

Clean Energy Hybrid Mini-Grids in Remote Areas – an Investment Opportunity?

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Background



Potential market for mini-grids:

- +1.3bn people in rural areas, most with no access to electricity
- 60% of people in Africa in rural areas
- 3,000 inhabited islands in Indonesia/Philippines
- **mini-grids: 40% of new rural capacity by 2030**

Increasing international attention:

- World Future Energy Summit (Abu Dhabi, Jan 2014)
- **Powering Africa Strategy Summits (2011-13)**
- 4th Clean Energy Ministerial (New Delhi, April 2013)
- UK Department for International Development (ICF, 2013)
- TUB/GIZ international conference: Micro Perspectives for Decentralized Energy Supply (Berlin, 2011 & 2013)



Attracting Private Investment

Commercial viability (sustainability) increased by:

- **Stable policy framework**
- Local capacity (skills & understanding)
- **Technology to match local resources**
- Sufficient scale (>100kW)
- Pricing sufficient for re-investment
- **Uncertainty (= risk) reduced by practical implementation in local communities**

→ Finance – Policy – Technology nexus is key



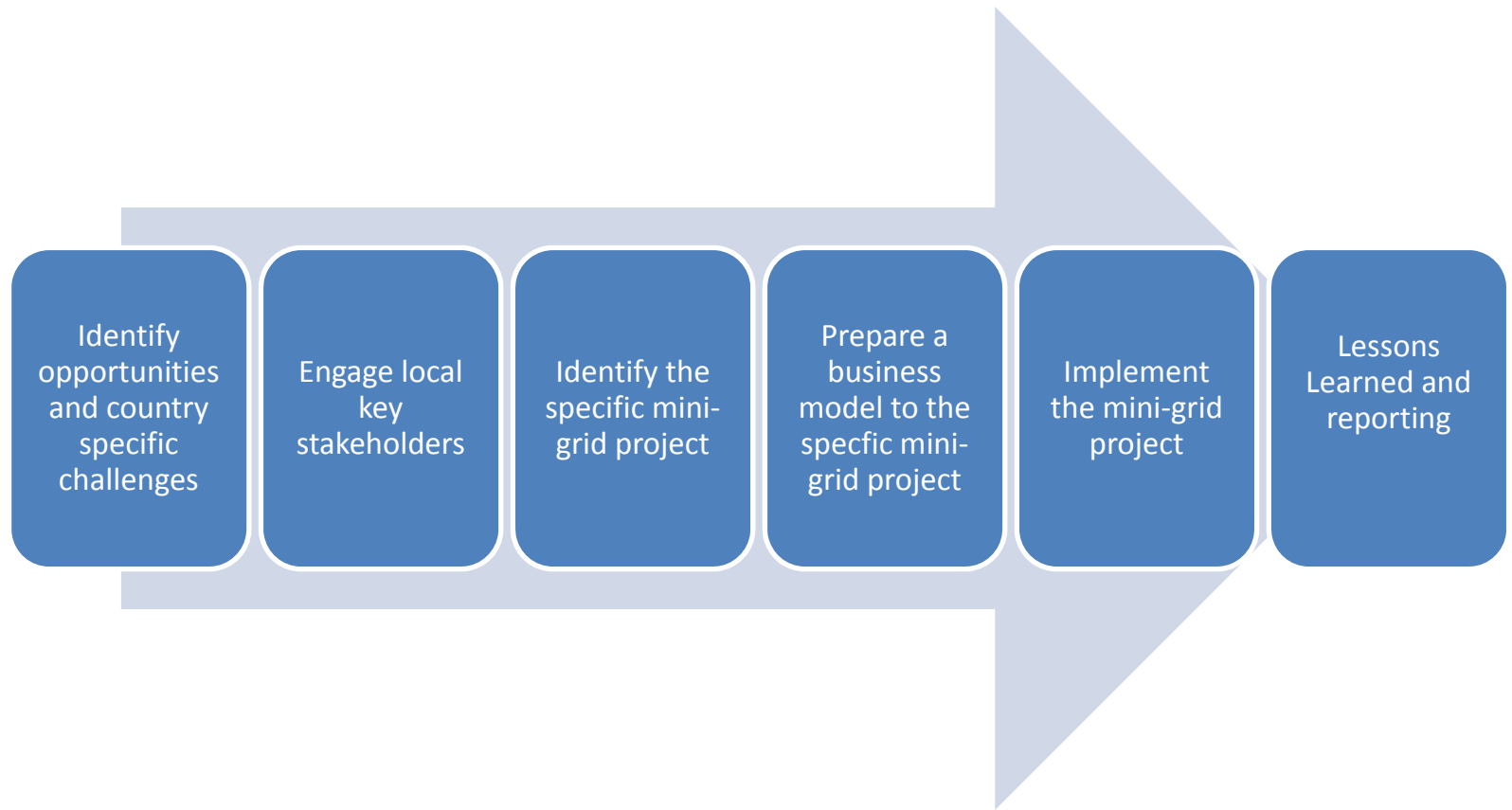
Bottom-up Approach

- **What is the demand – 24/7?**
- **Sufficient scale for returns – ABC?**
- Local access to resources
- End-users awareness, understanding
- Level of willingness to pay
- **Community ownership (& pro-activity)**

➔ ***Customer engagement at the start not the end***



UNEP Mini-Grids Concept Development



➔ ***Recognise at the outset that no one size fits all***





UNEP Demonstration Programme

- Selection of diverse target countries
- **Implementation of different financial models – brownfield and greenfield**
- **RE hybrid based on local resources (bio-energy as a back-up: F-E-W??)**
- Measurement of impact
- Development of a best practice approach for future mini-grid providers

➔ *Aim to withdraw & leave sustainable market*



Viabie Business Model - Challenges

- High up-front costs
- Long-term revenues required
- **Role of greenfield public funding**
- Local management of operations
- Risks from political/regulatory uncertainty

➔ ***Public-private partnership – walking not talking***

Current Target Countries

Mini-grids for “remote areas” - rural areas & islands in Africa, Latin America and Asia:

- Kenya & Togo
- The Gambia

- Colombia & St Vincent
- Dominican Republic

- Philippines
- Indonesia

- Southern Africa (greenfield)



Intended Outcomes

- Growing customer demand (sustainable market)
- National policy to encourage mini-grid installation
- Financiers aware and interested

➔ ***Increased clean energy access from local supplies***

- Reduced CO2 emission outlook
- Social, gender and economic upliftment





SE4All HIO on Clean Energy Mini-Grids: Challenges & Objectives



Target: *mini-grids to provide 40% of all installed capacity for universal access to electricity by 2030*

- Inadequate regulation, policy gaps or uncertainty
- Early stage market fragmentation and unmade linkages
- Capacity issues and lack of standardisation
- Lack of proven commercial business models
- Lack of access to affordable longer term finance



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