

Solar power for Ghana's health service and agricultural production

Green People's Energy (GPE)

The challenge

Ghana has one of the highest electrification rates in Africa. In cities and larger towns, the electricity supply is stable. Rural areas, however, remain without access to electricity. Here, smallholder farmers and medium-sized agricultural enterprises have their production sites. Their work contributes to almost one-fifth of the gross domestic product.

Our approach

Renewable energies (RE) are a key to reducing energy poverty in rural Ghana, mitigating climate-damaging greenhouse gas emissions, and improving people's living conditions. This is what Green People's Energy (GPE) is working for. The activities target smallholder farmers, cooperatives, women's groups, small businesses, schools, and health stations. Farmers and cooperatives can cultivate their land better and earn higher incomes if they use solar energy productively. For example, they irrigate their fruit, cereals, and vegetables all year round using solar pumps and are thus independent of the irregular rainfall and produce larger harvests. The project supports Ghanaian solar energy companies in offering their products and services and provides advice – from technical design to needs-based procurement. The companies are also financially supported through incentive payments when they sell solar technologies to rural businesses and cooperatives (this strategy is referred to as results-based financing).

In parallel, GPE promotes the use of RE systems in rural health stations. With the help of solar power, more and previously unfeasible health services can now be offered, such as the disinfection of medical cutlery or the cooling and storage of polio or Corona vaccines.

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These technical and financial offers are flanked by a comprehensive training programme. Technical training forms the basis for RE not only to become established, but also to be available to people in the long term. To achieve this, technicians must be able to set up, maintain, and repair solar pumps or off-grid solar systems. In addition, credit institutions must analyse the economic viability of this technology to be able to professionally assess loan applications. Training courses not only deal with energy-related aspects, but also provide information on the dangers of overexploiting water resources and how these can be prevented. GPE therefore fosters good curricula and the training and further education of teachers as well as technical and economic specialists. To keep the knowledge gained available in the country in the long term, trainings are carried out in close by and with three technical universities in Ghana.

For RE to catch on, stable framework conditions, standards and support concepts are also needed. Therefore, GPE advises the Energy Commission (EC) on how to license companies that want to sell and install solar pumps and ensure quality standards.



Empowering rural communities with renewable energies for better healthcare delivery and improved agricultural services.

Green People's Energy Project in 9 African Countries

In sub-Saharan Africa, 600 million people have no access to a secure energy supply. As part of the Marshall Plan with Africa, under the BMZ Ministerial Initiative for Africa, the programme reduces energy poverty and supports the development of decentralised RE systems in Africa's rural regions.

It involves citizens and local businesses in Ethiopia, Benin, Côte d'Ivoire, Ghana, Mozambique, Namibia, Zambia, Senegal and Uganda. The project strengthens the supply of reliable electricity to social institutions and promotes the framework conditions for sustainable investments with its focus on local value creation.

The outcomes

Training

- The Universities of Ho, Sunyani and Tamale make use of practice-oriented curricula for providing competency-based trainings on solar powered irrigation. 30 training facilitators have upskilled their teaching portfolio.
- 230 trained professionals apply state-of-the-art knowledge. 20% out of these participants are female.

Investments into Renewable Energies for Agriculture

- 150 commercial enterprises have taken advantage of the advisory services to use RE systems.
- 90 small-scale agribusinesses have invested in solar powered irrigation systems with technical and financial support from the project. Their families benefit from increased yields and higher incomes.
- 2 large-scale agribusinesses have invested over 1 Million Euro into the installation of solar power plants, saving half of their electricity costs and carbon emissions.
- 1 new licensing scheme by the EC quality standards for companies selling solar pumps.



A practical example:

Solar irrigation systems for smallholder farmers

In the northern regions of Ghana, the harvest yields of smallholder farmers fluctuate extremely because rainfall is unsteady or does not occur at all for months, partly due to climate change. With solar irrigation systems, however, they can cultivate their soils all year round and avoid the emission and cost-intensive use of diesel pumps.

Therefore, GPE is working with several Ghanaian companies that offer and install solar irrigation pumps to the rural population. The companies receive technical advice and financial incentives through the project. Together, information campaigns and user trainings on the use of these technologies and on financing options are initiated – especially for female users and investors.

Provision of Solar Power to Health Services

- 31 solar power systems, 23 vaccine refrigerators and 44 solar community streetlights have been installed in rural clinics across the Afram Plains.
- Around 90,000 villagers benefit from round-the-clock basic health care with lighting, well-preserved vaccines, ventilation and sterilisation, all powered by solar energy. Medical services such as obstetrics and vaccination campaigns have been brought up to modern standards.
- In addition, trained health workers and technicians from the Ghana Health Service maintain the solar power systems.

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