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Rural
Electrification
Shining a Light for Progress

ARE Perspective on Community Power



GSMA, Development Fund, Green Power For Mobile Working Group

Cairo, 23-24 March 2010

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ARE

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The Alliance for Rural Electrification (ARE) is a non-profit international organization currently integrating renewable energy players active in the field of rural electrification.

- Created 2006, aims to reach 100 members in 2010
- Projects and experience from more than 150 Countries
- Members include manufacturers and suppliers, consulting firms, associated organizations (EPIA, ESHA, EWA) and Universities
- Leading market event on technology & Market Development and strategy
- Contributing to market development initiative by technology and market publications and assisting Donors program (EU New Energy Facility, USAID)





Source : BP Solar

Mission and Objectives

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ARE mission is primarily to support Rural Development in Emerging countries by the implementation of sustainable power supply solutions using renewable energies

4 main objectives :

- **Capitalize and keep available** technology information, market visions, good practices as well as implementation experience

- **Promote** to the energy sector, governments, funding agencies and policy makers, the use of adapted renewables in Rural Electrification

- **Contribute** to the generation of the most appropriate mix of hardware/sofware for Community Power Schemes

- **Participate** in development and assesment of innovative technology and/or approach experiences.







Source : BP Solar

Technologies used for Community Power

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Technology	Advantages	Shortcomings
Small RE stand alone applications 	• High flexibility. • Easy to move and share.	• Limited to their specific use. • Maintenance / repairs not. safeguarded
mini-grid fed by RE/ Hybrid systems 	• Power for economic activities. • Efficient maintenance • Easily expandable • With diesel backup: Stable power supply also at night and during unfavourable weather conditions.	• if no backup: Battery storage needed. Power shortages in cases of unfavourable weather conditions. • If diesel backup: functioning depends on availability of fuel. Emissions and noise

Available technology for GSM

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Customers requirements :

- Advise on technology selection & best practice
- Proven detailed PV Sizing methodology
- Certified products and process as a must (ISO, IEC, CE)
- Optional deployment and maintenance services

Technology selection :

- LOAD < 1.5kW
  - → Solar + battery bank
  - → Solar + battery bank + DG (depending on solar insolation and CAPEX budget, it might be advisable to have DG as solar back up)
- 1.5kW < LOAD > 2.5kW
  - → Solar + battery bank + DG
- LOAD > 2.5kW
  - → Battery bank + DG



Source : BP Solar

The Community Power Opportunity

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Following the GSM infrastructure expansion in the rural area can significantly help reducing the problem of **access to energy :**

- Excess Power for Stand alone applications
- Power plant for min-grid application including telco

A real opportunity for the **private sector** as far as :

- Technology selections meet a minimum standard level
- Implementation takes into account the existing challenges of community power





Source : BP Solar

Challenges to Community Power

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Issues to still be addressed by type of actor for community power scalable development



- **Institutions/Communities :**
  - Legal Framework – not always formalised
  - Culture of grant aid for water & energy

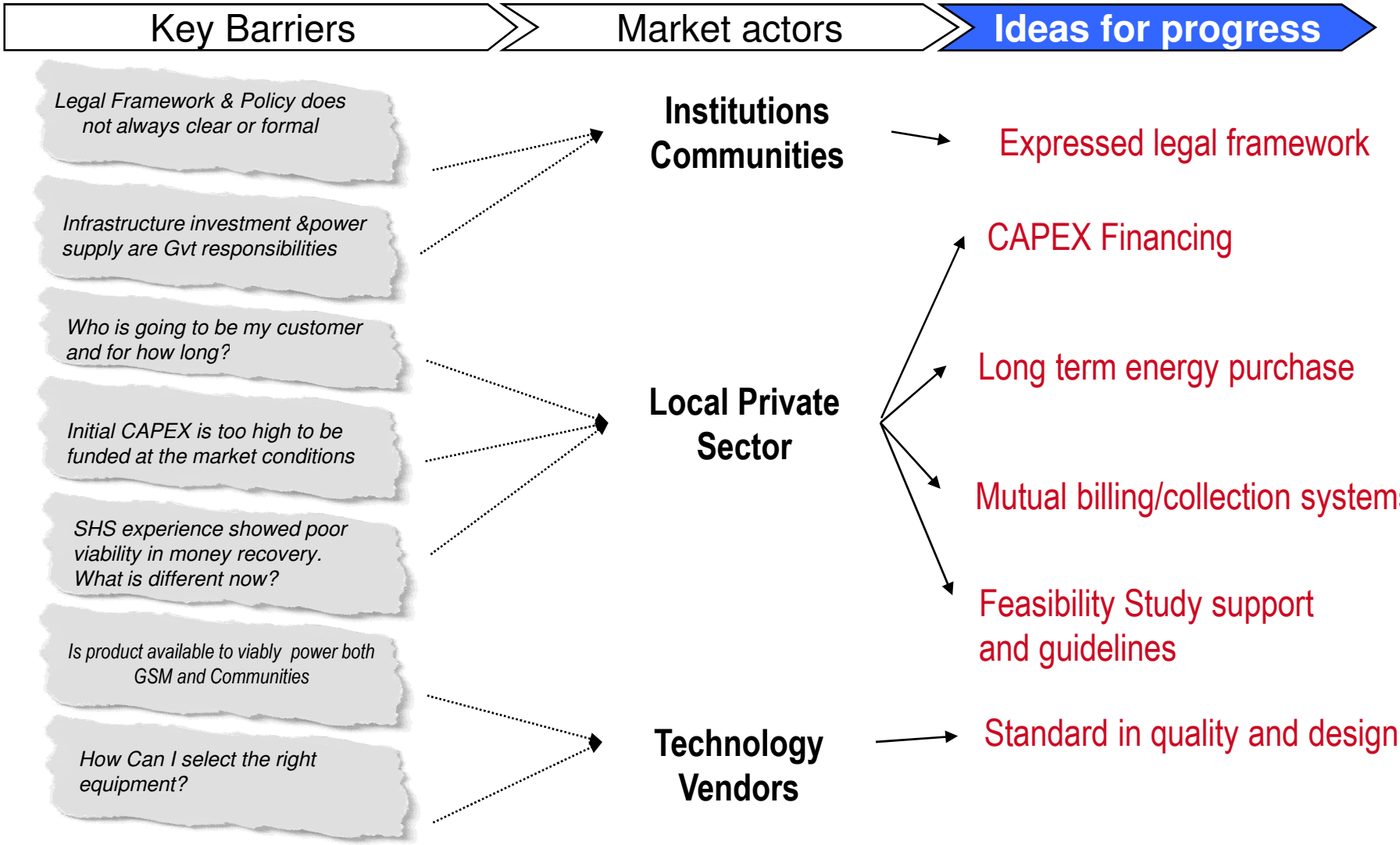
- **Local Private Sector :**
  - Business Attractiveness (fragmented customer base, long term commitment)
  - Billing systems and collections (Still no success story)
  - Finance – Capex funding for private sector



- **Technology Vendors:**
  - Market awareness (excess power; power sources,…)
  - Minimum acceptable standard

Barriers for the concept to be implemented

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Conclusion

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- *A real opportunity for the solar vendors since **technology is available***

- *Remaining **issues to address** around, quality standards, Institutions and local private sector support.*

- ***No single model** will fit all situations*

- *Will need to implement a few **pilot projects** with different scenari*

- *Rural Electrification actors and GSM operators to **share** information, approach and good practise as a must.*



More to do together…

Thank you for your attention

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CG9 What about your email or telephone?
CGuerrero, 08/02/2010