



ALER Associação
Lusófona
de Energias
Renováveis



VIENNA ENERGY
FORUM 2017

GEF side Event: Innovative Business Models to Attract Sustainable Energy Investment for LDCs and SIDS

Lessons learned from African portuguese-speaking countries



GRID-CONNECTED BUSINESS MODELS

- 4 wind farms in Cape Verde islands totalling 25 MW
- PPP with investment and financing partners
- 2008 PPP -> 2011 financial close -> 2012 full operation
- PPA, EDP and SAA contracts
- Average wind penetration of 22% (max 36,8%)
- More than 142.000 CERs sold and 260.000 ton CO2eq avoided
- Grid management skills: set points, weekly dispatch





GRID-CONNECTED BUSINESS MODELS



CRITICAL SUCCESS FACTORS

- Government Support
- Stable Macroeconomic growth
- Risk management
- Stable Policy & Regulatory Framework
- Performance Guarantees
- Project Management
- Renewable Resources
- Technology



IMPLEMENTATION CHALLENGES

- Financing
- Transportation and installation of the equipment in the 4 islands
- Change of the status quo from diesel only to high wind penetration
- Interconnection with transport and distribution grid



FUTURE DEVELOPMENTS

SPECIFIC TO CABEÓLICA:

- Demand forecast;
- Maximizing the use of available energy;
- Grid stability studies;
- Implementing a national dispatch centre;
- Smart metering and storage pilot projects.

GENERAL:

- Tender procedures;
- Bankable PPA contracts;
- Risk management and warranties;
- Tariff calculation;
- Participation of the private sector.



OFF-GRID BUSINESS MODELS

- Hybrid 312 kWp mini-grid in Guinea-Bissau
- PCP with tripartite management
- MOM in technical unit
- Local team;
- Pre-payment scheme based on energy consumption and timetable with power limiter
- Normal and social tariff schemes depending on contracted power
- More than 650 clients
- Decrease in energy expenses per family (on average)
- Increase hours of school functioning
- Improvement of health centre conditions;
- Creation of employment;
- Women empowerment;





OFF-GRID BUSINESS MODELS



CRITICAL SUCCESS FACTORS

- Engagement with DGE and local actors



IMPLEMENTATION CHALLENGES

- Lack of legal framework
- Tariff expectations
- Political instability
- Coordination of local companies



FUTURE DEVELOPMENTS

- Concession and licensing regime
- Tariff regime
- Tax regime
- IPP regime
- Coordination with utility or rural electrification Agency/Fund
- Private sector participation
- Demand forecast
- Energy efficiency actions
- Replicability



THANK YOU



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