Webinar: Utilities 2.0- Better Connections, Better Services – Lessons from Uganda and Nigeria

Questions and Answers:

1. **Do you think the role of REA needs more modification in their process or not? Please highlight according to the need of time.**
   There is room for improvement to provide a streamline and clear process of submission and a turn around time for responses as well as dealing with queries.

2. **Do you think that Role of UMEME should not be to design the Distribution which is carried out by REA?**
   REA, as a government entity is mandated to source for funding, identify and manage the process of extending distribution networks into offgrid areas. These new lines are then handed over to distributors, including Umeme. Umeme already supports REA in designing some of these projects. Designing and managing construction of these lines would require imply a change of the mandate of both Umeme and REA.

3. **How much this ECP affecting the Performance and How is the demand increase by ECP annually?**
   With the commissioning of ECP the number of applications almost doubled from 700 to 1200 per day. With the increasing number of connections, investment in the backbone will be required. According to Umeme's masterplan $70m will have to be invested in the distribution network for the next 5 years in order to achieve the targeted annual grid connections averaging 300,000 over the next 5 years. Failure to invest will lead to increased technical losses & poor supply reliability

4. **What is the secret for the utilities in Seychelles and Uganda that makes them recover their operational and capital costs. How can the other utilities ride on this experience to better themselves?**
   a. Uganda - Umeme's performance is as a result of the ability to raise capital to invest in the distribution network against which the company earns a return. Over $600m has been invested since 2005. The investments are targeted towards growth, improving supply reliability & creating efficiency which benefits all customers. The investments have to be approved by the Regulator. The dilemma is balancing between Access/ growth, supply reliability & affordability. The Regulator sets performance parameters for Operating Costs, collections & distribution losses. Failure to achieve the performance dilutes the ROI

   b. Seychelles is an exception as they can afford higher tariffs due to tourism which is their main industry and rely on a limited network and mostly diesel

5. **How are other markets treating the cost of R&D? Does it filter into end-user tariffs or R&D is funded differently?**
   R&D by innovators and entrepreneurs are generally funded through a mixture of Grant Funding or partnering with Universities to support a company with its R&D efforts. R&D is a cost that a company needs to incur but weighing in factors such as the strategic direction, technology advancement, competitors in the market and disruptors. R&D should be a strategic cost that the company sees as a necessary cost to incur with all factors considered.

6. **Hello all, thank you for this wonderful presentation. I appreciate this staged and integrated approach for using mini grids and DRE to increase electricity access, but how do you think about *when* to transition between stages: 'connected' vs 'unconnected'? Is the choice based on distance? cost? population density? load? time? Etc**?
   Its based on the capacity of the decentralized renewable energy generation asset and the customers demand. If demand exceeds the generation asset supply this will then trigger this decision.

7. **Does solar make economic sense in a country like Nigeria where diesel is quite cheap?**
   The short answer is yes, in many cases. While diesel is relatively cheap, small and medium sized diesel gensets are very difficult to run at optimal efficiency. We see diesel genset levelized cost of energy (LCOE) in Nigeria running between ~$0.30–0.90/kWh, while well-run mini-grids and urban solar+battery systems are consistently achieving LCOE at the lower end of that range, or below.

8. **With regard to the under-grid business model, how does this apply to peri-urban and informal settlements in Nigeria, typically places close to the grid and are unmetered?**
   This is a great question, and one we've wrestled with quite a bit. There is certainly potential to use the model in these types of communities, although the operational adjustments needed to be successful in informal settlements is less certain. For peri-urban communities, the primary challenge is finding load centres that are at the appropriate size and geographic scale (i.e., not too big and/or rangy)

9. **Good point on protection, what policies and regulations are creating that safety net for investors? How is that being addressed?**
   In Nigeria we have been ring-fenced from the DISCOs and the government is offering guarantees to Konexa and indirectly to its investors, in line with some of the terms already agreed as part of the privatisation

10. **Keep in mind government underwrites on-grid utility investments. Whether they would do the same for off-grid is unclear. Hence cost of capital may differ**.
    Indeed, this varies by country but is certainly a consideration. In countries with privatized utilities that are not profitable, however, this can work to the advantage of alternative approaches where third-party companies are able to access a lower cost of capital.

11. **How can the benefits the investors are reaping, especially in Uganda be translated to a lower tariff for electricity？**
    The customers benefit from managed tariffs, investments into the sector to provide reliable supply. These investments make it possible for sustainability of the electricity

Value chain, including generation projects. All this is not possible without the investors providing Capital, will needs to earn them some return.

The mini-grid projects and utilities we've worked with have all taken the approach of balancing reasonable project returns (enough to repay debt and investors) and reducing tariffs to customers—the industry is still young so this has yet to be a major topic of conversation, but we'd expect that if developers start to see higher than expected returns, those profits would be reinvested in the project and/or shared with customers to lower tariffs.

12. **Do the panellists think that integrated electrification planning or market-based models are the best way to achieve universal electricity access?**
    Planning alone is not sufficient - we have done a lot of legal, technical studies and financial structuring alongside planning for an improved operation. Ultimately given the scale of the challenge, private markets have a significant role to play, which cannot be ignored

13. **In rural communities, consumers complain about the high cost of electricity partly due to low income levels. However, a majority of those in employment are able to pay for their electricity. Would concentrating more on Large Power Users to increase employment opportunities benefit the low income/unemployed and in turn increase access to electricity since more people will now be able to afford the cost?**
    Agreed - electrification and industrialisation/job creation need to go hand in hand.

14. **In implementing these integrated approaches, how do utilities and/or developers encourage participatory approaches in building these business models with communities/local governments in addressing their needs?**
    The community plays an integral in the current Integrated Energy Approaches being tested in Uganda and Nigeria. In the Uganda U.2.0 pilot a customer and community centric approach has been taken. This sees the community being part of the project design stage, where solutions are focused on the community needs, as an example in the Uganda U.2.0 pilot, the community does not have clean drinking water and therefore as part of the community services identified clean drinking water will be provided , street lighting will be provided for security. Productive use assets such as appliance financing specifically looks at the community businesses and further supports these business with training while the containerized milling and drying solution engaged with the local farmers and identified a partnership model to enable the farmers livelihood to be enhanced. The focus of an integrated energy approach should be to identify both community needs and to stimulate the local economy with productive use of energy.

15. **Umeme - I would like to know how they went about listing on the Uganda Stock exchange was it through private placement or Intial Public Offering? Secondly I would like to know what her company is doing about integrating modern energy cooking services in their electrification especially to improve productive use in mini-grids**
    Listing on the stock exchange was by an IPO. Umeme is also open to support clean energy cooking initiatives.

16. **How is the issue of comparison of tariffs between main grid and mini grid being addressed in Uganda?**
    There is currently a tariff cap being imposed to all mini-grid developers for projects on the mainland and it is set at $0.30/kWh. This tariff cap is a way of the Uganda Electricity

Regulatory Authority further requiring mini-grid developers to innovate in their approaches and it further allows for innovation from the various donor and development organisations to intervene and create a supportive subsidy for mini-grids.

17. **Speaking about standalones and the plummeting price of systems, how can utilities especially in Nigeria with weak grid infrastructure encourage power pooling and stimulate local power pools?**
    All depends on what you want to use the power. The standalone systems are not appropriate for people that want to have the convenience of 24/7 power and even power appliances and air conditioners for example. Standalone systems can only provide basic energy services

18. **Do you see Nigeria experiencing some kind of energy system lock in with diesel generators?**
    Customers want access to modern, affordable and reliable power. If a solution is available, then customers will switch.

19. **The trust and transparency challenge in the case of Nigeria has prevented accurate billing and collection of bills?**
    Agree. I also think that many customers are being forced to buy meters that are not proven, and these should be paid for by the Utility. Konexa is paying for the meters.

20. **How can electric mobility help the grid reaching peri-urban communities? As I understand from Florence in peri-urban communities the consumption is around 17kWh per month. On the other side an electric bike can use around 150kWh per month.**
    Umeme - 17Kwh is the average monthly consumption for new rural areas where the grid is extended and where mini-grids are being built. This consumption improves after a period of access, with more appliances being added by the customer. Partnerships with electric bike companies would off course stimulate demand in these areas with consumption at charging stations. Umeme will support these initiatives.

    RMI is working with Shell Foundation and Factor[e] to pilot electric 2-wheelers alongside rural and peri-urban mini-grids in Nigeria and India, to determine what conditions are needed to for electric mobility in these situations to work. COVID has put a pause on the pilots, but we expect to release results later in the year.

21. **Kindly share details on the dynamics of the relationship between Konexa and Kaduna Electric in terms of geographical coverage? Has this approach led to new connections or mostly improvement in service quality? What is the level of reliability current achieved in the region?**

    The relationship with Kaduna electric is great - they have been great partners. This model leads to both improvement in service, customers switching off their diesel gensets and relying now 100% on Koenxa to be serviced, and lots of new customers that were previously not on the grid that now want to be served. a win-win for all

22. **From Facebook: In areas where these business models have been implemented, has this demonstrated ability to curb losses (technical and commercial)?**

Konexa will go live next year and yes we will have our absolute goal to reduce ATC&C losses - for that we are investing in the entire network - DT, sub-stations, injection stations, generation, metering and customer engagement

23. **Keep in mind government underwrites on-grid utility investments. Whether they would do the same for off-grid is unclear. Hence cost of capital may differ.**

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