

UGANDA TO VENTURE INTO FLOATING SOLAR

Recently, the Uganda Electricity Generation Company Ltd (UEGCL) signed a financing agreement with the Embassy of Sweden through SwedFund to undertake analytical studies for the development of floating solar in Uganda.

The agreement cements Uganda's entry into one of the most recent technologies of solar energy utilisation and will make Uganda one of the leading countries in the sub-Saharan region in as far as this technology is concerned.

Like the Kiira Motor Corporation is doing with automotive technology, UEGCL, too, is closely venturing into the floating solar technology space, on top of its traditional hydropower dominance.

One of the driving factors for this is anchored on not only UEGCL's mission to be a leader in the region, but also in its strategic mandate of promoting research and development.

UEGCL has over the last five years established its unique role in pursuing a path of applied research utilisation in all its key processes, with the aim to achieve efficiency and increased productivity. In as far as renewable energy is involved, all technologies are still evolving, presenting new systems with higher efficiencies that need to be adopted for both sustainability and reliability.

The floating solar technology for UEGCL will provide a hybrid of solar and hydropower since it will be installed at the hydropower reservoirs. This comes with plenty of benefits ranging



OPINION
DR MUZAFU
KAYONDO

from the cheap onboarding of solar energy onto the grid, to eliminating the need to purchase land or displace communities for solar power project development.

Floating solar technologies mean that the solar panels are installed on top of the water reservoirs and this potentially reduces evaporation, in addition to providing a cooling effect to the solar panels, thereby increasing their efficiency by about 15-20%.

The proximity of solar installations to the hydropower stations also means that the generated energy can easily be evacuated and at minimal cost. Moreover, it also means that solar power will improve the overall stability of the hybrid solar – hydro system, with solar compensating for when the hydrological conditions don't favour sufficient generation and hydropower coming in when the sun is



Dr. Eng. Harrison Mutikanga, the CEO UEGCL, receives Swedfund grant documents from Maria Håkansson, the Swedish ambassador to Uganda

not available.

Most importantly for UEGCL, this early entry into the market of floating solar means that it will be a regional leader and should, therefore, capitalise on this unique opportunity to build capacity and become a one-stop centre for floating solar technologies in the region.

Moreover, floating solar is not only installed at hydropower reservoirs, other candidate locations are lagoons and lakes.

Technically, floating solar technologies eliminate the need to acquire expensive land for project development. This minimises delays due to land compensation curtailments, and most importantly, reduces the project costs and, therefore, the resultant tariff. This is a

Hydropower accounts for about 80% of all electricity in Uganda.

win for both the project team and last energy consumer.

The Ugandan energy sector has been an evolving one since the early 2000s, with the creation of government agencies in the generation, transmission and distribution space, as well as the entry of private players on the electricity market. The last two decades have seen the country expand its renewable energy

base and creating dominance in hydropower. Currently, hydropower accounts for about 80% of all electricity in Uganda, the rest being co-generation, solar and thermal. About 65% of the hydropower is sourced from the Nile River.

This on its own should be a point of concern for key stakeholders, especially in as far as energy security is concerned. Metaphorically, it means that 65% of all our eggs are in one basket!

In an Energy Mix Diversification study by UEGCL early this year, it was recommended that the country needs to firm up close to 300MW of other renewables – geothermal, solar, or wind – by 2030. The report also suggests that in the near term, there is a need to build

capacity in those alternative renewables. This all confirms and aligns to what the National Development Plan III (NDP III) as well as Vision 2040 have set out to achieve by 2025 and 2040 respectively. UEGCL, as a government entity in charge of electricity generation, has embarked on the achievement of the NDP III targets with floating solar being one of its pursuits.

Under this project, UEGCL will be able build human capacity in not only solar, but also specifically hybrid floating solar systems – a unique one in the region. It is no doubt a step in the right direction.

It is, therefore, paramount that UEGCL continues investing in research and development to not only help in the efficient operation of its existing plants, but to also be able to scope for new technologies in the electricity space and add a local content to them.

In the meantime, we await to witness the new developments in the floating solar space. It is no doubt also that as UEGCL implements this project, it will play into the large global sustainability agenda of minimising the impact of climate change while availing a clean source of energy needed for the socio-economic transformation of Uganda and the region.

The writer is the head of research and business development, UEGC Ltd