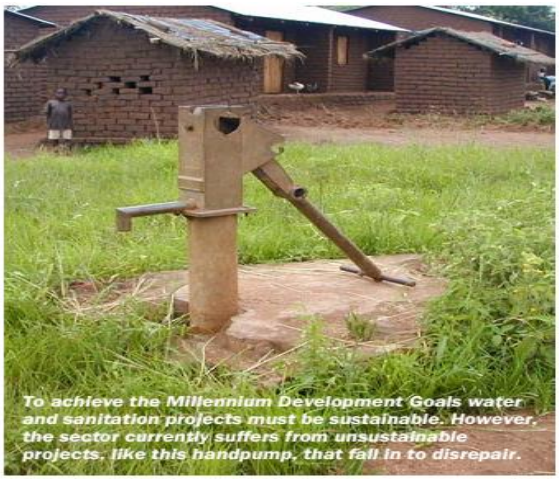
COMMUNITY ENERGY MALAWI IMPACTING COMMUNITIES THROUGH SOLAR WATER PUMPING TECHNOLOGY

Malawi is still facing challenges in ensuring access of clean water to communities that are not connected the national water board. Over the past years though, the access to clean and safe water has improved, this has been highly attributed to the increased number of players in water sector. Access to clean water has increased mainly through underground water pumping systems, and the Afridev pump has been dominant technology in underground water pumping.

Though the Afridev water pump has played a dominant role in helping people especially in the rural communities' access water, there has been a huge challenges with sustaining the technology. According to "*Indicators for the Water Sector for Malawi*" report of 2015 from Water Aid the sustainability of the Afridev has been a huge problem as communities are not affording to meet the maintenance costs for the system this eventually reads to the total failing of the system.



To achieve the Millennium Development Goals water and sanitation projects must be sustainable. However, the sector currently suffers from unsustainable projects, like this handpump, that fall in to disrepair.

Whilst the failure of the system has been attributed to poor sustainability measures by the communities but also the technology itself plays a part. The Afridev prone to mechanical failures due to a high number of movable. With most Afridev pumps feeding huge populations than they are design to, mechanical failures likely occur.

Beside the technology being prone to breakdowns, the technology also is labour intensive as it requires manual operation; on top of that the Afridev pumps are always susceptible to congestion as the pump always has one outlet (distribution point).

Solar water pumping technology on the other hand has emerged as an ideal alternative technology that can offset the Afridev pump challenges. Solar pumping technology uses solar modules (panels) to generate electricity to power a water pump. The pump feeds the water into tanks and then water is channelled to several distribution points.

The technology doesn't require manual operation and does not easily breakdown, The technology has also proved to be a worthwhile as it drastically reduces time one spends on a water point as there are many feeding points/outlets and it does not require manual operation. With solar pumping, water supply is constant during the dry and wet seasons.

Community Energy Malawi Solar Water pumping project in GVH Kuntiyani in Balaka District

Community Energy Malawi implemented a solar pumping project to override some of the sustainability challenges that are associated with the Afridev pump as well put in place a financial model to help in covering maintenance costs of the solar water pumping system

The solar water pumping system was installed and started operating in December 2014. The solar pump was installed where an Afridev pump use to exist..

A solar water pump installed in Kuntiyani, Balaka

Before the installation of the solar water pump there were a number of challenges that the communities were facing.

According baseline survey conducted by IOD-PARC in 2013 indicated that there was overcrowding at water points which caused people to spend more time on a water point s, there was also low supply of water during the dry season and the system regularly required maintenances,

The Afridev Pump has sustainability challenges

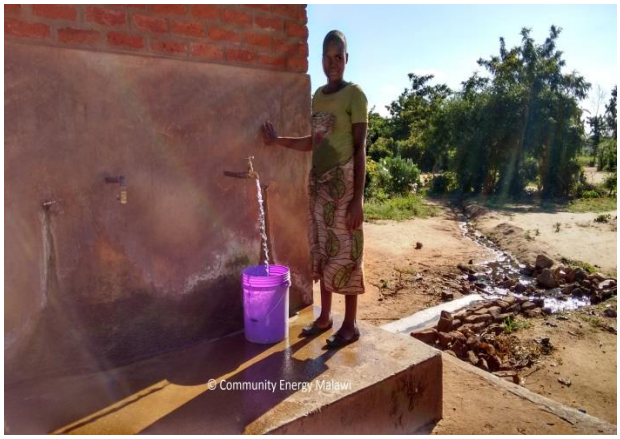
CEM conducted a survey between February and March 2016, it was found that the project has had tremendous impact. The number of beneficiary has drastically increased and there is constant supply of water throughout the year.

The project impacts have been summarised in the table below

Coverage category	Afridev pump beneficiary base before solar pump project	Solar water pump project beneficiary base
Area coverage	1 village	4 villages
Household coverage	130 households	417 households

The solar pumping project has not only increased the beneficiary base but has also improved service delivery as people spend less time at a water point there by allowing them to do other productive activities, and water supply is constant throughout the dry and wet seasons.

The system has not undergone any maintenance since its installation in 2014.



Solar water pumping has now brought a tremendous change in GVH Kuntiyani.

CEM has also put in place financial sustainability model where community members contribute MK50/household for small maintenances and MK 350/ household which is kept in the bank when large maintenances will be required in future.

As evidenced, the solar water pumping project has proved to be of wide impacts. Increased investment to replicate projects likes these will ensure impacts at a national level and CEM is committed in playing a key role as these sort of projects to help achieve nationwide development and the attainment of the SDGs