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SUSTAINABLE AND SCALABLE MINIGRID BUSINESS MODELS

23RD, 24TH, AND 25TH JANUARY, 2023 ● 15:00 - 18:00 CAT

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INTERNATIONAL CONFERENCE ON SUSTAINABLE AND SCALABLE MINIGRIDS BUSINESS MODELS

January 23, 24 & 25, 2023

What does it take to have a sustainable & scalable minigrid business model?

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Framing the problem

The “problem” that we shall address

- The debate is about **regulatory & business models that enable the sustainable deployment of all the minigrids that are needed** to achieve the complete electrification of a country
  - according to an objective – e.g., by 2030 as required by the SDG7.1
  - and a techno-economic plan
- It is **not** about facilitating the installation & operation of **some minigrids** *(always a good thing to do) as independent projects* without a plan or comprehensive strategy meant to achieve full electrification in a sustainable way

Sustainability

What is a **sustainable** minigrid business model?

- The business model of a minigrid is sustainable if minigrids functioning under this model, without any major changes in the model, can **remain operational supplying a given community for an indefinite time.**
- A minigrid business model must be sustainable
  - from the **minigrid developer**'s perspective, including those financing the project
  - and from the **government**'s perspective

Scalability

What is a **scalable** minigrid business model?

- The business model of a minigrid is scalable if it can **attract the investment that is needed to install & operate all the minigrids that must be deployed** in a territory by a given date, according to an electrification plan.

Sustainability & scalability are essential…

- **Lots of minigrids** (200,000?) **are needed in Africa** to achieve universal access to electricity
- Universal access to electricity can only be achieved **if all modes of electrification – including minigrids – are sustainable**. Coming back to square one after a few years of access is not acceptable.
- Universal access to electricity in a territory where the electrification plan requires many minigrids to be deployed, can only be achieved **if the adopted business model(s) is scalable**
- **Sustainability is a precondition for scalability** at the levels of investment that are needed to achieve universal electricity access in Africa.

Issues with the present business models

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Recommended webinar to understand the actual difficulties encountered by minigrid developers, development financial institutions, philanthropic donors, and regulatory authorities in designing and implementing sustainable and scalable minigrid business models.
This conference will try to propose approaches to deal with this problem.

https://erranet.org/electrification-challenges-in-sub-saharan-africa-2-webinar-series/

Issues with the present business models - 1

- **The “minigrid problem” is contemplated by itself, in a silo**, separately from the standalone solutions (SAS) & grid extension (GE)
  - Design, deployment, operation, costs, financing, tariffs, customer relations.
  - Perhaps there is a prior integrated electrification plan including all electrification modes
  - Some interaction as well “when the grid arrives”, or “under-the-grid minigrids”
- **Lack of legal security** for the minigrid business
  - Only a few countries have developed minigrid regulation (cost-reflective tariff designs, regulated options if the main grid arrives) but no guarantee that an efficiently incurred cost of service will be covered.

Issues with the present business models - 2

- Most existing minigrids have been **built with "concessional money"**
  - Grants, some concessional loans, a little equity from "impact investors"

  &/or taking advantage of anchor loads & internal cross-subsidization.
- Funding is mostly implemented as **initial capital subsidies**
  - As a result, the business models have a high risk of not being sustainable *(needed additional funding – CAPEX & OPEX – is not available later)*

Issues with the present business models - 3

- The **3-way dilemma** for minigrid developers
  - Regulators & politicians want **low tariffs**
  - Donors want **small grants** to have money left for other projects
  - Commercial investors want a **high RoR**, resulting in higher tariffs

  Consequences:

  - The poorest people pay the **highest tariffs**
  - Given the high uncertainty in the business model itself (plus country risk, in demand, local currency, political & regulatory, & arrival of the main grid) no wonder it is so **difficult to attract private investment**
  - Scarce funding results in **small or medium size projects**, which are less attractive to investors & increase more cost of capital in a vicious cycle => **limited ambition**, well below SDG7.1

A “bold” approach

Why not consider the best practices that have worked elsewhere?

What has worked in distribution elsewhere? - 1

- **Cost-of-service remuneration** with an attractive reasonable RoR that is commensurate with the risk is critical to bring private (& public) capital
  - A solid (standard?) **concession contract** can reduce the financial risk considerably & can provide a long-term perspective
- **Expand the concept of distribution** to consider the three electrification modes
  - **Extend the principle of same tariff** (cross-subsidization) for grid connected customers in urban & rural areas **to customers connected to minigrids**

What has worked in distribution elsewhere? - 2

- **Financing utilities must be contemplated from a long-term perspective** to smooth out the impact on tariffs of substantial discrete investments
  - This is particularly **critical in an accelerated electrification process**
  - From this perspective, **the initial large subsidies created by the uniform tariff proposal can be more easily digested** *(e.g., Uganda report made available)* in a long-term financial plan.

A plausible implementation scheme

- **Cost-of-service remuneration** of minigrids, established in a solid **concession contract**, based on regulated tariffs *(same as for customers connected to the main grid)* plus a **subsidy**.
- From the **viewpoint of the government**, financing electrification should be contemplated in an **integrated way**, jointly considering the contributions of DFI, donors & private investors, as well as the income from tariffs (including cross-subsidization schemes)
  - An integrated techno-economic electrification plan (GE, MG, SAS) with a full electrification objective for a realistic date, so that financial viability is possible
  - This integrated view & the long-term perspective can greatly facilitate the overall viability of the financial plan *(as shown in the Uganda report made available)*

Pragmatic considerations *(the best is the enemy of the good)*

- Choose one favourable country & **prove the concept at country level**
  - This can take long, as it may require regulatory changes
- If funding is available, **continue deploying minigrids trying to get as close as possible to sustainable models**
  - Use the concession model whenever possible, with guaranteed subsidy
  - Keep negotiating with regulator & government the transition of existing minigrids to a sustainable model
- Sustainability is needed for **scalability**, as it can **attract private investment**
  - The increment in scale of the present minigrid companies needs support.
- Scalability can benefit from other measures
  - Adequate technology, demand estimation, optimized design, efficient O&M & EPC, economies of scale
  - **Improve affordability** by electricity enabled economic activities

The program

DAY 1

- What do the experiences tell us?
  - Donor-supported & market like minigrid business models
  - Concession-like minigrid business models

DAY 2

- Regulation for inclusive & sustainable minigrids
- Achieving scalability
- How to make it happen

DAY 3

- Outstanding regulatory, business models & financial issues
- An action plan