MREAP support and with relevant software		energy committee and has set up social enterprises (i.e. mobile phone charging) to cover the ongoing costs of the systems. All projects were operational prior to
(cofinance / bank		the severe flooding event in January 2015 with 6 projects known to have been
accounts, businesses in		affected and requiring repair.
place)		anected and requiring repair.
CEDP 3.2 Beneficiary		Beneficiary data has been collected from all CEDP projects. Beneficiaries can be
numbers:		disaggregated as follows:
Schools/pupils/teachers Clinics / patients / medical		Students – 7,242 male and 7,260 female Teachers – 180 male and 42 female
staff / Households (solar		Teacher's households with lighting systems -266 (unspecified)
lanterns / cookstoves)		Employees (from revenue generating activities) 11 male, 1 female
Others (CBO staff) / Data		Customers receiving energy services – 487 male and 448 female
disaggregated as a		Households benefitting from cook stoves – 1650 persons
		Households benefitting from solar lanterns – 2474 persons
minimum by male / female		Mothers and babies benefitting from lighting when they give birth -378
TCITICIE		Totals:
		Unspecified: 4390
		Male: 7920
		Female: 8129
		Total: 20439
CEDP 3.3 Establish a local		CEM registered and operating From January 2015. However no core funding
organisation to support		beyond end March 2015
community developed RE		
projects		
Teacher retention and		All CEDP teachers surveyed and a selection of education institutions
satisfaction report		interviewed. Report completed Jan 2015.
Output/Outcome: WEPP	WEPP1_1. Effective v	vind power resources are deployed by capable stakeholders within government,
		ities and private sector to support the effective development of the renewable
		vide development benefits for rural communities.
L	chergy sector to prov	nae acveropment benefits for farar communities.

WEPP1 - Initial Wind		WEPP1, 2 & 3 completed, albeit later than originally planned due to delays in
Power Feasibility Study		customs clearance and transport in Malawi.
WEPP2 - Site selection and		Note: WEPP3 work-stream was reduced significantly due to adjustment of
measurement		scope/timescales associated with the delay of install of masts.
WEPP3 - Feasibility study		> No site specific detailed feasibility studies were completed (as agreed with SG)
and capacity development		> DoEA elected persons and Malawi Met Office participation in identification
		and validation of sites and provision of data for the initial feasibility study. In
		addition, National commission of Science and Technology participated in site
		visits for the Initial Feasibility Study
WEPP4 - Bankable energy		WEPP4 is expected after a full 12 months' data collected, with report to be
yield assessment		submitted June/July 2015.
Output/Outcome: RECBP	Renewable Energy Ca	pacity Building programme - Higher Education Institutions, trainers and
	entrepreneurs have t	he knowledge of renewable energy to support the effective development of the
		ctor to provide development benefits for rural communities.
RECPB1 – Training -	1 curriculum	> Courses offered at Mzuzu University and WASHTED
Additional / enhance	offered by Mzuzu	> 8 Handbooks developed by WASHTED
curriculum and courses	University	> 3 new courses held in two locations; Chikhwawa and Mulanje
with RET focus /	Oniversity	> 150 people trained in renewable energy: Appreciation of RE and Design /
Workforce training with		Install / Maintenance of RE tech in rural communities.
-		
scholarships		
RECPB2 – Research	(1) No MPhil	(1) MPhil programme established at University of Malawi Polytechnic. 13 MPhil
Programme – (1) Students	programme in	students on track to complete studies and programme by end of 2015.
on scholarship	place.	
programme.	(2) No baseline	(2) Reports and publications produced referencing MREAP:
(2) Evidence generation		> Community Energy Evaluation (2012)
and research publication		> Solar PV Sustainability Study (forthcoming)
supporting the RE sector		> MREAP Process Evaluation (2015)
in Malawi		> Remote monitoring of off-grid renewable energy Case studies in rural
		Malawi, Zambia, and Gambia (2012)
		> Eternal Light: Ingredients for Sustainable Off-Grid Energy Development
		(2014)
		> An integrated approach to energy for development: Case study of the Malawi
		Renewable Energy Acceleration Programme (2013)
		 > Effectiveness of Remote monitoring rollout in Chikhwawa (2015)
		 Policy support options for Community Energy in Malawi (2015)
		 Methodology for Needs Analysis for community energy projects (2015)
		> Teacher Retention Study (2015)
		> Solar PV system design for community energy projects in Malawi (2015)
RECPB3 –	learning from all	14 Grants Awarded:
Entrepreneurship - fund	grants with	> 1x proof of concept
to stimulate RE activities /	individual reports	> 1x Business Plan
Malawi awards?	and overall learning	> 12x Commercialization
	paper on	
		Case study for selected projects
	entrepreneurship	
	and RE	
	M-RET award	
RECPB4 – Remote	Designs for Remote	RECPB4 - Remote monitoring installed and functional at 4 locations in
Monitoring - Advanced	monitoring	Chikhwawa. Remote monitoring Report Produced
prototyping and small-		
scale deployment		
RECPB5 – Enhance Data	Pilot inventory	Solar PV Data provided to conrema network for inclusion in the database.
Management - Fully scope	through evaluation	
out the user	work. User	
requirements, possible	requirement report	
requirements, possible		
architectures		
architectures,	to be prepared.	
implementation options	Include possible	
implementation options and associated costs of	Include possible alternative linkages	
implementation options and associated costs of options for enhance	Include possible	
implementation options and associated costs of	Include possible alternative linkages	

RISKS IDENTIFIED IN THE ORIGINAL PROJECT APPLICATION AND ACTIONS TAKEN IN RESPONSE

Risk realised	Action taken
RECBP: Malawian academic institutions resource and staffing availability to develop and deliver new courses	Development of MPhil programme - Revision of timelines for the development of MPhil programme (later) so the academic procedure of establishing this programme could complete in order. Delivery of MPhil programme – Academics were identified from other
	University of Malawi colleges and Mzuzu University to fill the lack of the qualified supervisors needed for the programme.
WEPP: Delivery to Malawi and installation of wind measurement masts Medium – transit or customs delay or damage in transit a possibility	Reduced scope to two wind measurement masts; agreed no-cost extension for Bankable Yield reporting.
RECBP: Lack of suitable bids for entrepreneur fund	Provision of mentoring from Polytechnic staff to advise grant winners. Granted a higher than anticipated of relatively larger commercialisation (12x) grants rather than business plan awards (1x) /proof of concept grants (1x).
CEDP: Successful agreement for engagement with Opportunity international Bank	The provision of loans was removed – CEDP only offered grants which are less difficult to manage. A new organisation and required processes were developed from the ground up to handle grant funding process (with the oversight of CES) – called Community Energy Malawi.
RECBP: Administration of scholarship and entrepreneur funding	Strathclyde worked with WASHTED to develop REEF grant process, evaluation approach, as well as M&E approach. In retrospect, we would recommend further capacity building with the granting organisation itself to ensure adequate promotion of the programme, a more streamlined granting process, higher standards of acceptance, and more robust M&E.

Some examples of effective partnership working within MREAP

MREAP consisted of 10 partners: 4 in Scotland and 6 in Malawi (including CEM here as a unique organisation). Within the programme there were many useful cross-overs of knowledge and experience that were complementary to the programme outcomes.

- The relationship between CES and the Strategic Energy Partners (Mzuni, Washted, MuREA, and Concern Universal) was critical in building up the knowledge of CEM's development officers on renewable energy technologies and ensured the community engagement process was appropriate for Malawi and effective. SEP currently sit on the board of CEM in an advisory role.
- IOD PARC and the University of Strathclyde were key in the development of skills and tools needed to implement the M&E Framework. This was critical for producing evidence and learning from the programme.
- The focus of REEF and the MPhil programme developed WASHTED could be described 'community renewable energy', which is direct result of the MREAP motivation and interaction with MREAP partners including other SEPs. As a result, several research projects were focused on improving technologies used MREAP e.g. (Solar PV, micro-hydro, biogas) and the REEF projects had similar focus in many cases (e.g. Biogas, Solar PV)
- Strathclyde, IOD PARC, and WASHTED were partners in the joint publication of several academic papers (see logframe for list of publications)

Outside of the interaction between core MREAP partners, we interacted with the wider community effectively:

• The programme steering group meeting provided a forum for discussion and learning channelled to the wider sector. Throughout the years, the PSG meetings were attended by: Department of Energy

Affairs, Malawi Scotland Partnership, Scottish Government, Ministry of Economic Planning and Development, National Commission for Science and Technology, Renew'n'able Malawi, and the Malawi Energy Regulatory Authority.

- The partnership between Community Energy Malawi and the 12 communities based organisations themselves deserves special mention. The inclusive, bottom-up engagement approach taken by CEM with the communities has led to a strong sense of ownership and empowerment with these projects.
- Though limited in its scope, SgurrEnergy and the Malawian Department of Energy Affairs conducted capacity building for wind feasibility during the initial feasibility study.

MREAP SUSTAINABILITY

There are two aspects to sustainability for MREAP: Sustainability of the results of the programme, and the sustainability of the Community Energy Projects themselves.

Sustainability of CE Projects

Key factors demonstrating programme sustainability across the CEDP portfolio and approach are: strong quality control through MERA accredited contractors and inspectors; clear roles and responsibilities between CBO and EMC; strong emphasis from the start on building and sustaining community ownership; conducting business planning and starting small social enterprises (solar lantern sales and/or cookstove production) to generate income for O&M of main system; and crucially that all social enterprises are generating income at 6 months.

The analysis of system sustainability during the process evaluation found that 93% of the total number of CEDP systems reviewed are functional. Questions remain however over the readiness of the local markets for the systems but at the household level people are already benefiting from increased lighting and improved energy efficiency.

- The cookstove producer groups' sustainability will depend on increasing adoption rates and rolling out appropriate marketing.
- Currently there are problems because some of the community members are failing to pay off their outstanding balances for the lanterns. Adopting a commercial model for CBOs takes time for people to accept, many people thought the lanterns were a donation. It also appears that management of the solar lanterns (i.e. social enterprise) may be best done by a local entrepreneur in the community.
- Six CEDP systems have been identified as damaged as a result of the severe flooding in Malawi in January 2015 which raise questions as to the readiness of all projects to withstand extreme weather effects.
- However it is the vulnerability of CEM, with no core funding at present to take it past March 2015, which has the potential to undermine all the gains in capital (as per sustainable livelihoods model). If core funding is not found then the analysis of lifecycle costs suggests that 2 out of 3 projects could fail before 3 years, all factors remaining equal.

It is too early still to judge the sustainability of the CEDP projects given the evaluation was carried out with only 6 months of performance data and projects themselves can have lifetimes lasting over a decade, so it was recommended that a follow up evaluation is done in 2 or 3 years' time to validate the initial results. The results also need to be understood in context. The Solar PV sustainability study found that for lighting loads, only 42% of 188 rooms surveyed throughout Malawian public service institutions were meeting usage expectations. It bodes well for the sustainability of CEDP projects that they exhibit a strong sense of community ownership and are realizing financial performance which far exceed comparable community energy off-grid projects surveyed.

Sustainability of Results of the Programme

MREAP provided key "non-direct" results that will improve the enabling environment, many of which are long-lasting. A list of "Learning Products" created under MREAP is shown below with a short description. These documents provide useful knowledge to the community energy sector and have been shared widely.

- <u>Community Renewable Energy Toolkit</u> for Malawi Aimed to people and communities looking for more information on how to develop a community energy project in Malawi. The primary toolkit (a large written document) was aimed more at development workers, the secondary toolkit (small booklet and a series of images) captured key messages from the primary toolkit and was aimed at community members with lower literacy levels
- <u>Community Energy Data</u> collected on the Sustainability of the Solar PV System in rural schools and Health Centres as well as the CEDP Projects has been shared with the Cooperation Network for Renewable Energy in Malawi (CONREMA) database
- <u>MREAP Process Evaluation</u> provides a critical perspective to judge the CEDP process experience
- Solar PV and Teacher Satisfaction Study in rural Malawi
- Off Grid Solar PV Sustainability at Community Institutions in Malawi
- <u>MREAP Policy Options to Support Energy for Development</u>
- <u>Malawi Wind Energy Bankable Yield Report</u> (DUE 6/2015) This will form the basis for development of large scale wind in two locations in Malawi
- Improvements sustainability of off-grid community solar PV through remote monitoring
- Improved design for Solar PV installations in Malawi
- Entrepreneurship in Malawi through the REEF Programme
- Development of Malawi's first Renewable Energy MPhil programme
- <u>Methodology for Solar PV Needs Assessment</u>
- System Revitalization Report
- Evaluation of Off-grid Community Energy in Malawi (2012)
- <u>Case studies on Biogas, Solar PV, Micro-hydro</u>

In addition we have facilitated and contributed to networks which create and strengthen relationships between key stakeholders in Malawi including the Department of Energy Affairs, practitioners, Malawian communities, and educators. Our Programme Steering Group Meetings allowed MREAP partners to regularly engage with the Department of Energy Affairs to ensure results / learning was being transferred to our colleagues. The Community Energy Conference in 2014 brought Malawian communities together, for the first time ever in Malawi, to discuss real impacts and challenges of Community Energy Projects. This was also attended by Scottish representatives in community energy, Malawian academics, Malawian Government, UNDP, and NGOs working in community energy in Malawi. Finally, through the efforts of the Institutional Support strand, we facilitated a round table between Scottish Government and Malawian Government to establish a formal support mechanism. Though no secondee has been appointed as yet, we were critical in establishing the need for this relationship.

Further information may be obtained from MREAP webpages hosted by University of Strathclyde, or from the MREAP Programme Lead – Peter Dauenhauer (<u>peter.dauenhauer@strath.ac.uk</u>) 0141 444 7266.

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