

Don't Fear the "S-Word": Why Energy Access in Africa Requires Subsidies (and How to Use Them Effectively)

The past five years has seen an explosion of private sector approaches to connecting the over 500m people in Africa who lack access to electric power. Most of these approaches cleverly capitalize on the reducing costs of down-scalable technologies like solar, and the ubiquity of mobile money payment platforms on the continent which greatly ease revenue collection. Leading solar home system companies like M-Kopa, Off-Grid Electric, and Mobisol have raised hundreds of millions of dollars over the past few years. Meanwhile an ascendant micro-grid sector has had some early fundraising successes with Powerhive, Husk, and PowerGen raising multi-million-dollar equity rounds in the past few years.

As the private sector gains momentum addressing the massive opportunity of energy access in Africa, it's important that companies and investors retain perspective on the policy environments necessary to enable a positive outcome for both companies *and* consumers.

Thus far, the private sector tendency has been to spurn public sector collaboration and claim that subsidy support is not needed to achieve their energy access mission in Africa. This approach neglects critical contemporary and historical case studies and is ultimately bad for the vulnerable rural consumers who they aim to serve.

Rural energy access has always required subsidies, in every country that has ever tackled it

Whether one looks at the United States in the 1930s, China in more recent decades, or any other country that has electrified its rural population over the past century, one finds a key commonality: all have used public sector funds to subsidize energy access for their rural populations.

No country in the world has achieved rural electrification without substantial concessional money. Utilizing wealth surpluses from urban areas to enable equality of energy access for less affluent rural areas is a well-recognized, progressive approach to expanding access. Conversely, advocating for an approach in Africa which ultimately puts the full burden of cost on the poorest, most vulnerable rural people would be both regressive and historically unique.

Some point to the reducing cost of solar and batteries, and improving appliance efficiency, to claim that "this time is different". However, quantitative analysis makes it quickly apparent that "subsistence energy" may be possible through autonomous, household-scale small systems (at a very high price per kilowatt-hour), but in order to power productive loads and grow rural economics (not to mention charge our future electric cars!) we will still need substantial investment in rural energy systems and grids. Autonomous solar home systems are excellent at solving lighting and low-level energy needs, but they will not provide the power needed for rural communities to develop, nor enable long-term energy equality between rural Africans and other global consumers.

Renewable energy in general still requires subsidies

There is little doubt that we still live in a world where concessional money is critical to enabling growth in the renewable energy sector. The United States solar industry depends on the Investment Tax Credit, which comes at a cost of billions of dollars per year for American taxpayers. Many European countries support the propagation of solar through subsidized feed-in tariffs, also ultimately at the taxpayers' expense. The implosion of the UK solar industry in 2016, once subsidies were removed, should serve as a cautionary tale to those who think that public sector support for renewable energy is unimportant.

Public support through subsidies is an excellent investment in the future energy system and should continue. Also, as many in the renewables sector rightly point out, fossil fuels benefit from layers of subsidies as well, so it's only fair that the renewable industry benefits from comparable support.

Despite this acceptance of the need for public sector support for renewables in developed countries, when investors come to Africa they come demanding “commercial projects” in energy access, forgetting that the “commercial projects” in their own countries are enabled by a system of un-commercial support from the public sector, and an electricity distribution system which has had a century to depreciate. For energy access and renewables to succeed in Africa, we must be wary of this double standard.

Fortunately, there is already subsidy capital available for energy access in Africa

But unfortunately, the subsidy capital currently available is creating a highly uneven playing field between the private and public sector. There are essentially two categories of subsidy for energy access in Africa:

- 1) For the *private sector*: donor grant programs for private projects from agencies (like DFID or GIZ) and foundations (like Rockefeller or Shell Foundation). These grants are typically small (typically significantly less than \$50m for a full country), and very onerous for companies and projects to actually utilize.
- 2) For the *public sector*: extremely low interest loans to governments from donor-lenders (like the World Bank or AfDB), which are passed to public utilities as pure grant or extremely low-cost debt. These concessional loans are typically large (>\$500m) and low-friction for the public utility to draw down on.

In short, the private sector has access to small amounts of concessional funding which is useful for piloting, but not suitable for scale, while the public sector has access to orders of magnitude more funding through structures which are much better suited for scale. If we hope to have a vibrant private sector in energy access in Africa, this asymmetry must be addressed.

The good news: there is a solution!

First, the donor grant programs meant to catalyze the private sector with \$1-50m programs through various countries need to improve their methods so that their funding is more usable. The intended amounts of funding being provided by these funders is simply not reaching projects on the ground. For example, in Tanzania and Kenya, tens of millions of dollars have been nominally available on paper for the past 3 years to support private companies developing micro-utilities, but only a tiny fraction of that amount has actually been disbursed to projects.

The fix for these programs is simple: learn from the successful subsidy programs used for solar in the United States and Europe. Provide simple results-based financing. If a company develops a project that connects customers to power, provide a fixed rebate per connection installed to relieve the capital cost burden of the project so it can attract commercial capital.

Once these funders structure their programs better so that the private sector can make full use of them, then the private sector will start to gain enough scale to catalyze the second change which is necessary for the private sector to have a place in energy access in Africa: private-public subsidy parity institutionalized at the country government level.

Through demonstrating capital efficiency, innovation, scale, and customer service, the private sector must demonstrate to large scale donor-lenders like the World Bank and the local governments they serve that subsidy parity between public and private sector is wise policy. When the World Bank makes a \$1b loan to a country, the country and the World Bank must see the potency of configuring that funding to support not just the national utility, but a diverse landscape of private developers and operators as well. Only when this country-level institutionalized support has been achieved will the private sector truly have a role to play in the long-term energy access story in Africa.

Sector shapers needed

Africa needs aspirational companies who want to solve the energy access challenge on the continent, and it needs hard-headed investors looking for returns in the power sector. But more importantly it needs players with the vision, conviction, and patience to shape the policy landscape in Africa to support sustained innovation and involvement from private companies in the energy sector. This evolution won't happen

overnight, and European and American investors need to come to the table ready to fight a sector-creation battle, just as they had to fight those battles at home to enable renewables in developed countries.

There will be no low hanging fruit for investors in the energy access sector in Africa. But there will be great rewards for those who are willing to commit to the process, take the long-term view, and create the right environment for growth.