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Since entering the African energy industry over 14 years ago, I have witnessed a vast transformation in both the continent's fossil fuel and alternative energy sectors and in parallel, significant growth in international investment.

Although Africa holds an abundance of both fossil fuels and renewable energy resources, the continent is sorely underpowered and access to clean, affordable energy is a luxury to most its over one billion population. Despite the continent possessing 6% of global oil reserves and being responsible for about 10% of global production, the majority of Africans do not reap the benefits of their resources. Many of these under-powered countries earn incredible sums of revenue from their hydrocarbon, agricultural and mining sectors but very little is in turn invested into power infrastructure.

The companies opening up Africa's oil and gas potential are predominantly small- to mid-size independent firms with limited capital. They secure the exploration licenses, conduct the geophysical work, and then market their findings to larger multi-national firms to secure funding and minimize their risk when it comes time to drill. This trend has been chiefly responsible for the major discoveries over the past two decades and the opening up of new frontier basins. In the past 10 years, significant oil and gas reserves have been added in countries such as Ghana, Kenya, Mozambique, Tanzania, Uganda, among others. Improve technology deployment has also played a large role in enabling these discoveries, with some of Africa's developments in the deep offshore rivaling that of those in the Gulf of Mexico.

While natural gas was not too long ago considered a nuisance byproduct in sub-Saharan Africa, the resource is increasingly utilized in large scale operations such as LNG, power generation and trans-border pipelines, and also in smaller scale applications such as LPG and CNG. With the known natural gas reserves across North Africa and new discoveries in sub-Sahara, the continent is a natural gas player to be reckoned with. In Mozambique and Tanzania alone, there is reasonable confidence that the two areas together hold a resource of at least 190 Tcf with expectations that proven reserves could more than double with further exploration.

And the shale boom is not exclusive to North America, Africa too has her share of unconventional resources. Shale oil, shale gas, and coal bed methane are all now receiving attention from both governments and the private sector and a number of projects are afoot.

As for alternative energy, there are literally hundreds of small-scale projects established and in the works, not to mention the dozens of larger scale projects on the drawing board; these translate into billions of dollars in investment. The sector is making progress with new, renewable-specific legislation emerging in many countries, facilitating development of the industry.

In addition to the major wind farm and solar projects online or under construction in Egypt, Ethiopia, Kenya, Morocco, and South Africa, the continent's hydropower resource is enormous with some estimates having it accounting for 12% of the world's potential. Ethiopia is looking to develop 6 GW of power with its Grand Renaissance Dam, the Chinese are already heavily invested in Africa's hydropower and are funding \$500 million toward Cote d'Ivoire's 275-MW Soubre Dam, and the Grand Inga scheme in the Democratic Republic of Congo will be the world's largest if plans are implemented as envisioned. Not to be left behind is geothermal. Kenya is set to construct new geothermal power plants by December 2015, and in fact, its strategy would make it the world's number one geothermal producer by 2033 if executed accordingly.

Having a near-term, tangible impact in improving the lives of Africans are the many small scale, off-grid rural projects. These projects are varied and include household solar products, community waste to energy, roof top solar and wind, and biofuel and biogas applications. Perhaps the greatest achievement over the decade has been seen in the manufacturing sector with solar factories emerging to meet growing regional solar demand. This trend has led to a technology transfer with Africans learning to provide services to their communities. Many of the projects have allowed typical low-income villagers to become small business owners and in turn pass on that technology to their communities. This development is certainly a success story for the continent by any measure.

In closing, the hydrocarbon and renewable initiatives set forth by African governments as well as by their partners from around the globe, are paying huge dividends. While much progress has been made, there is a long road ahead to bring Africans up to a first world standard of living, and American know-how and investment can play a major role in making that happen.