2012 – 2017: Electrification of 7 rural communities with self-managed Solar Photovoltaic Hybrid Mini-grids in the Zanzan Region (Côte d'Ivoire), co financed by the EU Energy Facility II

GBREKO KANIAN

Total population:	4.800
#users expected @4year:	739 (698 Households + 41 basic services)
Total investment:	$ 2.614.267
Total installed power:	218,4 kWp
Main characteristics:	7 Standalone Hybrid Solar-Diesel Generator Mini-grids
	Deep social work to promote self management and productive uses of energy
	Local capacity building for installation and O&M tasks

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Strengths:

- Creation and training of 7 local associations to manage the mini grids, regrouped in the GBREKO KANIAN federation => social development.
- Local capacity building for users about RE&EE.
- Creation of an association and training of local installers to do internal consumer facilities and basic mini grids maintenance.
- Encouragement of productive uses of energy basically: electric mills, battery charging and community refrigerators and freezers.
- Installation of electrical pumps and UV water treatment.

Challenges:

- Compatibility with the national electrification strategy.
- Regulatory and institutional framework in the Ivory Coast.
- High investment per household electrified.
- Connections below the expectation (65% after 2 years).
- Consumers fraud.
- Monthly income is constant.
- Lack of local specialised maintenance.

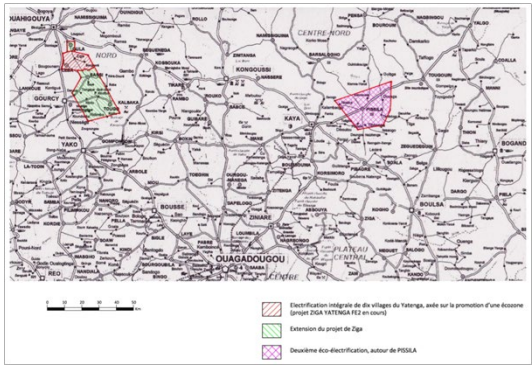
12/2014 – ongoing: Eco-dynamic electrification in the North and Center-North of Burkina Faso, co financed by the EU Energy Facility II

Eco-électrification dynamique Burkina Faso dans le Nord et le Centre-Nord

a) Electrification of 7 Solar PV Systems for 6 pumping stations of the OFFICE NATIONAL DE L'EAU ET L'ASSAINISSEMENT (ONEA) and ONEA Headquarters in Ouagadougou: Total installed PV Power 2,53 MWp, 5 PV Grid-tie systems + 2 Standalone systems => The biggest power consumer in BF => power availability ↑↑

b) Electrification of 65 villages (34 North + 31 Centre-North) in 2 eco-zones:

Total population @5year:	78,000
#users expected @5year:	13,000
Total investment:	$7.424.028
Total installed power:	587,5 kWp (and one 100/50/25 kVA transformer per village)
Main characteristics:	6 Standalone Hybrid Solar-Grid Mini-grids (standalone and grid-tie operation



12/2014 – ongoing: Eco-dynamic electrification in the North and Center-North of Burkina Faso, co financed by the EU Energy Facility II

Eco-électrification dynamique Burkina Faso dans le Nord et le Centre-Nord

Strengths:

- System architecture based on a private company commercially exploiting the 2 eco-zones by:
  - ❑ 1 main MV connection point for electricity purchase per eco-zone (2 in total).
  - ❑ 200 km MV distribution grid + 65 MV/LV transformers + 600 km LV distribution grid.
  - ❑ 6 mini grids in the most populated villages capable to operate as off-grid and on-grid systems.
- Compatibility with the national electrification strategy and approved equipment.
- Low investment per household electrified.
- Modularity of solar generation.
- Installation of electrical pumps.

Challenges:

- Regulatory and institutional framework in Burkina Faso.
- High utility electricity cost.
- Performance partially depends on the utility power cuts.
- Customer fraud.
- Monthly income fluctuates
- Instability and terrorist threat.
- Local specialised maintenance.

Cost comparison between the two different strategies for rural electrification:

CHAPTER	BURKINA FASO (USD)	IVORY COAST (USD)
DISTRIBUTION LINES (MV/LV) + TRANSFORMERS	$ 5.192.776	$ 494.345
PV EQUIPMENT	$ 980.026	$ 865.546
EQUIPMENT HOUSE	$ 167.167	$ 282.053
METERS, TOTALISERS AND CONSUMPTION MONITORING PLATFORM	$ 576.300	$ 99.657
DIESEL GENSET	$ -	$ 85.986
PUMPING STATIONS	$ 53.354	$ 29.467
HOUSEHOLDS INTERNAL INSTALLATIONS	$ -	$ 33.676
EQUIPMENTS PRODUCTIVE ACTIVITIES	$ -	$ 11.447
ADMINISTRATIVE + TECHNICAL STUDIES + LOCAL COORDINATION + SOCIAL TASK + VEHICLES & OTHER EQUIPMENT	$ 507.758	$ 712.089
TOTAL INVESTMENT	$ 7.424.028	$ 2.614.267
ESTIMATED USERS (@5 YEARS)	13.000	739
USD INVESTMENT/USER	514	3.538
kWp	587,5	218
USD/kWp	12.637	11.970

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Thanks for your attention

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