Unlocking East Africa's Energy Potential

As the world turns to a new year, those in the energy industry look with renewed excitement at the plethora of opportunities for new projects and potential growth.

Perhaps no region offers as much promise as East Africa, with its abundance of natural resources. In addition to substantial crude oil reserves in Uganda, East Africa is endowed with significant potential for hydropower generation and thermal resource development. Unlocking the potential of these resources is critical to providing reliable electricity to some of the most energy-starved nations in the world, according to the World Bank's "Sustainable Energy for All" database.

These challenges and opportunities have been met with vigour by East African governments, as each has charted a course for ambitious development and growth. The majority of these nations have at the very least undertaken feasibility studies for tapping into various renewable energy sources, while many have already begun work on turning potential into usable power. However, massive gaps remain in areas of funding, knowledge, and equipment that are essential to helping these projects find success.

While individual governments each devise their own plans for developing energy sources, regional collaborations between governments, private companies, and international organisations offer the most promise for synthesising the vision, knowledge, and resources necessary for reaching ambitious goals. East Africa is rife with opportunity for public-private partnerships and regional agreements; three ongoing projects demonstrate the opportunities inherent in these undertakings.

Zambia-Tanzania-Kenya Transmission Line Project

East African nations like Kenya and Tanzania have experienced explosive economic growth over the last decade, deepening an already significant need for reliable energy to support development. In some cases, growing nations like Kenya and Uganda have had to turn to expensive emergency power sources to maintain progress, a short-term solution that is not sustainable and hampers growth. For Kenya and Tanzania, the demand for reliable energy is stark: according to World Bank statistics, only 36 % of the Kenyan population had access to electricity in 2014; in Tanzania, the number is only 15.5 %.

To address these pressing needs, the governments of Kenya, Tanzania and Zambia have agreed on the construction of a 2,200-kilometre transmission line connecting the power grid of Zambia to Kenya via Tanzania. The interconnector will be designed as a bi-directional 400 MW double circuit 400 kV power transmission line, reinforcing the national power grid of Tanzania and bolstering Kenyan fuel diversity.

Currently, the Transmission Line Project is waiting for the $1.1 billion financing necessary to begin the project. In addition to support from the three participating governments, funding is expected to come from a combination of concessionary, semi-commercial and commercial funding.

Eastern Africa Interconnector
In 2006, the governments of Kenya and Ethiopia signed a memorandum of understanding to develop an interconnection of the two nations' power systems. Combining the strengths of the two systems diversifies the fuel sources of both Kenya and Ethiopia; while the majority of Kenya's energy resources are found in geothermal and fuel-fired thermal plants, Ethiopia has the potential to develop a substantial store of hydropower resources. The benefits of this collaboration would extend beyond simply exchanging reliable energy, allowing Ethiopia and Kenya to exchange reserve capacity and coordinate outages for greater cost savings and operational efficiency.

Like the transmission line project linking Zambia to Kenya, the Eastern Africa Interconnector is hampered by lack of financing. The project is to be completed in two phases, with the first phase estimated to cost 660 million Euros, while the second phase will cost 400 million Euros. The project is currently supported by a European Union-Africa Infrastructure Trust Fund grant, but opportunities remain for outside funding to cover current funding shortfalls.

Uganda-Tanzania Crude Oil Pipeline
One of the most recent energy projects to come to life in East Africa is the heated oil pipeline connecting Uganda's crude oil reserves to Tanzania. Expected to be completed in three years, the project will allow Uganda to sell its crude oil resources on the global markets. With a budget of $3.55 billion, the completed project will be the world's longest electrically-heated crude oil pipeline in the world; the heated pipeline is necessary to preserve the liquidity of Uganda's highly viscous oil resources.

Representing the potential value of collaboration between governments and outside financing institutions, the rapidly-progressing crude oil pipeline is supported by Total SA, a French petroleum conglomerate. Project leaders continue to search for funding sources, and potential equity partners include the China National Offshore Oil Corporation and Tullow Oil.