



District Energy Officers: Mainstreaming Energy in Malawi's Local Governance Structures

Policy Brief

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1 Foreword

Access to energy is a major driver of socioeconomic development. While 90% of the world's population has access to this developmental enabler, Malawi has only 13.4% access¹. Development in rural Malawian communities is governed by District Development Plans (DDPs) and these should contain locally relevant strategies to bridge the clean energy access gap. District Energy Officers (DEOs) were formally included in Malawi's 2018 National Energy Policy as key enablers of improved energy access. Ideally, DEOs support the local planning processes that deliver DDPs and have clear roles and responsibilities in the implementation of local and national energy strategies². However, at present (November 2022), there are no national DEOs. The policy brief describes recent work to pilot and demonstrate the benefits of mainstreaming DEOs in the Dedza and Balaka districts. The learning on opportunities and challenges from this work should be considered carefully by national and district stakeholders as implementation plans are made for formal adoption of DEOs nationally.

2 Introduction

The Rural Energy Access through Social Enterprise and Decentralisation (EASE) Project is funded by the Scottish Government and runs from 2018 – 2023. The project is coordinated by the University of Strathclyde (UoS), partnering with Community Energy Malawi (CEM), United Purpose Malawi (UPM) and WASHTED. A core strand of the project is placing CEM staff as acting DEOs in Dedza and Balaka to undertake a range of capacity building and support activities. This briefing paper provides an overview of activities conducted during the EASE Project, a summary of impact, and recommendations for consideration by stakeholders in Malawi.



2.1 Decentralisation in Malawi

DEOs operate in the context of Malawi's decentralised system of governance, which has been formal policy since 1998. According to the decentralisation framework, local planning starts at village (rural) or neighbourhood (urban) level with the formulation of Village Action Plans (VAPs) or Neighbourhood Action Plans (NAPs). VAPs/NAPs are a set of key priority needs from the village/neighbourhood. The District Council then consolidates these into a local development plan (District Development Plans in district councils or Urban Development Plans in town, municipal or city councils). The local development plan therefore, sets the priorities of the entire district for a five-year period. Through the decentralisation process, the Government of Malawi has gradually devolved some of its functions to the councils. Notably, Ministries and Departments like Education, Agriculture, Forestry, Environment, Water and Public Works have full function District Offices that coordinate their respective ministry activities. Missing from this process has been Energy.

¹ IEA. (2020). *SDG7: Data and Projections*

² Zalengera, C., To, L. S., Sieff, R., Mohr, A., Eales, A., Cloke, J., Buckland, H., Brown, E., Blanchard, R., & Batchelor, S. (2020). Decentralization: the key to accelerating access to distributed energy services in sub-Saharan Africa? *Journal of Environmental Studies and Sciences*, 10(3), 270-289

In 2017, with the concept of District Energy Officers emerging from stakeholder discussions in Malawi, CEM collaborated with the UoS and other Malawian and UK academics to produce a recommendations paper³. CEM and UoS also collaborated on a series of short projects to blueprint the role. Through this work, the DEO role was defined as a district level facilitator for enhancing the relationships between communities, district council and central government; with significant overlap between fulfilling government objectives and fulfilling community objectives. DEOs were formally included in Malawi's 2018 National Energy Policy with a target to recruit 28 DEOs by 2023⁴.

2.2 District Energy Officers in the EASE Project

To support the DEO policy agenda, the EASE project resourced two CEM staff members to take an 'acting DEO' role in the districts of Balaka and Dedza for the duration of the project. As shown in Figure 1, the CEM DEOs are enacting a programme of capacity building and direct support that aims to demonstrate the potential of the DEO role and deliver tangible impact on energy access in the respective districts.

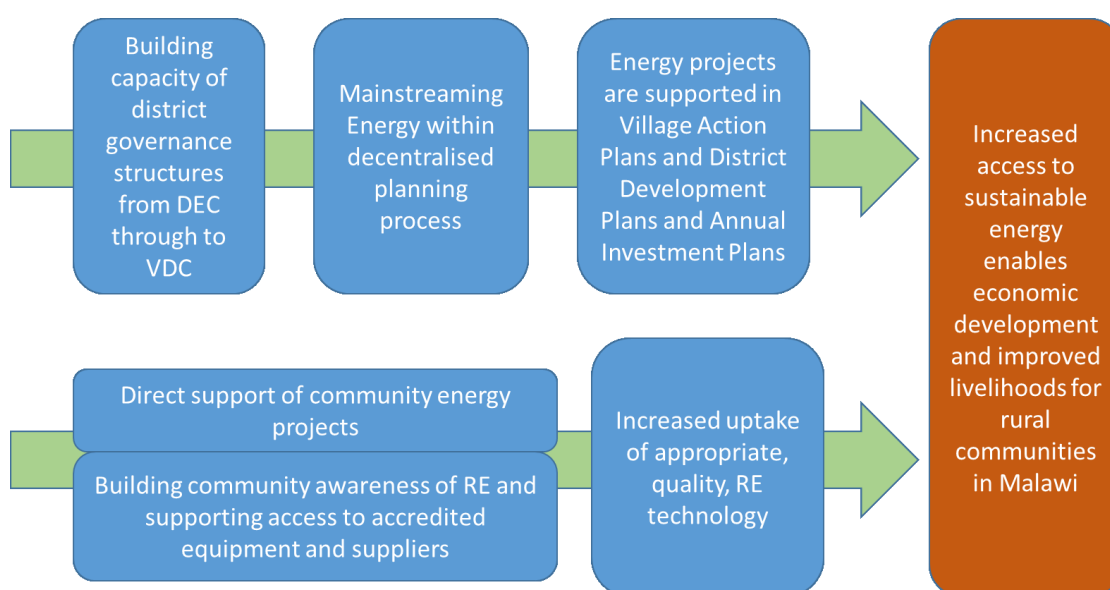


Figure 1: DEO Theory of Change

The key capacity building activities are:

- VDC Baselineing and DDP reviews
- Training of frontline extension workers
- Training of local technicians
- Energyscoping
- Collaboration with key district stakeholders
- Backstopping ADC meetings
- Renewable Energy awareness campaigns at a community level

These activities and key outcomes are summarised in the following sections of this paper.

³https://strathprints.strath.ac.uk/61016/20/Buckland_etal_2017_Malawi_district_energy_officer_blueprint_recommendations_paper.pdf

⁴

https://rise.esmap.org/data/files/library/malawi/Renewable%20Energy/Supporting%20Documentation/Malawi_National%20Energy%20Policy%202018.pdf

3 VDC Baseline and DDP Reviews

By surveying the majority of VDCs in Dedza and Balaka in 2019, the DEOs established a baseline of the energy access situation in the districts. Reviews of District Development Plans provided information on where energy was identified as a local development priority.

3.1 VDC Baseline

The survey respondents were VDC leaders, who provided key energy access information for their local area. Detailed analysis is to be provided in further EASE outputs, the headline information is summarised here.

Agreeing with national energy access statistics, the VDC baselining shows grid electricity access is very low, lighting is mostly provided by torches and lanterns, and energy for cooking is primarily from firewood.

In Balaka, 124 VDCs were surveyed. When asked if energy had been identified as a priority for the VDC, 44 indicated yes, 80 indicated no. Only 36% of VDCs indicated there was any household grid electricity access in their area (respondents estimating that to be around 9% of households across the district).

Electricity Sources present in VDCs - Balaka							
Grid Access		Solar Lanterns		SHS		Petrol genset	
Yes	No	Yes	No	Yes	No	Yes	No
36%	64%	91%	9%	60%	40%	33%	67%

In Dedza, 123 VDCs were surveyed. When asked if energy had been identified as a priority for the VDC, 27 indicated yes, 96 indicated no. Only 13% of VDCs indicated there was any household grid electricity access in their area (respondents estimating that to be around 2% of households across the district).

Electricity Sources present in VDCs - Dedza							
Grid Access		Solar Lanterns		SHS		Petrol genset	
Yes	No	Yes	No	Yes	No	Yes	No
13%	87%	83%	17%	61%	39%	42%	58%

3.2 DDP Reviews

At the commencement of EASE in 2018, Dedza had a DDP that was valid from 2013-2018. However, it was not until 2020 that a new DDP (covering the period 2017-2022) was officially published. In Balaka, the current DDP runs from 2017-2022.

The DEOs organized review workshops in each district to analyse the DDP documents and assess the level of energy mainstreaming. The workshops took a consultative meeting format that involved District Council secretariat representatives.

The review of the Balaka DDP found almost no evidence of energy specific development activities, only a mention of a loose target for grid connection to trading centres under MAREP. Exploration of a sample of VAPs found that energy issues had been raised at that stage of the planning process, but provided no progress to the DDP. Workshop participants indicated that the VAP and DDP process relied on consultants provided via external donor funding, rather than being led by local government.

The review of the 2013-2018 Dedza DDP found no evidence of energy specific development activities. In contrast, the 2017-2022 Dedza DDP contained numerous (55 in total) energy projects targeting development in agriculture, water access and energy access.

Although energy access had been highlighted as a development priority at VDC level, this was not reflected in the DDPs. The most recent DDP in Dedza was developed after DEO support became available and shows a step change in the mainstreaming of energy within the planning process.

4 Training of Frontline Extension Workers

Energy is a crosscutting issue connecting all sectors. Extension workers are the frontline officers that interface with community members at the grassroots, covering development priority areas such as agriculture, health, education, water, forestry, community development and more. They are an integral part of the VAP process, providing technical guidance in capturing issues affecting the



communities. Extension workers are not only integral to the VAP process, but are active in the communities throughout the year, supporting development activities across the various sectors. Trained extension workers have the opportunity to discuss renewable energy as they interact with the communities, explaining the benefits renewable energy can provide for key development areas, e.g. education, health, agriculture. They can then help communities take forward energy projects that support those wider development goals (with support from the DEO).

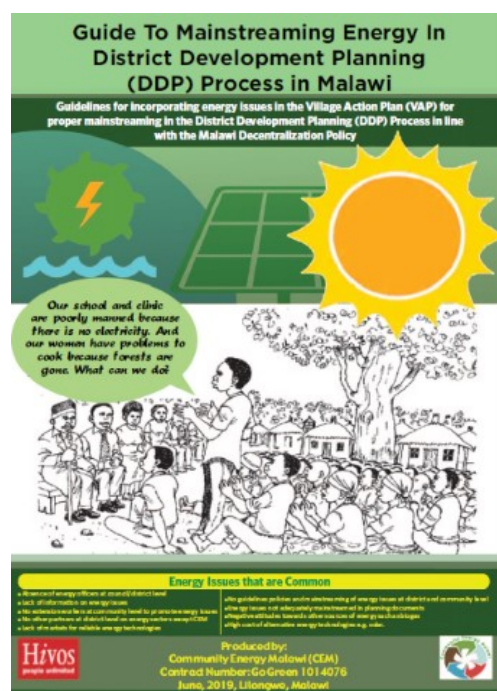
During the course of EASE, 170 frontline extension workers have benefited from an in-depth capacity-building programme relating to energy issues at a local level.

4.1 Customised Training

CEM developed training materials in collaboration with district council officials. Existing guidelines used by extension workers to capture issues at VDC and ADC level, were adapted to include energy and a training package developed around these revised guidelines. After training events, CEM distributed the printed guidelines, along with Renewable Energy and Productive Use of Energy (PUE) toolkits developed in prior projects. The capacity-building programme included refresher training and feedback sessions on successes and challenges.

4.2 Impact

Participants indicated that after training they managed to reach out to their communities through a wide variety of existing community structures. However, the restrictions arising from the COVID-19 pandemic created a significant barrier to engagement.



Surveys and feedback sessions were used to capture information on the level of energy focussed engagements the extension workers achieved with community groups and whether that engagement led to progression of energy projects.

Data gathered in August 2022 shows:

- **318 groups were directly engaged on Renewable Energy issues**
- **Of these, 182 lead to further discussions, planning or linking with agencies offering support**
- **132 community groups went on to adopt Renewable Energy in some form**

Extension workers described the most common next step they felt able to take was link communities with programmes in the district promoting Renewable Energy. Programmes supporting distribution of portable solar lighting, efficient cook stoves and solar irrigation were the most accessible (Figure 2)

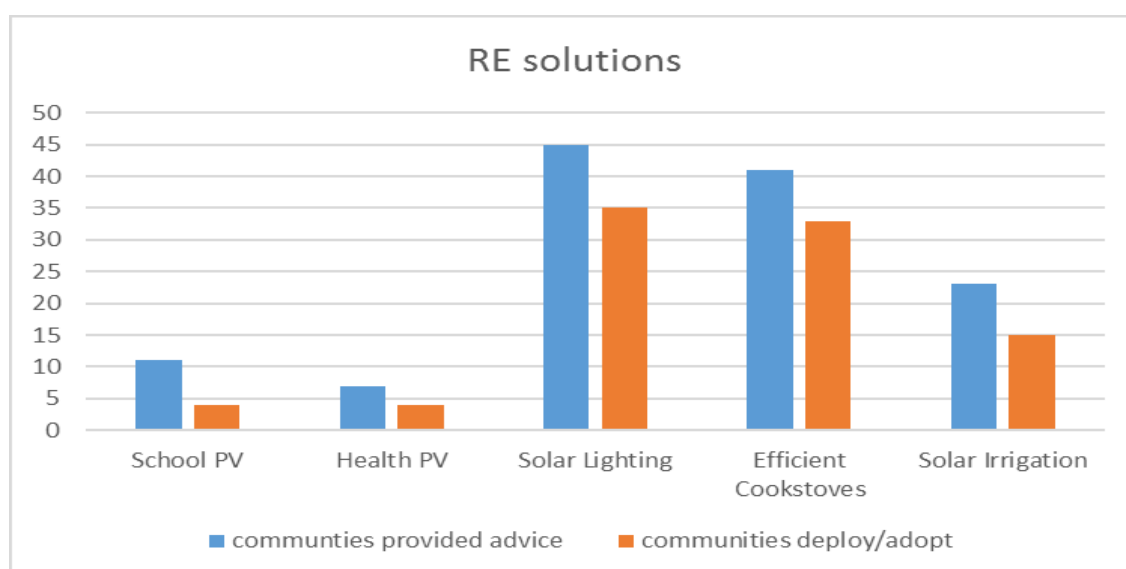


Figure 2: Levels of interaction and adoption across different RE solutions

The extension workers report a high conversion rate following on from linking communities with ongoing support of RE programmes. Some were able to estimate the numbers of portable solar lighting and efficient cook stoves that were bought/distributed as a result. Estimates are in the region of 9,000 PSP and 20,000 efficient cook stoves⁵.

4.3 Opportunities and Challenges

Feedback sessions allowed the extension workers to discuss their experiences. Opportunities and challenges identified are summarised in Table 1 below.

Table 1: Opportunities and Challenges for Trained Extension Workers

Opportunities	Challenges
Energy access is a priority issue - strong interest/demand from communities	Proliferation of poor quality products has created distrust of RE in some communities
Active NGO programmes on Pico Sola Products (PSP), cook stoves, and irrigation in the district provide rapid route to impact once communities have been made aware	RE products are viewed as very expensive, particularly as size of system increases.
After sensitization, more communities felt empowered to develop proposals on energy projects.	Knowledge and cost barriers, combined with lack of access to reliable suppliers, prevents progress for larger, more complex (e.g. school, health center) projects
Extension workers felt empowered to discuss energy in most recent VAP process	Limited knowledge base – desire for more training and support
Extending reach of singular District Energy Officer to many communities	Extension worker resources required for additional travel and community engagements
Incorporating energy as an underpinning service to extension worker's core focus area (Agriculture, Health, Education)	Integrating energy into reporting frameworks to track progress of energy projects



⁵ It should be noted that this is provided only as an indication of indirect impact as it is based on individual recollection/estimates and their perception of the impact achieved by their intervention/support.

5 Training of Local Technicians

Installation, operation, maintenance and sustainability of solar systems is a long-standing challenge facing communities, institutions and households in Balaka and Dedza. The problem is partly due to unavailability of skilled technicians within the communities and is compounded by unavailability of approved local RE suppliers. Installers are often sourced outside the district and are rarely monitored during the installation process.

The CEM DEOs trained 20 local technicians (10 from each district) to address this capacity back and provide local technical support under DEO oversight.

In addition to improving the local capacity to maintain already existing renewable energy equipment, the technicians help identify renewable energy infrastructure needing support through the process of Energyscaping (see Section 5). The technicians keep records of their interactions, allowing impact to be tracked over time. Interactions are grouped as indirect (advice/support given per category) and direct (systems installed or repaired per category).

Engaging at a community level, the technicians experienced high demand from individuals, self-financing small solar PV home system purchase or repair. Furthermore, household demand for quality lighting prompted some technicians to set up as agents for Portable Solar Products (working with accredited suppliers).

Despite the limitations to community engagement and interaction imposed by the COVID-19 restrictions, by August 2022 the local technicians had recorded over 2,000 engagements, repaired or installed 152 RE systems (Figure 3) and directly distributed 449 Portable Solar Products.

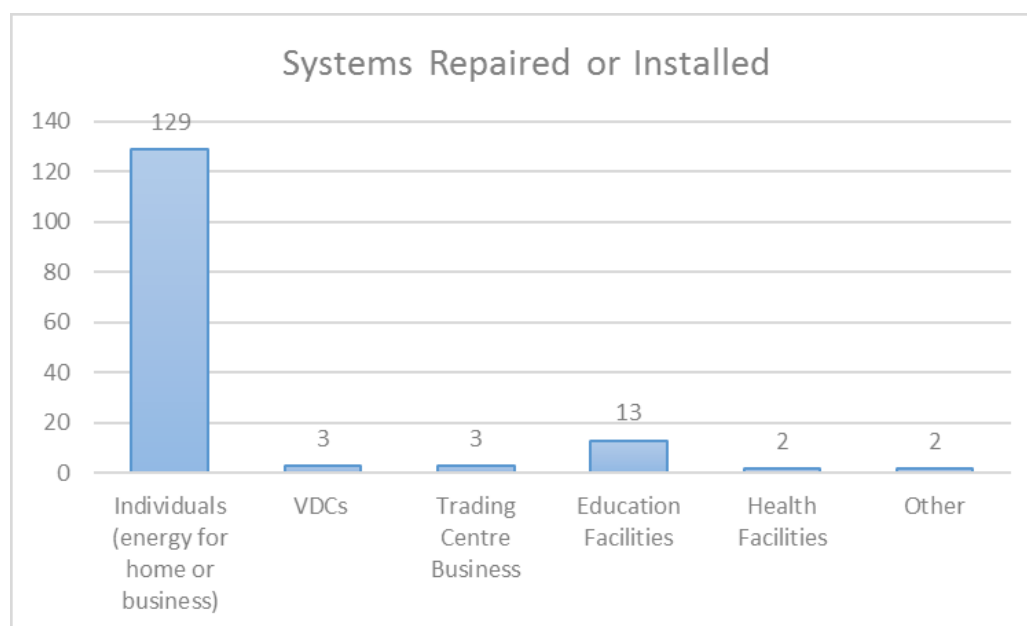


Figure 3: Numbers of Solar PV Systems installed or repaired

5.1 Opportunities and Challenges

Feedback sessions allowed the technicians to discuss their experiences. Opportunities and challenges identified are summarised in Table 2 below.

Table 2: Opportunities and Challenges for Local Technicians

Opportunities	Challenges
Energy access is a priority issue - strong interest/demand from communities	Quality RE products are often unaffordable for rural community members
Low levels of electrification of education and health institutions – high potential impact of RE installation	Lack of budget (or will to prioritize energy) from health and education budget managers
Installed capacity of many solar PV systems in need of minor maintenance and repairs at education and health institutions – high potential impact with low CAPEX requirement	Obtaining buy-in and collaboration from local education and health institution managers
Local knowledge allowing targeting of technical support to areas of need	Limits on technical knowledge and capacity of technicians – DEO oversight and support creates a constraint/bottleneck
Positive gender messaging by training equal numbers of female and male technicians	Truly empowering female technicians with the confidence to fully participate in historically male dominated role

In roundtable feedback discussions with district officials, the following recommendations were made:

- Clearer and stronger support from District Council of technicians role – particularly with education and health institutions – including issuing of circulars, registration with MPs and councilors, and formal letters of support
- The technicians should adopt a similar model to that used by the Public Works Department – technicians formulating Bills of Quantities (BoQs) for projects that the DEO brings to the council for deliberation
- Technician training should be progressed to an advanced level, including MERA accreditations.



6 Energyscaping

Coordinated by the DEOs and implemented by the local technicians, the aim of energyscaping is to accumulate relevant information on energy needs, priorities, and opportunities throughout the district. The energyscaping approach piloted through EASE focuses on education facilities, health facilities, trading centres, irrigation schemes and potable water sources. Locations of Energyscaping activities are shown in Figure 4. High level findings are summarised here with more details and analysis provided in other EASE outputs.

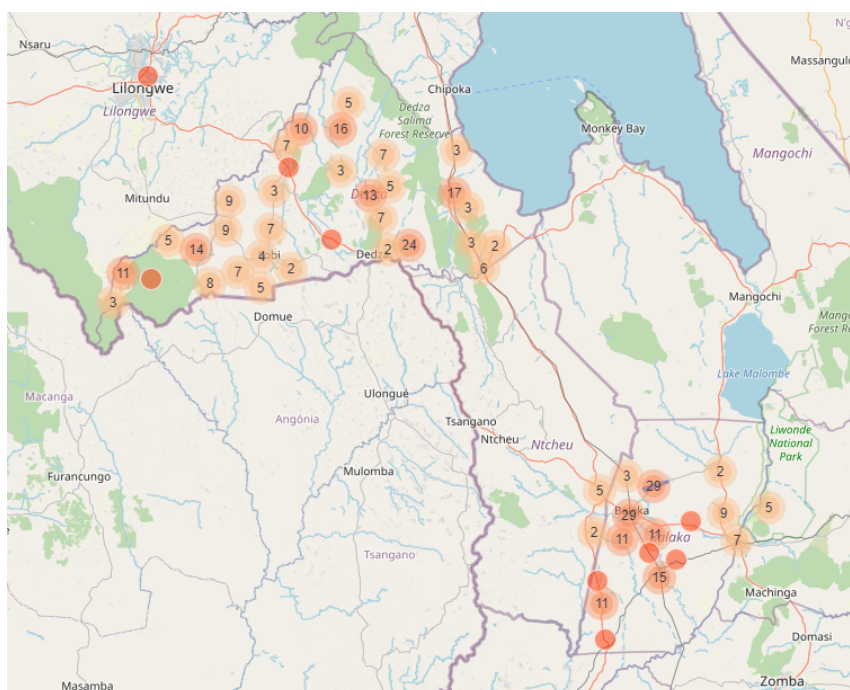


Figure 4 Location of energyscaping conducted in Blaka and Dedza

Of the 368 total surveys, 224 were conducted in Dedza and 141 were conducted in Balaka. A majority of the locations surveyed were schools (Figure 5).

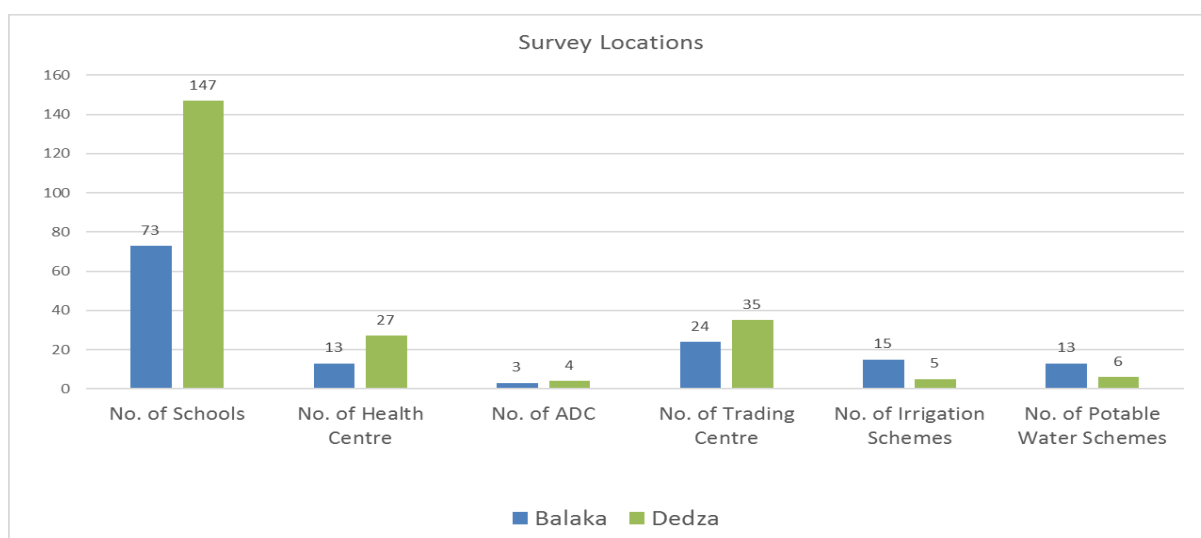


Figure 5: Summary of Energyscaping in Balaka and Dedza

There was no electricity source at 141 (43%) of the locations surveyed and only 91 (28%) had an ESCOM supply present. 116 (36%) had solar powered electricity sources present (Figure 6).

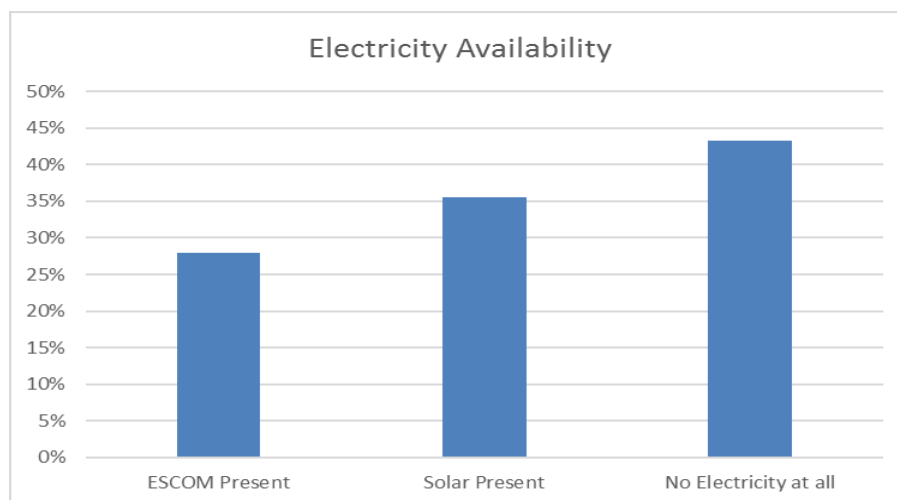


Figure 6: Summary of Electricity Availability for Surveyed Locations

Where electricity supply sources were present, satisfaction with the services was not high. Where ESCOM supply was present, only 35% indicated they were satisfied, with the dominant reason for dissatisfaction being poor reliability and high costs. Where solar electricity supply was present, only 24% indicated they were satisfied, largely due to issues around reliability and extent of service provided (Figure 7).

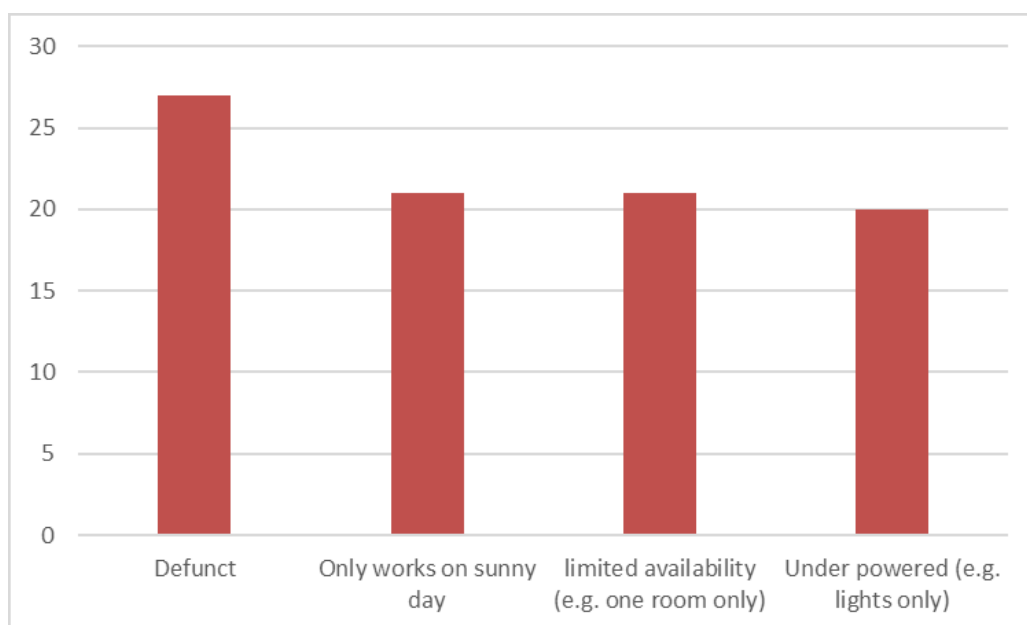


Figure 7: Reasons for Dissatisfaction with Solar Energy Systems

Electricity Access is low across all locations and even where ESCOM or solar are being used, satisfaction is low. ESCOM is described as highly unreliable and viewed as expensive. The majority of solar electricity systems deployed appear to be performing poorly, being undersized and poorly maintained.

7 Collaboration with Key District Stakeholders

Since inception, the EASE DEOs have been conducting tailored presentations that target District Council Directorates, NGOs and private sector players in Dedza and Balaka. The tailored presentations draw out the cross-cutting nature of energy to other development sectors. The presentations build on SDGs as over-arching development policy and demonstrate how Goal 7 on energy directly impacts the other goals. DEOs present case studies from Malawi and outside to illustrate how energy has helped to transform communities or inspire holistic development. During these meetings, DEOs also sensitise participants on Renewable Energy Technologies. By using the Renewable Energy Toolkit for Malawi and the Productive Use of Renewable Electricity Toolkits, DEOs also build participants' confidence, capability and skills in initiating renewable energy projects in their different sectors.

Round Table Discussions around these events drew out a set of commonly agreed recommendations.

- *DEOs should continue capacity building by offering learning journeys to communities with successful renewable energy projects (e.g. solar microgrids), and ensuring knowledge exchange on business models that can unlock off-grid potential*
- *DEOs should develop Standard BoQs on solar PV systems for education and health institutions – supporting engagement with NGOs and other potential funders*
- *Councils need support in engaging with national rural electrification initiatives (MAREP and mini-grid developers) in order that local priorities influence investment decisions. The DEO should lead on this.*
- *Councils recognize that highlighting local energy priorities in District Development Plans is vital for securing investment. DEOs must ensure that energyscaping and capacity building efforts result in energy issues are discussed through VAP process and into DDP development.*
- *Advocacy to MPs and Councilors who manage constituency and district development funds is a vital function of the DEO to unlock investment.*



8 Renewable Energy Standards Awareness

Substandard renewable energy equipment that fails to comply with recognised national or international standards results in frustrated end-users (often those who can least afford to waste money on faulty goods) and generally erodes public confidence in renewable energy. This has become an increasing problem in Malawi in recent years and information gaps have prevented the empowerment of communities to recognise and refuse substandard products.

The CEM DEOs organized 4 awareness campaigns (2 in each district), collaborating with MERA and MBS to bring information to the community level. Key messages included the requirement for all suppliers to be registered with MERA and provide minimum of 1 year guarantees. Locating in market areas to attract both end-users and vendors from the business community, the events used local musicians to attract and entertain a large audience. The events were covered by a number of media houses that then disseminated the key messages via radio, TV and online channels.

Key Learning

- **Renewable Energy standards booklets are technical, in English, and are not available for free, communities have no capacity to access – DEOs can help provide more accessible messaging.**
- **MERA and MBS operate at national level with little local representation – DEOs can effectively support sensitization at a local level.**
- **Consumer rights on demanding evidence of regulatory and standards compliance, along with minimum guarantees are not widely known – DEOs can effectively support local dissemination of this knowledge.**
- **MBS aim to reduce proliferation of substandard RE products through market spot checks and audits – DEOs can support and facilitate efforts to ensure standards compliance.**



9 Conclusions and Recommendations

The DEO strand of the EASE project has demonstrated a set of DEO activities that deliver enhanced access to sustainable energy at a district level. There are clear benefits to multiple development areas from the presence of DEOs operating in a district. The learning on opportunities and challenges from this work should be considered carefully by national and district stakeholders as implementation plans are made for formal adoption of DEOs nationally.

9.1 Mainstreaming energy in the local planning process

With a bespoke training package that updates local development planning guidelines, DEOs have the opportunity to ensure energy is properly considered in the planning process, from VAP through to DDP. Building the capacity of key stakeholders to understand where energy infrastructure and services are required to deliver on other development priorities (health, agriculture, etc) helps local planners feed priorities into national rural electrification planning. However, local planners must widen their focus beyond grid extension – including decentralized energy projects within investment plans, providing national government and other sustainable energy funders with ‘pipeline’. The effectiveness of this work depends on the resources provide to maximise the reach of the training and enable DEOs to backstop the VAP process through widespread community engagement.

9.2 Supporting communities to identify and develop energy projects

By building local technical capacity and providing ongoing oversight and support, DEOs can empower communities to deploy and maintain renewable energy systems in response to local priorities. When this addresses energy access for social institutions like schools and health facilities, the potential for social impact is maximized. However, these efforts need to be formally linked to existing asset management (maintenance) frameworks in the education and health sectors, following the guidance and suggestions provided by key district stakeholders. Access to funding for renewable energy on public institutions is key to unlocking the potential impact of the DEO work.

9.3 Information and awareness

With DEOs in place and network of trained associates in the field, there is the opportunity for widespread data gathering. Mapping activities like energyscaping highlight areas of need, support planning and prioritization, and enable progress tracking - providing a valuable resource for local and national planning and energy access monitoring.

Whilst MERA and MBS operate at a national level, DEOs can provide a mechanism to effectively disseminate information at a local level and help monitor standards compliance. Formal relationships, clear roles and responsibilities, and access to resources for community engagement are required to implement this effectively.

