

PACE

Public Private Partnerships for Access to Community Electricity

Case Study: Mini-grid from Diesel Genset, Magale Village, Uganda

Background

Magale is a small village of about 6,000 people in Mbale District, Eastern Uganda. It is a remote village located 30km from the national electricity grid. Agriculture is the main activity for the majority of the population, although a few people also engage in petty trade of non-agricultural goods. These form the affluent group in the village.

Table 1: Details of electrification program in Magale

Population of Magale village	6,000
Electrified households in 1999	61
Electrified households in 2000	48
Minimum tariff (domestic)	Ush3000 a month
Maximum tariff (commercial)	Ush12,000 a month
Tariff for institutions	Ush80,000 a month

The electrification of Magale village in 1999 was mainly the initiative of a catholic nun, Sr Emily Nasimolo who was posted as a nurse to the small village hospital. When, in 1982, the hospital expanded its services to include Community Based Health Care (CBHC) among others, patients began flooding in. Night-time operations became necessary, hence the need for better lighting. Sr Emily approached the Mill Hill Fathers, a catholic organisation working in Uganda, who donated a 37.5 kVA generator to the hospital in 1991. However, the hospital was not electrified because Sr Emily was transferred to another hospital just before the generator arrived and it was not until she returned to Magale that electrification of the hospital became possible.

Because the generator's capacity exceeded the needs of the hospital, a decision was taken to sell the excess electricity to the community. However, this situation became unsustainable. Problems began to develop when some members began to use heavy electronics which overloaded the system. This put pressure on the generator and increased fuel consumption from 23 to 25 litres for 3 hours, the duration of which the generator runs daily. Subsequently, tariffs had to be increased and consumers refused to pay, forcing the hospital to halt the electricity sales.

Financing

The electrification of Magale village was financed mainly through donations. The Mill Hill Fathers donated the 37.5KVA generator which they ordered from the UK, while the equipment and other accessories for installing

the mini-grid were donated by some members of the consumers' committee. Generally, the whole electrification process was marked by voluntarism, and depended a lot on the contribution and interest of personalities rather than institutions.



Magale Hospital

Public-Private Partnerships

The project was initiated and developed by individuals, mainly Sr Emily, the technician, and members of the consumers committee which comprised local council leaders and the prominent members of Magale village. In the sense that the electrification of Magale village involved a hospital teaming up with community members to install a mini-grid system and sell electricity to those who could afford it, the project demonstrates both public and private sector involvement.

However, the problems that led to the scheme's failure to deliver a sustainable supply of electricity to the community reflects the lack of an effective partnership between the various stakeholders.

Access to Electricity

Livelihood benefits – Direct Consumers

In the first four months of operation of the mini-grid system, 61 consumers were connected. During this time, the community of Magale reaped numerous livelihood benefits. These were mainly in the education and health sectors. The hospital's popularity grew

because it was operating more efficiently and competently, and stayed open for longer hours. With the hospital now able to attract more qualified staff, a wider variety of services was made available. The mini-grid essentially made it possible for the hospital to operate the generator by selling off the excess capacity to outsiders.

Example of Benefits: Confidence in Magale Sub-Hospital's competence grew and there was no need for the community to travel long distances to Mbale and Tororo in search of treatment. The hospital was also able to work longer hours, and to undertake surgical operations.

The hospital also introduced health based video resources that it could use to educate the community on sanitation, hygiene and HIV/AIDS.



The children's ward at Magale Hospital

Considerable benefits were also experienced in the schools, most of which switched to electricity from using kerosene lamps during night classes. It also improved security for pupils, especially on the routes between the dormitories and the classes. The Headmaster of Magale Parents School, Mr Musila, said that academic performance in 1999 improved by about 40 per cent in both the ordinary and advanced exam levels. For this reason, most of the schools acquired their own generator sets after the mini-grid project collapsed in 2000.

Commercial users

Some commercial users, especially those operating restaurants and bars made huge profits during the period of the mini-grid project. Business in Magale trading centre grew, as did the population and visitors.

More food items were brought to be sold in the Magale markets, and these supplied the absentee landlords who had become regular visitors to the town as they hurried to renovate their houses and build new ones. One

Magale resident confessed that he made brisk business from his lodge and bar businesses, and earned up to Ush50,000 a week from the bar alone. Property and rental rates in Magale town increased sharply during this period, with monthly rates jumping from Ush20,000 to Ush30,000.

Livelihood benefits – Indirect Consumers

Indirect benefits were mainly manifest through the influx of people keen to use the town's new services, especially at night. The decision by some traders to place bulbs outside their shops and restaurants had the effect of providing street lighting to the community which enabled the public to enjoy a significant level of security. At the same time, households could now have their lead acid batteries charged in Magale town, instead of having to travel to Mbale town, 30km away, which had always been the case. Residents with mobile telephones could also charge their batteries from the trading centre.

Conclusions

The livelihood benefits from the electrification of Magale were, unfortunately, reduced when the project collapsed after only one year of operation. It seems that the failure of this project was a result of the absence of legal and institutional mechanisms for dealing with the problems and misunderstandings that arose among the managers of the project.

A major problem was that many customers were defaulting on payments or conniving with unconnected residents to steal power, leading the project managers to adopt tough prevention methods. This affected innocent customers and increased the bad blood between the customers and the managers. The most important points to note are:

- Failure to involve customers in management of the project gave rise to mistrust and a belief that the tariff increases were unjustified.
- Absence of a strong public-private partnership resulted in reliance on the charisma and good will of a few individuals.
- Only the local leaders and prominent members in the community were involved in the project, and the majority of people excluded. Wider community participation can enhance acceptance and ownership of the project.
- Although direct connections were restricted to those who could afford them, the improvement of local services highlights the potential for indirect livelihood benefits if the scheme had been sustainable.

