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CONFERENCE SERIES

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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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AFRICAN
SCHOOL OF
REGULATION



Global Energy Alliance
for People and Planet



IRENA
International Renewable Energy Agency



Sustainable Energy
Fund for Africa

INTERNATIONAL CONFERENCE ON SUSTAINABLE AND SCALABLE MINIGRIDS BUSINESS MODELS

January 23, 24 & 25, 2023

Lessons learned

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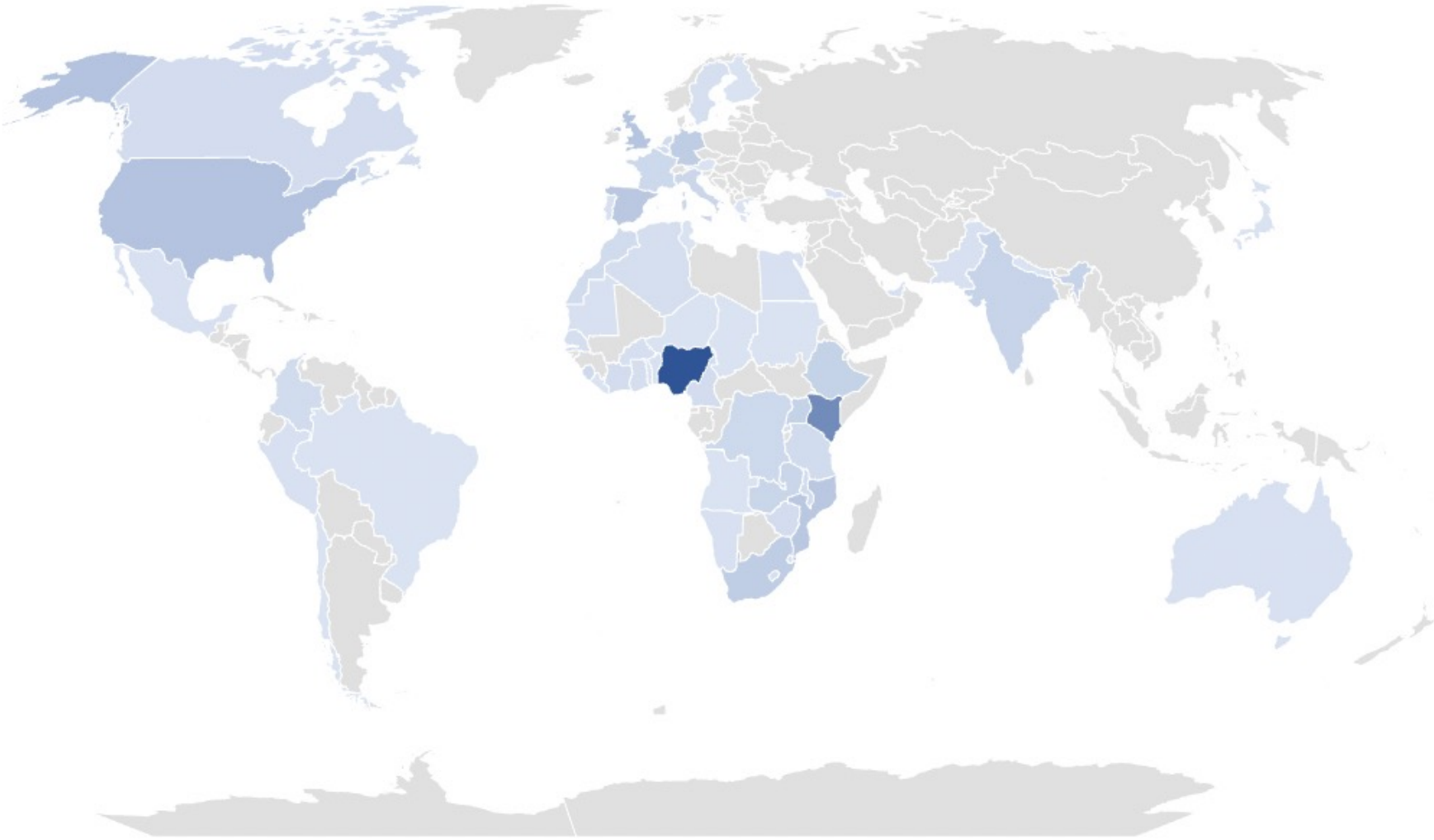
We have learned that...
... minigrid business models attract interest

476 people from 61 countries have registered for the Conference
37 moderators and panelists among the best experts in the field



Breakdown by countries

Participants



Wrap up outline

- **Implementation obstacles**
 - Recommendations
- **Strategic challenges**
 - Recommendations
- **A proposed vision**

First, implementation obstacles

Implementation obstacles & recommendations - 1

- **Regulation is of the essence**
 - **Transaction costs** are significant fraction of costs in small projects
 - **Slow & complex regulatory processes** must be fixed =>
 - Simplify, digitise, harmonise, standardise (AFUR "revenue requirement" tool)
 - Alternative procedures, like "regulation by contract" (IFC templates for concessions)
 - But leave room for **innovation**
 - Critical importance of **regulatory certainty** (*"eternity" was mentioned!*) =>
 - **Build capacity** of regulators
 - **Integral planning** reduces uncertainty for minigrid developers & facilitates acceptance
 - Minigrid regulation must cope with a wide **diversity of situations** (isolated or under-the-grid minigrids; sub-franchises; grid arrives; minigrid arrives, etc.)
 - Current regulations ignore the elephant in the room: **how to finance the viability gap** (e.g. get concessional funds to private developers; cross-subsidisation schemes)

Implementation obstacles & recommendations - 2

- Estimate the value of the **regulated efficient cost-of-service** (the “tariff”?)
 - Clarify difference between “**regulated revenue**” & “**end customer tariffs**”
 - **Harmonized** procedure (AFUR’s tool)
 - Use **competition** (tenders) but do it swiftly, please
 - GEAPP, IFC, AfDB & others try to find approaches to **de-risk investments**, thus reducing capital costs, but it will be difficult to reach the necessary scale
 - Strong initial investment cost **is slowly paid back with regulated end consumer tariffs** over life of physical assets
- Difficult position of developers as the **middlemen** between investors & regulators or governments, which have different priorities & timelines

Implementation obstacles & recommendations - 3

- Solar-based (& hybrid) minigrids **compete with existing diesel gensets** mostly used by **C&I customers**
 - **Diesel subsidies** must disappear to level the playing field
 - **Carbon credit** support is not considered relevant presently
 - Regulatory innovation: **Sub-franchises** are exploiting synergies between minigrids & underperforming main grid (e.g. Premium Grids, Wuse Market, Konexa)
- Take advantage of the existing **advanced technologies**.
- **Technical standards** are important, for instance regarding grid connection.

Second, strategic challenges

Strategic challenges & recommendations - 1

- “Bankability is tough” & regulators & governments are too slow, then...
- **“Regulation by contracts”** => concessions for minigrids...
 - ... **are essential** (*several speakers said*) to make significant progress to achieve universal electricity access, while waiting for governments & regulators to act swiftly, if ever,
 - they are just **bilateral agreements** & save time by avoiding regulatory red tape,
 - may **enhance legal security** to acceptable levels for investors, so flexible & risk taking capital can be attracted,
 - although the **learning process** to apply concessions to minigrids in specific situations will take some time as well.
 - **Standardisation & templates** (*IFC scaling minigrids project*) can save time & enable small & medium size players to participate.

Strategic challenges & recommendations - 2

- **The product is the services** enabled by electricity
 - Most of the present minigrids' demand is from **C&I customers**
 - Move towards a **more “bundled” model**; synergies with **other sectors**
 - Provision of services opens **additional business opportunities** & creates **new challenges** to the classic regulatory approach to monopolies
 - **Funding for other services** (e.g. telecommunications, irrigation, drinking water, health, etc.) can also support minigrid development
- It is considered that **now governments may be more receptive** to new ideas
 - These are **emergency** times
 - Focus on actors that do not take too long to act
 - Convenience of **partnering** in finding actionable solutions

Strategic challenges & recommendations - 3

- Issues when establishing the **end customer tariffs**
 - Same tariff as customers connected to the main grid would be consistent with current worldwide practice of same tariff for urban & rural customers.
 - But they result in a large viability gap
 - Note that there is a lot of subsidy hidden in the current tariffs for the main grid customers; at least a level playing field is needed
 - Lifeline tariffs & unnecessary subsidies
- This leads to the 1st elephant in the living room

Strategic challenges & recommendations - 3

Elephant #1: The need for subsidies & how to finance them

- The **need** for subsidies has been well established
 - The three minigrid “markets” of Husk Power Roadmap =>
 - **There is business** out there; now or evolving in time by cost reduction or more revenues
 - **Economies of scale** with more minigrids
 - **Higher utilisation rate** with adequate productive uses
 - **Technological innovation** in design, components, metering, monitoring
 - **Adding businesses** (services) to just electricity supply
 - But **(permanent) subsidies will be necessary** for many communities to achieve inclusive electrification

Strategic challenges & recommendations - 4

Elephant #1: The need for subsidies & how to finance them

- **How to finance** the subsidies
 - **Initial capital subsidies** (e.g., RBF)
 - Fast & simple to implement, but model **without built-in sustainability**
 - **OPEX subsidies?** Why not TOTEX (i.e., CAPEX + OPEX, just “costs”)?
 - Different versions of **tariff cross-subsidisation**
 - The uniform tariff dilemma: fair & simple versus larger viability gap
 - Create fund by **removing unnecessary (blanket) subsidies**
 - Make subsidies more **politically acceptable**
 - **Hidden** in the design mechanism of end customer tariffs
 - Channel all sources of funding via some public entity (Rural Electrification Agency?)
 - The need for a “**long-term financial plan perspective**”

Strategic challenges & recommendations - 5

Elephant #2: The necessary integrated governmental perspective

- So far the Conference has mostly focused on how to make **medium size projects** (e.g. up to 100 minigrids of 25 kW) viable...
- ... but not on ***how to make an entire national electrification plan viable***, including all electrification modes, which is what governments – supported by development partners – have to finance to achieve SDG7
- It was acknowledged that current minigrad business models are **not making a significant dent** in achieving universal electricity access
- A “**regulatory platform for governments**” should include (*this is mine*)...
 - All electrification modes
 - A comprehensive (long-term, obviously) financial plan

Finally, the vision

Sustainable & scalable minigrid business models

The proposed vision

- **Non sustainable business models are not acceptable**
 - They can only be an intermediate step towards a permanent model
 - Some minigrids can be individually sustainable; most will need subsidies
- **Non sustainable business models cannot scale up**, since private capital will not be attracted
 - This explains the present reluctance of private investors to enter the minigrid sector
- **Scaling up sustainable business models to achieve their contribution to universal access requires solving how to finance the required subsidies**
 - This can only be addressed at **governmental level & jointly for all electrification modes**, according to a **techno-economic-financial plan**
 - This is the only path towards universal electricity access, **one country at a time.**

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



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