

Webinar Q&A

Topic: Mini-Grids for Rural Electrification and Development: Enabling Effective Business Models through Well-Designed Policies

Question no.	Question	Answer(s)	Additional answers/comments	Additional answers/comments
1	What are the likely implications having separate tariffs for mini-grids and national grids in the same market?	Mini-grids usually have a lower cost to rural citizens than any alternatives available locally. If it is too costly to bring the main-grid to site, mini-grids may be the best option. Of course these rural citizens will complain about high tariffs. However, mini-grids are probably the best immediate option for them, even if the tariff is higher. In fact, mini-grids create electricity demand and therefore make it more viable to extend the main-grid to site. Therefore, mini-grids pull the main-grid to a certain site. This should be communicated clearly to the electr. customers.		
2	The cost of international developers in the mini-grid space in Africa impact the tariffs. Can we look at economic/financial impact if mini-grids are developed/implemented by locals?	Yes, this is also where I see the sector moving: Local companies which have low overhead cost reducing tariffs. However at the moment the experience and capital of the internationals is still required. Nigeria got well advanced local mini-grid developers.		
3	Is it possible to access the report developed by Nico under the GMG Help Desk of the AfDB?	The report will be published shortly (within the coming 2 months) under https://greenminigrid.se4all-africa.org/ which is the website of the GMG Help Desk		
4	When you talk about natural resources I guess you mean the local productive opportunities, yes?	I distinguish between Productive Use Opportunities that local villages based micro companies can use the the large business that could be harvested if all synergies are used. Let me give you an example: On the islands in Lake Victoria there are thousands of fishermen. If we succeed in delivering some two tons of fish per day to the capital which can be collected easily once the islands have been collected, the additional revenue provided to local communities will be in the range of several 100k EUR per year. This is money that is available for local development and consumption. I believe that this kind of channeling cashflow into rural communities may outperform any development cooperation program. Resources can be anything like good soils for agriculture, water for irrigation, fish, beef, chicken or even minerals.		
5	What are the criteria for being a member for AMDA?	Here are our membership criteria. If you are not a developer we are happy to build out partnership agreements to collaborate: http://africamda.org/index.php/governance/		
6	Can we say that in promoting sustainable community development mini grid is a success factor?	Yes, this is what I strongly believe in.	Agreed - without minigrid companies these communities really will not get access to electricity - so difficult to improve job opportunities, health care, education etc.	
7	Does AMDA have national bodies?	YES! Currently we have chapters in Kenya, Nigeria and Tanzania. We are growing quickly and hope to have chapters in Mali, Senegal, Zambia, Uganda, DRC, Rwanda, Zimbabwe and across Africa. If we do not have a local chapter in your country yet we are still very happy to come to discuss these issues with you.	You have in Nigeria.	
8	What are the mitigation measures for the Load Pattern Risk for Mini-grid development?	The main mitigation is Time Of Use tariffs incentivising electr. customers to use electricity e.g. during daytime instead of night time in solar mini-grids. From a policy side Time Of Use tariffs must be allowed. The second mitigation instrument is a tariff that is adjusted by an independent regulator to actual requirements.		
9	Could you explain more on minimum renewable fraction and do you think adding is environmental friendly to add up a diesel generator in off-grid system?	Rural electricity customers from my perspective should not pay a tariff that is higher than necessary. Renewable energy is generally cheaper than running diesel generators. However, if you generate electricity from renewable energy that you cannot deliver, the flexible diesel generator is the better option to cover some portion of the electricity demand. In many cases, renewable fractions (portion of energy delivered to customers coming from renewable sources) of between 40 and 60% lead to minimum tariffs. If the govt. requires the mini-grid operator to realize higher renewable fractions of e.g. 80%, the tariffs go up and the demand risk of the mini-grid operator increases considerably.		
10	I would like to know more about fish freezing project in Tanzania. What are the challenges?	We are focussing on Tilapia to not interfere with the traditional Nile Perch traders. Tilapia is the Tanzanian's middle classes' favourite fish. However, 80% of the fish consumed in Tanzania is imported from China. Tanzania has got a lot of potential in terms of fish farming. Our main challenge is to get a the permit for fish farming to scale our business and create more local jobs on the islands in Lake Victoria.		
11	Can you dive more into the difference between load management and demand management?	Load management is when the mini-grid operator switches loads on and off actively. This can e.g. be done with water pumps filling water storages. Demand management is giving price incentives to customers to shift their demand to certain times of the day voluntarily.		
12	I think one of the key issue with private sector led mini-grid is the fact that the risk that they put in the implementation of mini-grids is very high, however, most times the risks are over-rated.	Some years back there has been little experience running mini-grids as a business. Nowadays, management tools are available and policy is reducing risk through adequate environments and the overall risk decreases. Although there is still some way to go to reduce the risk on the private sector and public sector side, I believe that we are on the right track.		
13	Thanks Aaron for your perspective on the various policy and market instruments for MG. In your estimate, has any of these policy instruments (public-led or private-led) delivered the desired results in other markets outside Africa and what lessons can Africa take from these markets?	live answered	Yes indeed. In many countries these have been successful, including in the US, Vietnam, China, and to some extent in Peru. Each are different and would need a longer conversation to explain but I encourage you to get in touch to discuss if you would like. Aaron Leopold: aleopold@africamda.org	

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14	The question then is HOW CAN WE ENSURE THAT THE RISK GIVEN BY THE PRIVATE DEVELOPER IS REALISTIC AND NOT OVER-RATED?	The only way to really be sure that the private sector is not over-stating the risk is understanding the risk. This is why companies like mine are training govts. In assessing these risks, we also set up risk assessment tools, e.g. in terms of tariff calculation tools for regulators. As I mentioned before, we have to the GMG Policy Help Desk which provides free of charge short term support to policy makers. Feel free to get in touch!		
15	The concept of mini-grid value chain sound great for promotion of Partner Provider Model please what is your view?	Indeed you are right. We need to remember that a mini-grid is like a smartphone that initially has no apps! No Facebook, no WhatsApp, no Twitter. It is basically a tool that creates opportunities for other things (jobs public services like lighting, healthcare, education, communication). It is through partners - governments, NGOs, other companies, community citizens - who bring tools (similar to smartphone apps!) and opportunities that we will see the true value of the mini-grid be realized. No one would pay hundreds of dollars for a smartphone without apps, and the same goes for a minigrid - the value and the financial viability will only come with a focus on building demand / productive uses through other things!		
16	Thank you Muka for your presentation. With your business model where you also want to deal/sell appliances for the MG market, what role would the locals play in this market?	live answered	Thanks for your question. We engage the locals to identify the appliances of need in a particular area and where a certain appliance needs skills enhancement, we ensure that the Local operator (employed by PCZ) and a handful of community members are trained to further offer a service in terms of i.e maintenance that may be required.	
17	Thanks for touching base on PUE. Finding ourselves in this dilemma, the question therefore would be how do create demand on the MGs? Do we need a separate program that focuses on PUE and provides skills and other resources to stimulate it?	Thanks for your question. We have implemented two separate programs to drive productive energy use: 1) appliance finance programs 2) small business empowerment. 1) It is impossible to drive PEUs when people can't afford the basic appliances required to establish and operate robust small businesses. For example, shaving machines to start a kinyozi (barber) shop, TVs to open a TV hall, or deep fryers to make French fries. By providing our customers with appliances for a small up-front deposit, followed by monthly payments spread out over a year (or more) we lower the initial CAPEX these folks need to start their business, while allowing them to start collecting revenue which can be used to a. buy more power & b. pay the upcoming monthly installments. In addition, we gather invaluable data on these consumers, and make a small profit to boot. 2) Small business empowerment is a fantastic complement to the appliance finance program. It is not enough to provide appliance and walk away; we need to educate our customers so that they understand WHAT good business looks like. To understand operating costs vs. revenue; marketing; etc. The more our customers know about operating their own businesses, the more successful they will be and the more services (power, water etc.) they will purchase from us!	Just to add that IIED and Hivos are working with the Energy Change Lab and PowerCorner in Tanzania on prototyping solutions to PUE. Always helpful to share lessons learned and ideas learn more here: https://www.energychangelab.org/productive-uses-of-energy/ .	This is indeed one of the most important points you are asking about. We really do need something separate on productive uses in reality OR all minigrid companies need to also become minie Rural Development Agencies. This could also be a possibility but realistically, it would jsut be adding more complexity to their already complex task. We truly need an energy market building approach - which I have done quite a lot of work on personally, and I would be happy to share more with you about this if you are interested: aleopold@africamda.org
18	Is this 1st slide picture shown by Caroline real? That is a bad installation if it is real, I think	Those are not installed. They are being cleaned before installation I believe		
19	Is the X axis kWh?	Yes.		
20	Is it possible to access the report developed by Nico under the GMG Help Desk of the AfDB?	The report will be published within the coming weeks. It will be available under the GMG Help Desk website.		
21	What are the challenges? Do you transport fish to Dar es salaam via special vehicle or public transport system	We use private lorries that only transport frozen fish to DAR. There are lorry companies that specialized on that. Using public transport for fish is prohibited. Major challenge: We are trying to expand to fish farming around the islands. The permit for that is ready to be signed but is not being signed for reasons that are unknown to us.		
22	Can we say that in promoting sustainable community development, mini grid is a success factor?	http://www.minigridpolicytoolkit.eu/eui-pdf.org/policy-toolkit.html . This is the Minigrid Policy Toolkit - excellent resource		
23	How are the criteria for being a member for AMDA?	AMDA membership criteria can be found here: http://africamda.org/index.php/governance/		
24	Load Pattern Risk was well explained but I did not get clearly how to mitigate it. Nico hope you can explain that bit again.	Load Pattern Risk is best mitigated by Time of Use tariffs. This however requires some additional measures to make TOU tariff acceptable for the local community.		
25	Would it be possible to get the contact details from Nico Peterschmidt from Inensus ?	Nico Peterschmidt <np@inensus.com>. This is mine: Aaron Leopold <aleopold@africamda.org>		
26	Within a tariff there is (or should be) some element that allows for the future replacement of worn-out mini-grid components which each have different life times. What controls are there to prevent those who provide mini-grid power from walking away when parts need replacement when, essentially, users have pre-paid for future power.	Regarding repalcement costs in tariffs. Modern Cost of Service tariff calculations models as used in Nigeria or Sierra Leone, are taking this into consideration automatically based on the depreciation according to lifetime of assets. Also other countries like Tanzania are using methodologies to take the replacement cost into consideration.		

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27	Secondly, it can be very difficult to exercise one's warranty rights when replacing failed components. Manufacturers are likely to be in another continent and distributors may not be around locally any more. How do you overcome this real problem.	On warranty issues: Larger international companies have a significant advantage here. These companies usually have stronger relationships with vendors and push for free replacements in warranty cases.		
28	I think direct partnerships with solar companies in Nigeria especially will accelerate minigrid developments. Also I liked the presentation by AMDA. We would like to inquire on how to become a member of the association.	Please get in touch with me about NSAPA. aleopold@africamda.org		
29	Pls also forward any opportunities about different kinds investments such as grants, competitions, loans, jobs, partnerships, debt, equity etc to us when you come across them. We need investment in order to scale.	ALSO here is a valuable donor and investment funding database for energy in Africa: https://www.africa-eu-renewables.org/funding-database/#content	Regarding access to finance for mini-grid operators: Please go to the GMG Help Desk Website https://greenminigrid.se4all-africa.org/ and register under Ask For Help. We will help you prepare your documentation to succeed in grant, equity and debt finance acquisition and will also point you to opportunities if you specifically ask us for that.	