



Energy for Rural Health Centres

Energy Background

Health centres in rural areas of many developing countries face serious challenges. Besides a lack of qualified medical staff, equipment and medicine, bad road infrastructure and inappropriate energy supply can become major obstacles in providing crucial basic health services for the rural population.

Nonexistent or unreliable access to modern energy is one of the most obvious burdens for the provision of rural health services. Vaccines, blood, and other medicines may go to waste if uninterrupted cooling cannot be assured. Without proper electric lighting, most medical treatments can only be conducted at daytime, while emergency surgeries at night may only be illuminated by dim kerosene lamps or torches. Health centres in rural Uganda have to pay about five euros per month to purchase kerosene for lighting the medical facilities. In many health centres, accidents that can be attributed to the absence of good lighting regularly occur during emergency deliveries.

The inefficient use of biomass such as firewood or charcoal (e.g. for food preparation or sterilization) can lead to significant expenditure for health facilities, staff and/or their patients, while indoor air pollution negatively affects the health of staff and patients alike.

Approach

Through its energy programmes, GIZ is providing access to electricity services and improved cooking solutions for rural health facilities in several developing countries. Where possible, electricity is provided by connecting health centres to national electricity grids or village-scale mini grids powered by small hydro plants or solar hybrid solutions. In more remote settings, solar photovoltaic (PV) systems for individual health facilities are being installed. These small stand-alone systems are sufficient to power lights, solar refrigerators and basic lab equipment such as centrifuges or microscopes.

In cases where food is prepared by the health facility, GIZ supports the installation of large-size improved cooking stoves to reduce indoor air pollution, expenditure for firewood consumption and pressure on local forest resources. However, patients' relatives often prepare food individually on small makeshift open fires close to the health centre. The installation of small improved cooking stoves in separate sheltered cooking places at a reasonable distance from the health centre can reduce firewood consumption as well as exposure to dangerous emissions. Besides tackling financing issues, GIZ is providing technical support and training to the local service providers and staff of the individual health facilities to guarantee the sustainable management and maintenance of the installed technologies.

Reliable access to clean energy in rural health centres contributes to the achievement of the Millennium Development Goals (MDGs 4, 5 and 6): improved cooking stoves and electricity help to 'reduce child mortality', 'improve maternal health', and 'combat HIV/AIDS, malaria and other diseases'.



Preparing food in a hospital kitchen in Uganda



Project Examples

With support from the Dutch-German Energy Partnership 'Energising Development', the European Union and in cooperation with UNHCR, the GIZ Promotion of Renewable Energy and Energy Efficiency Programme in Uganda has supported the installation of PV systems in 144 rural health centres since 2009. On average, the total installed capacity at each health centre is about 630 Wp. The respective District Health Office is required to contribute 20 % of the overall system costs (on average 6,000 euros per system) and is responsible for operation and maintenance. The systems are installed by local solar companies under the guidance and supervision of GIZ. The typical loads range from indoor and security lighting, medical spotlights and refrigerators to small medical equipment such as electric microscopes.

In 2010, an impact study revealed that the solar systems enhanced the provision of medical services through high-quality lighting during treatment of night-time emergencies, emergency deliveries and for security purposes. Solar fridges facilitate instant immunization of children at health centres that previously did not have fridges. Kerosene expenditure for lighting purposes was found to be 70 % lower in health centres with solar systems compared to health centres without electricity. Electricity for phone charging has facilitated work-related communication among health workers in far-off locations.

With advice from GIZ-project staff on stove technology and kitchen design, a roofed kitchen with improved stoves and good ventilation was installed at the Mulanje Mission Hospital in Southern Malawi. The kitchen became popular as people became aware of the advantages: the new stoves were more economical, cooked faster and created less smoke, and the building had better ventilation compared to the previous fireplaces; today even young mothers feel comfortable bringing their babies into the new smoke-free kitchen.

Benefits from Solar Energy

"Thanks to the solar fridge the health centre can now store vaccinations and more medicine. Before we received the PV system people had to walk 3 kilometres to reach the next health centre with a functioning fridge. Now that we have light we can see our patients even at night. This is a big change, especially in the case of child deliveries. We don't have to use hurricane lanterns any more."

- Swaibu, Health Staff, Kibibi Health Center, Uganda

Many efficient technologies for basic energy services are already in successful use in developing countries. Yet there is often a lack of well-developed strategies for the large-scale, sustainable introduction and scaling-up of these technologies. In many countries, for example, less than 10 % of the population use efficient stoves. Development and implementation of political strategies for sustainable resource use are also an important factor for sustainable energy supply, but many governments give them little thought. Our aim is therefore to further develop and disseminate strategies for pro-poor basic energy services and to incorporate these concepts into projects and programmes of German development cooperation and other partners.



Health Centre with Solar Panel, Jinja District, Uganda

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