

INNOVATION FOR PRODUCTIVE ENERGY

Supporting the economy of isolated rural areas by developing access to sustainable energy for local entrepreneurs



BACKGROUND AND CHALLENGES

- In Mali, where **only 18% of rural areas have access to electricity**, the energy challenge is considerable. In the rural town of Koury, as in many other booming areas of Mali, the population has doubled over the last 10 years. In response to this new demand, the number of **micro small and medium enterprises (MSMEs)** has also increased sharply. Their development is held back, however, by the difficulty in accessing a **source of energy suited to their needs (power, schedule, etc.)**.

- In fact, despite the presence of a mini-grid operated by the **distributed energy services company (DESCO) Yeelen Kura**, energy supply only covers needs from 3 p.m. until midnight, severely curtailing the activities of these businesses, which tend to operate during the day. This particularly affects MSMEs in the processing or services sectors, which need an almost continuous supply.

- On the electrification operator's side, the **sizing of the power plant** (solar/thermal hybrid) means that it is presently impossible to supply the businesses appropriately from the grid without threatening the plant's technical and economic capability.

- Nevertheless, **the MSMEs do represent a commercial opportunity for the DESCO**, which as things stand cannot be taken up: the MSMEs are willing to pay more per kWh to ensure their development; they operate during the day when the solar power plant produces more with limited storage costs and, finally, unlike domestic customers, these MSMEs can relocate so as not to disrupt the grid.

OBJECTIVES AND PROPOSED SOLUTIONS

- The objective is therefore to bring small enterprises closer to the existing mini-grids, establishing the right conditions to meet their energy needs on a sustainable basis.

- Through **physical closeness**, resolving the technical constraints on supplying substantial power output. When 10 – 20 small enterprises are grouped together on the same site, the electrification operator can integrate these new customers directly in its grid without disrupting its initial service.

- And through **a closer commercial relationship** between the MSMEs and operator, so that a specific business tariff can be set whereby the enterprises are guaranteed **access to energy 24/7**.

BENEFICIARIES

- **10 - 20 Micro Small and Medium Enterprises**, with regular access to electricity and technical and commercial support. These may include artisans, bakers, carpenters, farm machinery repairers and so on.
- **1 Artisans Association** (168 members) managing the site
- Indirectly the **8000 inhabitants** of Koury take advantage of the project's impacts

PROGRAM OF ACTIVITIES 2016-2018

- **Enhancing the electricity supply capacity** of Yeelen Kura through installing an additional 20 kWc solar power plant made available to the grid.
- **Creation of a micro-grid dedicated to the MSMEs** on the site. Putting this micro-grid into operation and design of decision aids. Back-up from a generator powered by a local farmer biofuel, pure jatropha vegetable oil.
- **Servicing of the enterprise zone for MSMEs managed by the Artisans Association** in liaison with the town hall. Assistance with starting up and running the enterprise zone (technical, social and economic management) and its contractual relationship with Yeelen Kura.
- **Putting together pricing tools** (peak hours/off-peak hours, charging on the basis of the consumption band), to make the sale of electricity to these customers economically attractive for Yeelen Kura and the artisans.
- **Assisting the beneficiary MSMEs with their economic development:** business plans, management, access to finance, etc.
- **Capitalization of results** and dissemination amongst institutions, professionals and financial institutions to influence adaptation of their operating methods.

TECHNICAL PARTNERS

- DESCO (Distributed Energy Service Company) "Yeelen Kura"
- AMADER Agence Malienne pour le Développement de l'Énergie Domestique et l'Électrification Rurale
- ASAOK Association of artisans and workers in Koury
- Koury municipality

FINANCIAL PARTNERS

- French Development Agency
- Nexans Foundation

EXPECTED RESULTS AND IMPACTS

SOCIO-ECONOMIC IMPACTS

- **Enhancing the productivity** of the entrepreneurs and their ability to develop their businesses and local employment
- **Making the area more attractive** for the establishment of new businesses and activities and for the youth.
- **Increasing the supply of local products and services** for residents.

- **Creating local added value**

ENVIRONMENTAL IMPACTS

- **Use of renewable energy sources** for sustainable economic development
- **Reduction in transport** through the development of appropriate local provision



FOCUS ON THE MODERN BAKERY IN A RURAL SETTING



A bakery (using only an electric kneading machine) consumes as much electricity as 20 domestic customers whilst paying only one standard connection fee. Productive clients such as bakeries are often too difficult to manage for the electricity supplier Yeelen Kura, as their high power requirements significantly disturb the stability of the electricity grid.

Nonetheless, energy remains an important expense and an indispensable resource for the development of the bakery's activities. Sidiki KONE is the owner of a bakery in Koury, Mali that directly employs 8 people in the making of the bread, and 15 others as salespeople throughout the community. To pursue his activity, Sidiki KONE is connected to the local power grid, yet it only offers electricity from 3 p.m to midnight, allowing him to make only two batches of bread. For the third batch in the morning, Sidiki relies on his generator. By benefiting from a continuous power supply, his bakery would be able to produce an additional one or two batches of bread per day, whilst reducing expenditure on fuel for the generator.

WEB LINKS:

Publication : Sustainable energy in rural areas in Africa (in French)

Video: Presentation of Green Business Area in Mali

ON OUR WEBSITE AND YOUTUBE CHANNEL

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