Zimbabwe solar thermal energy

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Among the key objectives of the Government of Zimbabwe is to develop a middle-income economy and achieve a 33% reduction of greenhouse gas emissions by 2030. A key strategy to deliver these ambitious developments is the draft renewable energy policy which targets 1,000 MW by 2025. All these presents great potential for the renewable energy sector in Zimbabwe.

National electricity access in Zimbabwe is estimated at 40% with rural areas at 19%. According to the 2012 census, 68% of the population live in the rural areas and the main source of energy is firewood. With an installed capacity of 2,342 MW comprising 55% thermal and 45% hydro energy, the country is unable to utilise its capacity due to limited access to water and fuel as well as ageing equipment.

Zimbabwe currently uses 1,471 MW and does not experience load shedding as power is imported from neighbouring Zambia, South Africa and Mozambique. Kariba Hydro Power Station and Hwange Coal Power Station (coal) are the main electricity generators with Independent Power Producers (IPP) contributing 12 MW. However, it must be noted that apart from the foreign currency used for imports, the country"s industrial base is no longer at the same level it used to be, given the economic downturn in recent years.

Licensed IPP projects have the capacity to generate a combined 131 MW with 74% coming from 3 bagasse projects, 24% from 8 mini hydro projects and 2% from one solar PV project with Biomass standing at 0.50 MW. While licensed IPP projects, yet to be operational have a capacity to generate 711 MW and are made up of 661 MW (17 solar projects) and 50 MW (9 mini hydro projects).

Under the light-handed regulation (below 100kW), 433 mini grids have a combined installed capacity of 733kWs. There are not many rooftop solar systems on the ground but planned projects are at hand.

The Government intends to embark on a medium to long term project to generate 2,400MW from Batoka Gorge Project which will be shared on a 50/50 basis with Zambia. Whilst the Rural Electrification Authority has been electrifying rural areas, the pace is constrained by inadequate resources, uneconomic and sparsely populated areas rendering the backbone roll out inviable in some cases. In the meantime the 19% rural electricity access presents a huge opportunity for distributed renewable solutions covering mini hydro, solar, wind, bagasse and biomass.

Zimbabwe has an average solar irradiation of 20MJ per square metre per day and 3,000 hours of sunshine per year. Coupled with more than 80% mobile penetration rate, high use of mobile payment platforms and a highly literate populace, a huge opportunity for solar products sales on PAYGO presents itself. The solar water heating program has a potential of saving 300 MW from retrofitting existing electric geysers.

The Eastern Highlands has a wet climate with perennial streams and rivers flowing throughout the year and

the inland irrigation dams have potential for small hydro power development. The licensed IPP projects which are not yet operational have the potential to generate 711 MW of renewable energy.

Zimbabwe"s economy is predominately agro-based and with the bulk of the population living off the land, solar irrigation is critical to mitigating climate change and reduction of greenhouse emissions.

Among the reasons why projects fail to take off in Zimbabwe include the absence of appropriate project developmental financing, lack of long term and appropriately priced loans/equity investments as well as low skills in producing bankable projects. The launch of the US $6.5m Renewable Energy and Adaptation and Climate Technologies program sub-Saharan Africa (REACT SSA) by AECF will improve the livelihoods of Zimbabwean communities through the private sector involvement to complement government efforts.

REACT SSA presents a catalytic funding platform for: o IPP"s that have obtained licenses and are still operational o Energy for cooking projects - this is an area that is often left out and the provision of appropriate funding could be the perfect solution o Access to lighting, phone charging, entertainment, refrigeration and energy for productive use o Access to other funders / sources of finance o Implementation of wind, bagasse and biomass projects

The technical assistance component of AECF funding provides capacity building for small to medium enterprises and sets a firm foundation for sustainable business growth.

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